

# **PROCEEDINGS OF THE 5<sup>th</sup> INTERNATIONAL CONFERENCE ON EDUCATIONAL RESEARCH AND PRACTICE 2019**



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**EDUCATING THE  
DIGITAL SOCIETY:  
INTEGRATING  
HUMANISTIC AND  
SCIENTIFIC VALUES**

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22 & 23 • OCTOBER • 2019  
PALM GARDEN HOTEL  
PUTRAJAYA

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Publisher: The Faculty of Educational Studies, Universiti Putra Malaysia (UPM), Serdang, Selangor, MALAYSIA  
Printed in Malaysia

eISBN 978-967-960-453-5



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*THE 5<sup>TH</sup> INTERNATIONAL  
CONFERENCE ON EDUCATIONAL  
RESEARCH AND PRACTICE (ICERP)  
2019*

**ICERP (2019)**

*EDUCATING THE DIGITAL SOCIETY:  
INTEGRATING HUMANISTIC AND  
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**22<sup>nd</sup> – 23<sup>rd</sup> OCTOBER 2019**

**PALM GARDEN HOTEL  
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## *EDUCATING THE DIGITAL SOCIETY: INTEGRATING HUMANISTIC AND SCIENTIFIC VALUES*

22<sup>nd</sup> – 23<sup>rd</sup> OCTOBER 2019

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PUTRAJAYA, MALAYSIA

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# TABLE OF CONTENT

<b>SCHOLARSHIP OF TEACHING AND LEARNING</b>		
1.	EVALUATING ASSESSMENT MODERATION: TOWARDS BEST PRACTICE  Christine Shobana Arthur	1
2.	WHAT CONSTITUTES EFFECTIVE LEARNING? AN INTRODUCTION TO TALAQQI FRAMEWORK  Muhd Khaizer Omar, Aida Suraya Md Yunus, Ismi Arif Ismail, Nurfadhlin Mohd Sharef, & Masrah Azrifah Azmi Murad	14
<b>CURRICULUM AND INSTRUCTION</b>		
3.	ANALYSIS OF THE LOVE OF THE COUNTRY CHARACTER EDUCATION IN INDONESIA AND AUSTRALIA  Putri Mahanani, Adhimas Wahyu Agung Wijaya Sa'dun Akbar, & Eny Nuraisyah	23
4.	EXPLORING THE PROFESSIONAL JUDGEMENT PRACTISES OF CLASSROOM ASSESSMENT AMONG PRIMARY SCIENCE TEACHERS  Nuraini Abu Bakar, Umi Kalthom Abd Manaf, Aminuddin Hassan, & Siti Salina Mustakim	33
5.	COMMON ERRORS IN ORGANIC REACTION MECHANISMS: IS THERE ANY STRATEGY TO TEACH STUDENTS ABOUT THEIR OWN ERRORS?  Abdulmalik Sabitu, Othman Talib, Nurzatulshima Kamarudin, & Norizah Abdul Rahman	42
6.	THE IMPACT OF PSYCHOSOCIAL CLASSROOM LEARNING ENVIRONMENT TOWARDS HIGHER ORDER THINKING SKILLS ABILITY OF SECONDARY SCHOOL STUDENTS IN ACCOUNTING STUDIES  Nor Sa'adah Jamaluddin, Suhaida Abdul Kadir, Arnida Abdullah, & Siti Noormi Alias	50
7.	PROMOTING PhET SIMULATION ON ONLINE LEARNING TO ENHANCE CRITICAL THINKING SKILLS  D. Sulisworo, N. Ramadoan, S. Ardianti, & Widodo	58

8.	FRIENDS AND PARENT'S ROLE IN UNDERGRADUATES' CAREER CHOICE INTENTIONS: THE MODERATING EFFECT OF GENDER  Tan Fee Yean & Tay Lee Chin	64
9.	I AM HÉ: CREATING CULTURAL AWARENESS IN TEACHING MANDARIN AS A FOREIGN LANGUAGE  Nuraini Jafri & Umi Kalthom Abdul Manaf	71
10.	A SYSTEMATIC REVIEW OF THE IMPLEMENTATION OF THE BLACKBOARD LEARNING SYSTEM AS E-LEARNING: OPPORTUNITIES AND CHALLENGES TO THE ONLINE LEARNING ENVIRONMENT  Aliyah Kayyad Almjilad	79
11.	WHY CODING? WHY NOW? FROM CODING TO COMPUTATIONAL THINKING THROUGH COMPUTATIONAL MATHEMATICS PROBLEM BASED LEARNING (CM-PBL)  Ku Soh Ting, Othman Talib, Aida Suraya Md. Yunus & Maslina Zolkepli	88
<b>INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)</b>		
12.	THE BENEFITS OF AUGMENTED REALITY TECHNOLOGY IN HIGHER EDUCATION: A REVIEW OF THE LITERATURE  Wang Dan, Mas Nida Md. Khambari, Wong Su Luan, & Abu Bakar Mohamed Razali	100
13.	THE KEY CHARACTERISTICS OF MOBILE LEARNING FOR EMPLOYEE'S DEVELOPMENT IN KUWAIT WORKPLACE: A LITERATURE REVIEW  Nada Alajmi, & Mas Nida Md. Khamabari, Nur Aira Abd Rahim, & Wong Su Luan	107
14.	EVALUATING TECHNOLOGY ATTITUDE SCALE FOR PRE-SERVICE MATHEMATICS TEACHERS: FACTOR AND RASCH ANALYSIS  Yulia Linguistika & I Gusti Ngurah Darmawan	117
15.	THE RISE OF ARTIFICIAL INTELLIGENCE IN BANKING SECTOR  Khyati Kochhar, Harsh Purohit, & Ravisha Chutani	127
16.	CONDITIONS THAT INFLUENCE TEACHERS' ICT INTEGRATION IN TEACHING: REFLECTIONS FROM TECHNOLOGY INVESTMENT MANAGEMENT  Nor Asiah Mohamad@Razak, Habibah Ab Jalil, Steven Eric Kraus, & Nor Aniza Ahmad	136

<b>TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET)</b>		
17.	MENEROKA IMPAK DAN CABARAN PENSYARAH TERHADAP PELAKSANAAN E-PEMBELAJARAN DI KOLEJ VOKASIONAL ZON TENGAH, MALAYSIA  Mohd Amiruddin Ag. Damit & Muhd Khaizer Omar	148
18.	STUDENTS' INTERESTS IN TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET) PROGRAM: A SYSTEMATIC REVIEW  Nazia Azeem & Muhd Khaizer Omar	158
19.	THE INFLUENCE OF GENDER, CAREER EXPOSURE AND SELF-CONCEPT FACTORS TOWARDS EMPLOYABILITY SKILLS AMONG STUDENTS IN ENTREPRENEURIAL DEVELOPMENT AND GRADUATE MARKETABILITY PROGRAM  Mohd Hazwan Mohd Puad & Ain Nadzira Ahmad Bakhtiar	166
20.	FAKTOR MEMPENGARUHI KOMPETENSI TPACK GURU PTV DI SEMENANJUNG MALAYSIA  Mohammad Hafiz Salleh, Suhaida Abdul Kadir, Rahimah Jamaluddin, & Mohd Hazwan Mohd Puad	178
21.	HUBUNGAN ANTARA PENGUASAAN KONSEP DENGAN KEMAHIRAN BERFIKIR ARAS TINGGI (KBAT) MURID TINGKATAN EMPAT PRINSIP PERAKAUNAN  Wee Goik Leng, Suhaida Abdul Kadir, & Rosnani Jusoh	185
22.	PRE-SERVICE TEACHERS TRAINING SATISFACTION AND PRACTICAL KNOWLEDGE ACQUISITION IN ARTIFICIAL INTELLIGENCE TEACHERS TRAINING PROGRAM: A MULTIPLE REGRESSION STUDY  Song Pu, Nor Aniza Binti Ahmad, Mas Nida Md. Khambari, Ng Keng Yap, & Chin Wei Mun	193
23.	RELATIONSHIP BETWEEN CAREER FUTURE CONCERN, PERSONAL GOAL ORIENTATION, AND PERCEIVED SOCIAL SUPPORT TO CAREER ADAPTABILITY AMONG MALAYSIAN VOCATIONAL COLLEGE  Zulhazmi Zahari & Muhd Khaizer Omar	202
24.	PRELIMINARY STUDY ON IDENTIFYING FACTOR THAT INFLUENCE JOB SATISFACTION AMONG HOSPITALITY GRADUATES IN HOTEL INDUSTRY  Norsuhada Mat Hasan, Hairuddin Harun, Noor Azman Abdul Samad, & Noor Aqilah Abdul Latiff Janaton	211

25.	MOTIVATIONS TO CONTINUE TEACHING FOR EXPERIENCED HIGH SCHOOL AGRICULTURE TEACHERS  Normala Ismail, Scott Smalley, & Mohd Hazwan Mohd Puad	218
26.	KESAN MODUL PEMBELAJARAN KOPERATIF TEKNIK STAD (STUDENTS TEAMS-ACHIEVEMENT DIVISIONS) SAINS RUMAH TANGGA TERHADAP KEMAHIRAN BERFIKIR ARAS TINGGI  Misra Tako, Rahimah Jamaluddin, & Suhaida Abd. Kadir	224
<b>SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)</b>		
27.	STEM DAN KOMPETENSI GURU RBT  Nurul Shafinie Ismail, Rosnani Jusoh, & Muhd Khaizer Omar	233
28.	AN INTEGRATED INTERNET OF THINGS (IoT) ON THE PROBLEM BASED LEARNING STRATEGY FOR CLIMATE ISSUE: A PRELIMINARY DESIGN  Meita Fitrianawati, Vera Yuli erviana, Nanang Suwondo, & Dwi Sulisworo	242
29.	THE USE OF MOBILE APPLICATION: WHY PLAY IS IMPORTANT IN TEACHING ELEMENTARY MATHEMATICS?  Ibrahim Alkhaldi, Othman B. Talib, Nurzatulshima Bt. Kamarudin, Habibah Ab. Jalil	248
30.	TYPES AND COGNITIVE LEVELS OF QUESTIONS ASKED BY SECONDARY AGRICULTURAL SCIENCE TEACHERS  Siti Shuhaidah Abdul Latir & M. S. Whittington	257
<b>ARTS AND HUMANITIES EDUCATION</b>		
31.	THE LEARNING CURVE: COMPASSION AND PASSION OF AN EDUCATOR IN THE FILM FREEDOM WRITERS  Swagata Sinha Roy & Kavitha Subaramaniam	266
32.	IMPROVING STUDENT'S PROBLEM SOLVING SKILLS THROUGH FLIPPED CLASSROOM ASSISTED ANIMATION VIDEO PHYSICS  Y B Bhakti, I A D Astuti, R A Sumarni, D Sulisworo, & M Thoifur	271
33.	POTENTIALS AND ANXIETIES: EDUCATION AND TECHNOLOGY THROUGH A DYSTOPIAN LENS  H. A. C. Hettiarachchi	278



34.	EDUCATION SYSTEM OF SRI LANKA DURING THE PORTUGUESE AND THE DUTCH PERIOD  H.H.N.S. Hewawasan	285
<b>RELIGIOUS AND MORAL EDUCATION</b>		
35.	GURU SEBAGAI PEMUDAHCARA PEMBENTUKAN AMALAN BERTINGKAH LAKU MORAL DI SEKOLAH: SUDUT PENGALAMAN PELAJAR  Maizura Yasin, Nur Surayyah Madhubala Abdullah, Samsilah Roslan, & Nor Wahiza Abd. Wahat	293
36.	PERANAN PENDIDIKAN MORAL DALAM MENYUBURKAN SIFAT KEMANUSIAAN DALAM KALANGAN KOMUNITI DIGITAL  Noor Zulina S De Asildo, Nur Surayyah Madhubala Abdullah, Maizura Yasin, & Marzni Mohamed Mokhtar	304
<b>LANGUAGE AND LITERACY EDUCATION</b>		
37.	A MERRY CHORUS: LEARNING THE LANGUAGE OF LOVE IN THE FILM ADIWIRAKU  Kavitha Subaramaniam & Swagata Sinha Roy	315
38.	SCAFFOLDING SPEAKING FLUENCY USING THE VIDEOBLOG PORTFOLIO  Asyraf Shuib, Lilliaty Ismail, & Umi Kalthom Abdul Manaf	320
39.	TEACHING LISTENING IN THE DIGITAL SOCIETY: AN EXPLANATORY STUDY  D.A.G. Ariyasinghe	330
40.	RELATIONSHIP BETWEEN COMMUNICATION APPREHENSION AND WILLINGNESS TO COMMUNICATE AMONG TESL UNDERGRADUATES IN A PUBLIC UNIVERSITY IN MALAYSIA  Lilliaty Ismail, Fadzilah Abd. Rahman, & Noorlila Ahmad	344
<b>ENTREPRENEURSHIP EDUCATION</b>		
41.	THE USE OF SMARTPHONES AMONG THE RURAL MICRO-ENTREPRENEURS IN NEGERI SEMBILAN  Putri Noorafedah Megat Tajudin & Khairuddin Idris	351

EDUCATIONAL LEADERSHIP, POLICY AND ADMINISTRATION		
42.	ACHIEVING SDG 4 QUALITY EDUCATION IN MALAYSIA: WHAT ARE THE LESSONS FROM INTERNATIONAL LARGE SCALE ASSESSMENTS?  C. M. Hew D. Gill & Elizaveta Berezina	362
43.	EXAMINING THE MOST COST EFFECTIVENESS METHODS OF HIRING INSTRUCTOR FOR LIFELONG LEARNING PROGRAM AT COMMUNITY COLLEGE IN MALAYSIA  Noorul 'Ain binti Md Shariff, Suhaida Abdul Kadir, Khairuddin Idris, & Ramli Basri	373
44.	INFLUENCE OF PRINCIPALS' READINESS FOR CHANGE ON SCHOOL EFFECTIVENESS  Iskandar Padzil, Suhaida Abdul Kadir, Ahmad Fauzi Mohd Ayob, & Mohd Mursyid Arshad	378
45.	THEORETICAL FRAMEWORK OF SCHOOL INSPECTION EFFECTS ON SCHOOL  Nurul Jawahir Md Ali, Suhaida Abdul Kadir, Ramli Basri, & Steven Eric Krauss	388
46.	A JOINT VESSEL FOR SCHOOL EFFECTIVENESS: SCHOOL CULTURE AND CLIMATE  Thiruchelvan Koundyannan, Suhaida Binti Abdul Kadir, Ramli Bin Basri, & Ahmad Fauzi Bin Mohd Ayub	399
47.	HIGHER EDUCATION ASPIRATIONS AND BARRIERS AMONG MALAYSIAN STUDENTS FROM LOW-INCOME FAMILIES: DEVELOPMENT OF A CONCEPTUAL FRAMEWORK  Arnida Abdullah	410
48.	MEASURING CLASS TEACHER'S PERCEPTIONS OF REVISED PARENTAL INVOLVEMENT SCALE  A. Keetanjaly, Suhaida Abdul Kadir, Wong Su Luan & Arnida Abdullah	415
49.	THE INFLUENCE OF COLLEGE TEACHERS' LEADERSHIP STYLE CHANGE AND EMOTIONAL REGULATION SELF-EFFICACY  Lu Jing	432

50.	MALAYSIAN ACADEMICIANS PERSPECTIVES ON CONTINUOUS PROFESSIONAL DEVELOPMENT OF ACADEMICS IN MALAYSIAN PUBLIC UNIVERSITIES  Soaib Asimiran & Ismi Arif Ismail	439
<b>HUMAN RESOURCE DEVELOPMENT (HRD)</b>		
51.	WORKPLACE INCIVILITY: THE IMPACT ON THE MALAYSIAN PUBLIC SERVICE DEPARTMENT  Alias, M., Ojo, A.O., Sharon, K.S, & Ameruddin, N.F.L.	446
52.	THE MEDIATING EFFECT OF JOB SATISFACTION BETWEEN WORK-RELATED FACTORS AND WORKPLACE DEVIANT BEHAVIOUR AMONG EMPLOYEES IN THE MALAYSIA HOTEL INDUSTRY  Amirah Sayeedah Binti Ali Mahamad, Mazni Alias, & Kok Wai Chew	456
53.	FACTORS INFLUENCING ORGANIZATIONAL CITIZENSHIP BEHAVIOUR (OCB) AMONG LOCAL GOVERNMENT EMPLOYEES IN LAGOS STATE, NIGERIA  Ikenna Jennifer Amaka, Siti Noormi Alias, & Mohd Ashraff Mohd Anuar	463
54.	THE RELATIONSHIP BETWEEN INDIVIDUAL FACTORS AND CAREER ADAPTABILITY AMONG FRESH GRADUATES: RESULTS FROM A PILOT TEST  Ilyana Anas & Siti Raba'ah Hamzah	471
55.	ANTECEDENTS OF WORK SATISFACTION AMONG EMPLOYEES WITH SPECIAL NEEDS CHILD  Segufta Yasmi Binti Abdul Rahman, Bahaman Abu Samah, Roziah Mohd Rasdi, & Mohamad Fazli Sabri	480
56.	COHESIVE THEORETICAL FRAMEWORK IN MEASURING TEACHERS' INNOVATIVE BEHAVIOR IN MALAYSIA  Aduni binti Johari & Nor Wahiza binti Abdul Wahat	486
57.	A SYSTEMATIC LITERATURE REVIEW ON THE COMPETENCIES FOR PUBLIC SERVICES  Ho Hsin Hung & Roziah Mohd Rasdi	493
58.	INCULCATING KNOWLEDGE SHARING BEHAVIOR IN ORGANIZATION: ROLES OF INTRINSIC AND EXTRINSIC MOTIVATIONS  Roziah Mohd Rasdi & Gangeswary D/O Tangaraja	506

59.	QUALITY OF WORKING LIFE AND CAREER ENGAGEMENT AMONG YOUNG CANCER SURVIVORS IN MALAYSIA  Siti Raba'ah Hamzah, Zulaiha Muda, & Siti Nur Syuhada Musa	513
60.	CAREER TRANSITION TO BECOME A SOCIAL ENTREPRENEUR: THE CHALLENGES FACED BY YOUTH SOCIAL ENTREPRENEUR IN MALAYSIA  Nur Raihan Che Nawi, Mohd Mursyid Arshad, Steven Eric Krauss, & Ismi Arif Ismail	520
61.	DEVELOPING UNDERGRADUATE STUDENTS EMPLOYABILITY THROUGH CAREER DEVELOPMENT LEARNING  Baba Kachalla Wujema & Roziah Mohammed Rasdi	529
62.	Kelestarian Program Pembangunan Organisasi dalam Badan Bukan Kerajaan di Malaysia  Anis Suriany Che Mohd Shukree, Mohd Mursyid Arshad, Ismi Arif Ismail & Siti Noormi Alias	536
63.	LEARNING, ADAPTING AND LEADING: A MALAY WOMAN EXPERIENCE  Siti Noormi Alias & Tg. Tijan Marjani Tg. Abdullah	542
64.	ENHANCING LEADERSHIP QUALITIES THROUGH EXECUTIVE COACHING: CONCEPTUALIZING THE LEARNING PROCESS WITHIN COACHING CONVERSATION IN MALAYSIA  Nasreen Khanum Nawab Khan, Mohd Mursyid Arshad, Ismi Arif Ismail & Zoharah Omar	550
<b>CONTINUING EDUCATION AND LIFELONG LEARNING</b>		
65.	URBAN FARMING FOR COMMUNITY WELL-BEING IN KLANG VALLEY, MALAYSIA  Milah Zainal, Siti Raba'ah Hamzah, Steven Eric Krauss, & Tengku Mahmud Tengku Muda	558
<b>PHYSICAL EDUCATION AND HEALTH EDUCATION</b>		
66.	MOTIVATION AND CREATIVITY AMONG STUDENTS: A META-ANALYSIS  Qin Dan, Norlizah bt Che Hassan, Nor Aniza Ahmad, Maizura Yasin, & Song Pu	583

<b>INCLUSIVE EDUCATION</b>		
67.	RECOMMENDING THE NEW PATH WAY TO IMPART DIGITAL LITERACY USING BHARATIYA MODEL OF DIGITAL LITERACY  Harsh Purohit, Ravisha Chutani, & Khyati Kochhar	584
<b>EDUCATIONAL PSYCHOLOGY AND SOCIOLOGY</b>		
68.	PREPARING EMERGING ADULTS FOR THEIR CAREER BY FOSTERING SELF-EFFICACY AND EMOTIONAL INTELLIGENCE IN TERTIARY EDUCATION  Ameruddin, N. F. L., Berezina, E., & Choo, G. Y.	594
69.	GENDER RELATIONSHIP ON ACCEPTING REGGIO EMILIA APPROACH IN RURAL EARLY CHILDHOOD DEVELOPMENT CENTRES, AMONG PARENTS IN KATSINA STATE, NIGERIA  Ibrahim Abdullahi & Zumilah Zainalaludin	601
70.	EMOTIONAL INTELLIGENCE AMONG MALAYSIAN YOUNG ADULTS IN COMMUNITY COLLEGE, JITRA  Tee Ker Shin, Nor Aniza Ahmad, Samsilah Roslan, & Norlizah Che Hassan	611
<b>COUNSELLOR EDUCATION AND COUNSELLING PSYCHOLOGY</b>		
71.	LET'S REFRESH DECAYING KNOWLEDGE: VIEWING RARE COMPLICATIONS IN PRACTICING CONFIDENTIALITY  Neerushah Subarimani & Noor Syamilah Zakaria	619
72.	PLAY AND FUN IN LEARNING ETHICS EDUCATION  Noor Syamilah Zakaria, M. Iqbal Saripan, Alyani Ismail, & Neerushah Subarimani	625
73.	ON BECOMING ETHICAL COUNSELORS: MEASURING COUNSELING ETHICS COMPETENCY  Noor Syamilah Zakaria, Neerushah Subarimani, Wan Marzuki Wan Jaafar, Ahmad Fauzi Mohd Ayub & M. Iqbal Saripan	631
74.	INSERTING THE VALUE OF TRI HITA KARANA INTO INSTRUCTIONAL CONTENT OF BLENDED LEARNING TO ENHANCE STUDENTS' COMPETENCIES  Luh Putu Putrini Mahadewi, I Made Tegeh, Ignatius I Wayan Suwatra. & Anak Agung Gede Agung	637

	<b>LIST OF REVIEWERS FOR ICERP (2019)</b>	646
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# PROCEEDINGS

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*EDUCATING THE DIGITAL  
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VALUES*

# **SCHOLARSHIP OF TEACHING AND LEARNING**



## Evaluating Assessment Moderation: Towards Best Practice

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### ABSTRACT

*Moderation of assessment is done to ensure consistency of marking across academicians, subjects, and programmes. The concerns that have always been raised by many academicians from the tertiary education setting are the difficulties of attaining consistency, the apprehensiveness of new academic members and the demanding nature of the assessment moderation process which increases the workload of academicians. Using a Theory of Change (Weiss, 1998), this paper provides a brief case-study description by evaluating the intended outputs, assumptions and activities of assessment moderation. In particular, this study aims to identify and depict the assessment moderation practice, elicit views on its effectiveness and assess the extent to which improvements can be attained in the higher education (HE) setting. The academic staff members of University A were interviewed to obtain their views and comments on their assessment moderation practice. The participants were selected based on the following characteristics: 1) Must have completed assessment moderation for at least 10 rounds (have at least 5 years and above of experience in moderation), 2) Must have carried out assessment moderation once or twice (have less than one year of experience). The outcome of this study challenges University A to improve its assessment moderation practice by introducing other relevant and suitable methods of moderation. The paper also proposes applicable solutions for the institution to address the lack of training and support amongst new academic staff members and part-timers. The need for establishing better coordination between moderators and markers as well as establishing a formal buddy system were highlighted in this case study. This paper emphasises continuous quality improvement at the HE setting because universities allow for substantial discretions and local adaptation (Weick, 1995). All in all, this study adds further weight to the existing body of literature on moderation practices in HE institutions.*

**KEYWORDS:** Assessment Moderation, Theory of Change, Shared Understanding

## 1.0 INTRODUCTION

In the higher education (HE) setting, assessment is always considered a tool to shape and influence students' experience (Bloxham & Boyd, 2007). Another crucial aspect of assessment is the assessment moderation practice which ensures that the marker has awarded grades fairly and consistently while adhering to marking criteria. This practice is crucial in order to maintain the quality of HE. As Holroyd (2000) mentioned, "there are pressures for accountability, transparency, and consistency from government and from potentially litigious students as consumers which make reliable marking more important now than ever before". If this was mentioned 18 years ago, the importance of maintaining appropriate and effective assessment moderation system has also increased significantly more so now because of the demanding nature of HE.

The governing body in Malaysia, MQA, has clearly stated the need for assessment moderation. It is mentioned that there is a need for HE providers to establish a system for moderation of assessment in order to ensure consistency and quality (MQA, 2013). However, how the practice is established by every institution may differ. For that reason, it is interesting to look at Chart 1 which shows the discretion framework of evaluative practices in institutions by Bamber, (2011, p.129).

Connecting the model proposed by Bamber (2011) to the assessment moderation practice in Malaysia, the practice basically falls under the quadrant of tightly controlled focus with a loosely controlled process. The focus of moderation has been established by the governing body, while the mechanism of achieving its goals relies on the institution itself. When different institutions use different mechanisms of evaluating reliability and consistency, there is definitely a need to evaluate this evaluative practice in order to identify and depict assessment moderation practice, elicit views on its effectiveness and assess the extent to which improvements might be sought after. This study also suggests that the Bamber's model (Figure 1) serves as a valuable analytical tool in elucidating the control University A has over the way it carries out its moderation of assessments practice. This model aptly divides the discretion capacity and control the institution has over assessment moderation.

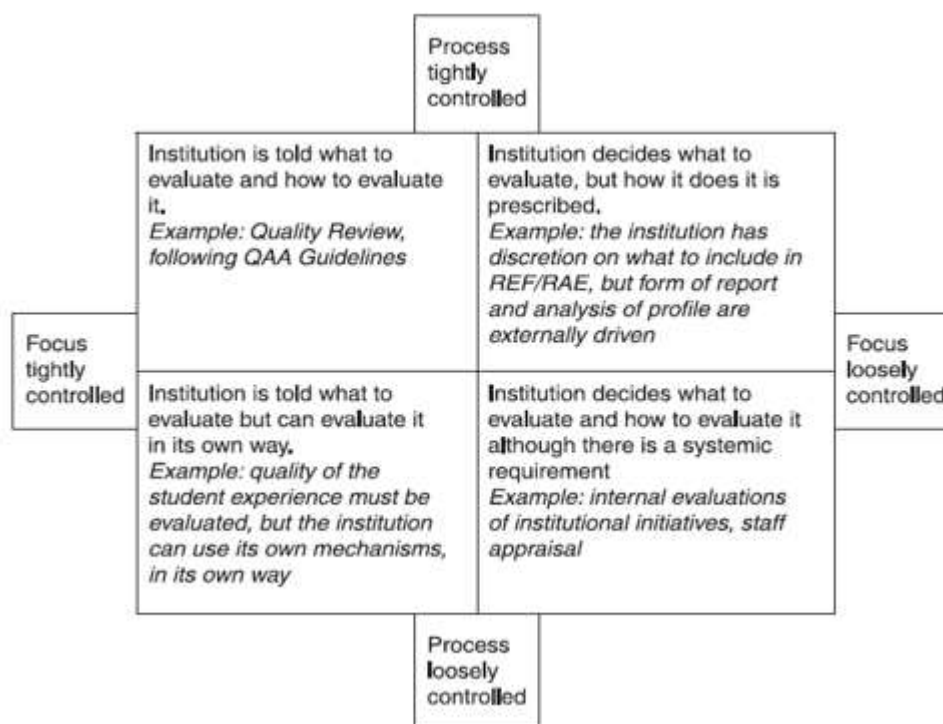


Figure 1: Discretion framework of evaluative practices in institutions (Bamber's Model, 2011)

According to Bloxham, Hughes and Adie (2016) assessment moderation is described as a crucial, critical yet problematic component of quality assurance in the HE context. In reality, the purpose of moderation is to ensure the validity and reliability of grading judgments and decisions. However, the concerns that have always been raised by many academicians are the difficulties of attaining reliability (Watty et al., 2014; Sadler, 2013; Annetts, Jones & Deursen, 2013), the apprehensiveness of new academic members or sessional staff (Beutel et. al, 2017; Grainger, Adie & Weir, 2016) and the demanding nature of the assessment moderation process which eventually increases the workload of academicians (Bloxham, 2009).

For these reasons, the evaluation for assessment moderation practice is devised with the intention of developing a better moderation practice for University A, a private HE institute in Malaysia, and for the academic community.

In order to achieve the objective of this paper, the following research questions are posited :

1. To what extent does University A provide professional support for the development of knowledge, understanding and practice in assessment moderation?
2. How was the assessment moderation practice delivered and received?
3. To what extent are the assessment moderation practice goals and objectives achieved?

Having established the research questions, this study sets out to evaluate the moderation practice of University A by identifying the extent the institution provides professional support in terms of assessment moderation especially for the new teaching staff. This study also seeks to carry out the investigation in an inclusive manner whereby the input of new teaching staff is also taken into consideration. Besides that, the study also takes into account the details of assessment moderation activities in order to identify whether the goals of assessment moderation have been met. Hence, whilst the objective is to achieve validity and consistency of marking judgements, the argument that is raised is whether the objective is being achieved.

## 2.0 SITUATING THE STUDY

The purpose of evaluation is to assess the goals of a programme in relation to its effectiveness which eventually contributes to the improvement of the programme (Weiss, 1972). This evaluation can be associated with continuous quality improvement (CQI) in HE. CQI refers to the understanding of the function of a system and improving the performance of the system.

## 2.1 Evaluation Approach

This evaluation adopts the Theory of Change (ToC) model. According to Clark & Anderson (2004, p.12), “ToC links outcomes and activities to explain how and why the desired change is expected to come about”. Besides that, Weiss (1998, p.55) also pointed out that ToC not only helps to answer the question “Did the program work?” but also “What made it work?”, “Why was it successful or unsuccessful?” and “How can we make it better?” Msila & Setlhako (2013) described ToC as a necessary tool in evaluating for CQI:

“Every community needs a roadmap for change. Instead of bridges, avenues and freeways, this map would illustrate destinations of progress and the routes to travel on the way to achieving progress. The map would also provide commentary about assumptions, such as the final destination, the context for the map, the processes to engage in during the journey and the belief system that underlies the importance of travelling in a particular way. This type of map is called a *theory of change*”.

Therefore, in order to understand the complexity of the assessment moderation practice in University A, the process is illustrated in Chart 2. The intended outcome of the practice is described first. It is then followed by the underlying assumptions regarding this practice. Then the activities that takes place to fulfil the assumptions are described as well. Later on, Chart 2 will be relooked at to observe if there are any other emerging outcomes or even if any interventions are needed for the assessment moderation to be improved.

## 2.2 Assessment Moderation

Analysing moderation of assessment using Bamber’s discretion framework of evaluative practices in institutions (*refer to chart 1*) provides the evaluator with a perspective to understand the control the institution has over assessment moderation practice. It seems that the governing body – in this case MQA – has delegated the responsibilities to the institution to carry out assessment moderation practice according to the institution’s circumstances. The focus is tightly controlled, however, the process is not. Therefore, the institution has been given the autonomy to carry out moderation of assessment as it seems fit to the institution. Having the autonomy, the institution supposedly should be free in carrying out the assessment moderation practice without much restriction as long as the practice is evident and effective. This paper offers a critical analysis of assessment moderation practice of University A by using ToC. The intended outcome of assessment moderation in line with the assumptions and activities of the practice is analysed. Therefore, ToC not only helps to evaluate to the effectiveness of this evaluative practice but also helps to purposefully identify the pathway to change if it is necessary.

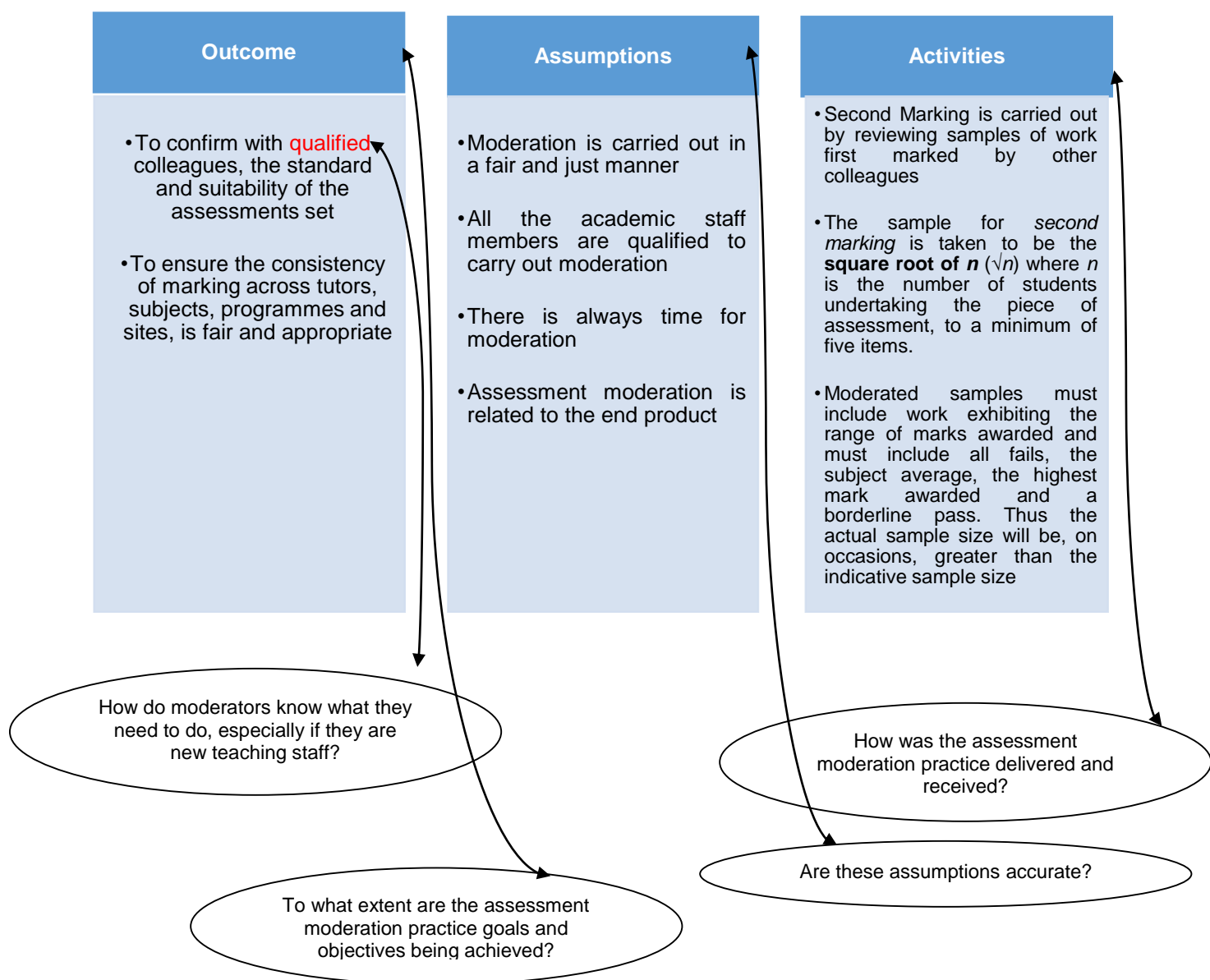


Figure 2: Theory of Change Model prior to the evaluation

### 3.0 METHODOLOGY

#### 3.1 Research Method

The evaluation was administrated from August to September 2018. The evaluation assessed the assessment moderation practice of University A, particularly the Business School (SUBS) and the Centre for English Language Studies (CELS). This study employed a qualitative, case study approach to provide a comprehensive and holistic analysis of assessment moderation practice that takes place in these two departments. Yin (2018) highlighted that case study approach helps to obtain more extensive and in-depth description of a social phenomenon.

The researcher takes the perspective of interpretivist. Mack (2010, p.8) mentioned interpretivists believe that “knowledge is gained through personal experiences”. This study attempts to capture the perspectives of different participants and focuses on how the participants’ different meaning contributes to different perspectives of the topic. Although the benefits of the case study research have been mentioned, the concern that may arise is the generalisability of the research findings to the entire community. However, as Yin (2018, p.20) mentioned, “case studies are generalisable to theoretical prepositions and not to populations or universes”. This study also falls under exploratory case study as this study can be seen as a

preliminary study that can be used to be tested in a larger scale, even evaluating all the departments in University A.

### 3.2 Data Collection

In this study, the participants were selected through purposive sampling. The participants should fall into any one of the following characteristics: 1) Must have completed assessment moderation for at least 10 rounds (have at least 5 years and above of experience in moderation), 2) Must have carried out assessment moderation once or twice (have less than one year of experience). The researcher obtained the information on academics that fit the criteria from programme leaders of each department. Once this was obtained, an email was sent to the academics to invite them to take part in the study. This email was accompanied by a participant information sheet, consent form and ethical approval letter from University A. Those who gave consent to be part of the study were then contacted for a semi-structured, face-to-face interview session. Each interview session lasted around 15-30 minutes and was undertaken at mutually convenient times. All the interviews were audio recorded and transcribed to analyse and identify themes.

The sample was composed of fourteen academic staff, seven of which were drawn from SUBS and the other seven were from CELS. Overall, eight participants fit the criteria of having completed more than 10 cycles of assessment moderation. Another six participants fulfilled the criteria of having carried out assessment moderation once or twice at University A. It is crucial to include the voices of new academic staff as well in this research to promote inclusivity. Out of the fourteen participants, four of them had responsibilities either as Heads of Department or as Programme Leaders. It is important to identify the responses of top management because they play a major role in managing the quality of assessment moderation practices.

### 3.3 Ethical Consideration & Data Analysis

Prior to the face-to-face interview session, participant information sheet, consent form and ethical approval letter from University A were emailed to all participants. This research has been approved by both University A (Malaysia) and Lancaster University (United Kingdom) research ethics committees. BERA (2011) guidelines were adhered to throughout the research by fully informing the participants the research details, providing the participants the rights to withdraw from the study and treating the data with confidentiality. The participants of the research were treated anonymously and were given a pseudonym. The interviews were audio recorded after obtaining consent and were subsequently transcribed. The transcripts were imported to the qualitative software package NVIVO (QSR International, 11). Keywords-in-context analysis of the interview was carried out to evaluate if there are any recurring themes to understand the depth of the issues discussed. The findings and discussions are presented according to common themes. Each theme is described in greater detail below, and is illustrated by interview quotations to support the discussions. The quotations are italicized for easier identification. The numbers within parentheses after the excerpts represent the code numbers of the interviewees.

## 4.0 FINDINGS AND DISCUSSION

In this section, the most common themes that emerged from the findings are discussed while answering all the research questions of this study as well.

### 4.1 Assessment Moderation Process

It was found that SUBS and CELS carry out their assessment moderation process slightly differently although there are some similarities. The similarities of the assessment moderation process are that both the departments only carry out second or double marking. Double marking is only carried out if the course carries 6 credits or more (e.g. final year projects). Besides, the examiner individually marks and then the sample which is calculated by the square root of the total scripts is given to the moderator. In this study, the power issue with second marking is observed, especially among new academic staff who tend to agree to the veteran first markers' marks when they moderate or are being moderated. This is obvious especially in the first few semesters of the new academic staff's tenure. When asked why the new staff thinks that her standard of marking is not at the appropriate level. One of the new academic staff's answers was:

*"my second marker was an experienced lecturer" (1).*

Having said that, through this evaluation, it was found that CELS and SUBS are bounded by very limited options of moderation, particularly focusing on second marking, when there are other types of moderation which can be explored. For instance, Beutel et al. (2017) highlighted:

“in conference moderation, each member of a teaching team marks all assignments in his/her tutorial group or allocated assignments and then brings a representative of each grade or agreed benchmarks to a teaching team moderation meeting in which consensus for the grades is the focus”.

This type of moderation may be ideal when the course is taught by many academic staff. At the same time, the discussions from conference moderation may also contribute to better shared understanding among moderators. The next section will highlight further on shared understanding which is one of the emerged themes of this study.

Moving on to the differences that was discovered between these two departments are the types of assessment that is moderated. CELS moderates all the assessments even if the weightage of the assessment is only 5%. However, SUBS sends its assessments for moderation only if the weightage is more than 20%. The participants from both departments were unsure why such differences occur. Of course, the participants from CELS highlighted this difference because they are the ones who are required to do more moderations of assessments:

*“The first one that I've noticed recently is that we moderate all the assessments regardless of weightage which to me is a bit strange because the amount of work that is involved in moderation and the discussion I had recently was whether or not we need to moderate all assessments or we should just focus on time and energy really on those that carry a large percentage” (5).*

*“Here they came up with policy where all graded assessments should be moderated, just for consistency purposes. There must be a reason for this to happen. So far, in my previous institution, we only moderated the final exam, which carries the highest percentage, the other you can if you are co-teaching. That is okay to do it. So I guess every institution has different policies. Only thing is we have to ask ourselves if it is necessary to go for all” (6).*

It can be pointed out that the differences occur because of the tightly controlled focus but loosely controlled process (refer to Figure 1) which refers to the ‘relative control an institution may have on the way it undertakes its internal evaluative practice’ (Bamber, 2011, p.129). According to the 2018 Academic Regulation document of University A, all final examinations and coursework accounting for 50% or more of the total subject has to be sent for moderation. The discrepancy that can be noticed between the practice and the policy actually has a positive outlook. This is because the departments that have been evaluated actually do more moderation than is required. This is reflected by the academic staff from SUBS who mentioned the following:

*“I will always give more samples for moderation, giving more is better than giving less” (14).*

Although the moderation process within University A is loosely controlled, the number of samples that is being moderated by the departments are always more. However, for CELS more could be an issue in relation to time as how participant number five has highlighted earlier. Regardless of the department the participants belong to, 70% of the participants found time to be an issue in moderating assessments. Some of the comments of the participants are as follows:

*“Personally, I find having to moderate exam paper you need careful attention, I need to really pay attention to what I am reading, because it concerns not only me but students also. And then the challenges in there in terms of writing the report, it takes time. I find it is the most challenging, having read all these, spotting all the errors, sometimes no errors at all, having to put it down in words, it is challenging” (3).*

*“The biggest issue with moderating or second marking is always time” (11).*

*“We could probably improve the process but I think it's very rushed. The timing... The markings are very rushed...” (12).*

Bloxham, Hughes & Adie (2016) highlighted that when there is little time available, as in university assessment timelines, the task of achieving appropriate, consistent and fair standards is enormously difficult. Other than that, Watty et al. (2014) highlighted that the teaching team that gives importance to greater shared understanding, could face time as an issue because it will take time for moderators to come to an agreement. However, this can lead to a greater agreement on grades and confidence in the alignment with established learning outcomes. Is that not the outcome that MOA intends to achieve? (refer to Figure 2). However, the bitter truth that has been revealed by one of the participants of this study with regard to time is the fact there could be a compromise in terms of quality:

*"Sometimes the problem we face is the time is quick is tight. So after you finish creating the final exam papers and then you submit for the second moderation and then you have to start to prepare for the next semester coming in. So we are rushing and when you're rushing, sometimes you tend to compromise little bit of the quality doing the work. So I would say it's more about time constraints" (13).*

Therefore, in this case, a solution is needed to identify a better moderation practice that allows a better timeline approach. For this reason, it can be said that quality assurance could be related to time. One of the participants highlighted that sometimes, when discrepancy is observed between markers in assessment moderation process, it is only limited to that many sample scripts that is being moderated. Since there is time constraint, at times the entire cohort is not remarked which by right should be re-examined if quality assurance is taken into consideration. The following excerpt describes the participant's comment:

*"So then I honestly think that this process is a bit futile because if you have hundred scripts and I'm only marking like ten if it's 10%, how would that benefit the entire cohort or maintain standardisation of marking whereas there should be a process where all this is done. Then, I think the Head, or whoever is in charge should meet, so that the committee will decide whether there is discrepancy here for all these students of this cohort. So I feel if you honestly ask me, it's a good process. Otherwise, it stops at the 10 scripts and it doesn't make any difference. Then I will say that the moderation process is ineffective. It does not serve its purpose" (7).*

Therefore, the suggestion given by participant 07 may be taken into consideration. Overall, there is still room for improvement in terms of the assessment moderation process carried out by University A. There is a need to identify further why there is a difference in samples of assessments that are being moderated according to the Academic regulation document of University A. Besides that, the suitable type of moderation assessment should also be chosen in relation to the timeline that is available more so if the department deals with a large cohort of students.

## **4.2 Training and Support**

Another emerging theme from this study is training and support provided by the institution in terms of preparing the staff members for assessment moderation. If chart 2 is revisited, the outcome of assessment moderation is to confirm with qualified colleagues, the standard and suitability of the assessments set. The word 'qualified' has to be defined here in order for all the stakeholders to understand. It raises a point of consideration on how do the moderators know what they need to do. This evaluation intends to look at the support that the university provides for the academic staff in terms of assessment moderation. The responses of the participants are basically leaning towards negative reviews concluding that there is no proper training provided.

If proper training or support is not given to the staff members how can the institute measure that the assessment moderation practice is being carried out by qualified staff members. It can be said that the second marking process is one of the crucial aspects in achieving quality assurance. As such, this section is divided into two sub-categories under training and support.

### **4.2.1 Training and Support: New Academic Staff**

Some of the participants mentioned that finding out what they need as a moderator is always an individual effort. It also appears that some Heads of Departments (HODs) take extra initiative in providing

some basic information in relation to assessment moderation. The following excerpts describe the participants' reflections:

*"I actually asked personally, so I asked few questions before I started. I also took the subject file so I went through all of it and it helped." (1)*

*"My personal experience has always been that as the head of department, What I do is try to brief them. In terms of what is the expectations and how you know what you should do. And personally I'm not sure whether we have any proper briefings or training in terms of exactly how you do the moderation. And I also don't think that the moderation document itself really guides people to look at key issues or rather than issues. So yeah. So you asked me whether people are aware how to do it. I'm not surprised if they are not sure. So a lot of it is as you do You sort of like and try there and sort of figure it out" (9).*

From the responses above, it can be noticed that the participants realise that there is no proper training and it always falls back on the individual's effort in asking questions or some HOD's initiative of providing information using their own effort. It is discouraging to realise that the institution does not provide some form of formal training relating to assessment moderation. One of the participants mentioned that training may not be possible because it involves many different subjects:

*"I think it's quite difficult to have a training programme to standardise because it's different for every subject" (12).*

This may be true but it brings us to the question of how the institutional system is expecting the academic staff to know what they need to do. Is it just because they have some teaching experience for some time elsewhere? Of course, it is an advantage if the new teaching staff have experience in assessment moderation but what about understanding the system within the institution itself? According to Beutel et al. (2017), in order to gain a better shared understanding, the new staff has to purposefully inducted to the moderation of assessment process. The training and support becomes more and more important when part-timers are involved in the teaching system. One of the participants highlighted that this is a major issue in achieving standardisation of marking and moderation when the assessments are marked by part-time tutors but not the full-time examiners:

*"It's going to be difficult and I'm going to probably have to hand it to a tutor to mark and I'm already struggling with the thought of how I'm going to tell her what I'm looking for and the rubrics are quite detailed that because they're all individual papers and there's so many different things... That's a big problem for students and I think the friction between lecturers and tutors is quite a big issue really and lots of just tend to be part time. You don't see so much of them. So the whole question of how you manage and standardise them..." (12).*

Therefore, the findings of this section lead the reader to the next category which is: what is then the proper way of support?

#### **4.2.2 Training and Support: Shared Understanding**

As mentioned earlier, the findings also revealed that there is a need for greater shared understanding between moderators and markers. Identifying the perception of the first marker is very crucial. The following excerpts explain that:

*"I find it difficult if the internal moderator is not my area of expertise. So I have difficulties when the internal moderator just merely relies on answer scheme. So they might penalise the students unnecessarily. It's not fair" (10).*

*"But when I was teaching on a programme that was moderated by UK University, this university was good in the sense that they included, I guess as a form of professional development for all the lecturers who were teaching on the programme. So what they did was they explained the philosophy*



*of assessment for the University. They also talked about how for example year one modules are created and get to year three and how the assessments should be similar in a sense where there is continuity and increasing in difficulty, and then we actually had I think two sessions with senior lecturers and programme leaders from the University where they talked about how they use rubrics for example and how they then would moderate. So if this is a piece of work, we will actually sit down and mark it together as in time and have a discussion about why marks were given in a certain way. So to me that was interesting because that was more formalised process and that helped because then when you actually do the assessments you're marking assessments they are some guidelines and there's if there's any variation, it's less right?" (5).*

*"I believe different individuals will interpret differently, because I notice that some of us will have different expectations, so I guess the expectations are different way seeing things so maybe lecturer A will say that oh, I think we should give this mark to the students so I guess we establish the discussion in the very beginning before we do the marking scheme and so on then we are having things like in the marking scheme, like point to be taken. so if we put that done, that is easier for us" (6).*

From the responses above, establishing a discussion among moderators and first markers is crucial. This will definitely help in achieving greater shared understanding among staff members. This is in view of Wallace et al. (2010) who suggested that moderation is not something that happens at the end of the assessment process but something that starts from the planning stage. It is also crucial to ensure that the moderators have understood the criteria involved so that discussion can be easily established.

As highlighted by participant 08 and 10, some moderators merely depend on the answer scheme as a point of judgement. However, they feel sometimes that other answers can also be accepted as long as students are able to justify their answers. The difference of perception occur because a less proficient marker may rely more on the marking criteria while the experienced marker may make more holistic judgements (Sadler, 2013). Such discrepancies can be avoided if both moderators and markers can be involved in the planning stage of assessment where more opportunities can be given for discussion. Active engagement of the academic staff in creating assessment criteria facilitates greater shared understanding instead of just being given the criteria to follow (Rust, O'Donovan, and Price, 2005).

This leads to another dimension of the findings of this paper. Some participants mentioned about introducing a formal buddy system which may help in achieving greater shared understanding. The following excerpts describes the participants' ideas:

*"The buddy system is lacking is under the HR department. I do notice is we don't have a checklist, because the checklist plays an important role for confirmation. With that checklist right, we are given mentor-mentee thing to look at, to say we have covered these things. the moderation can go in. The training part... I do see a gap there" (6).*

*"Some universities have a buddy system or mentor-mentee system. But unfortunately in this university I didn't get a buddy system. I mean to me I just rely on my own experience. So what I learned from here just pick it out from there but we don't really have a mentor system. Does it help to have a mentor? I'm not sure. I think to me it is the same thing across the board but maybe will help from younger groups" (8).*

Buddy system may help to formalise the training and support received by academic staff members particularly the new staff and part-timers when involved in the moderation process. In the long run, proper measuring steps can be formalised if learning is taking place as participant number six suggested. Besides that, more discussions can be established for greater understanding between moderators and markers.

In summary, the findings of this study reveal that moderation of assessment is a complex process because the effectiveness of this evaluative practice is mainly influenced by the knowledge attained by carriers of this practice as well as the institution's choice of moderation method which eventually results in academic staff to be under tight timeline. This brings forth a point of discussion whether moderation is carried out for quality enhancement or is it just another compulsory task by the institution that needs to be completed. Since this practice is complex, it is only appropriate to justify the changes using ToC. Chart 3

shows a number of possibilities to achieve the objective of moderation of assessment. Special attention should be given to the fact that the outcome remains the same. This reflects the tightly controlled focus this evaluative practice has (*refer to Figure 3*). However, in order to achieve the outcome, the activities leading to the assumptions have to be changed. Connecting to Bamber's Model (*refer to Figure 3*), the institute is free to change the process on condition the outcome is achieved. This study prompts University A to be creative with its process of assessment moderation.

In order to achieve the desired outcome, firstly the moderation of assessment need to be carried out in a just and fair manner. Therefore, there is a need for greater shared understanding between the moderators and markers. Besides that, since the institution is now compelled to move from its comfort zone, it has to explore other types of moderation in order to achieve quality in the process. Secondly, if it is assumed that all the academic staff members are qualified to carry out moderation then proper training and support should be provided by the institution. The support could even be formalised support like buddy system. Thirdly, it is only appropriate to begin moderation process at the planning stage of assessment development. This encourages more discussions among teaching team to achieve greater shared understanding.

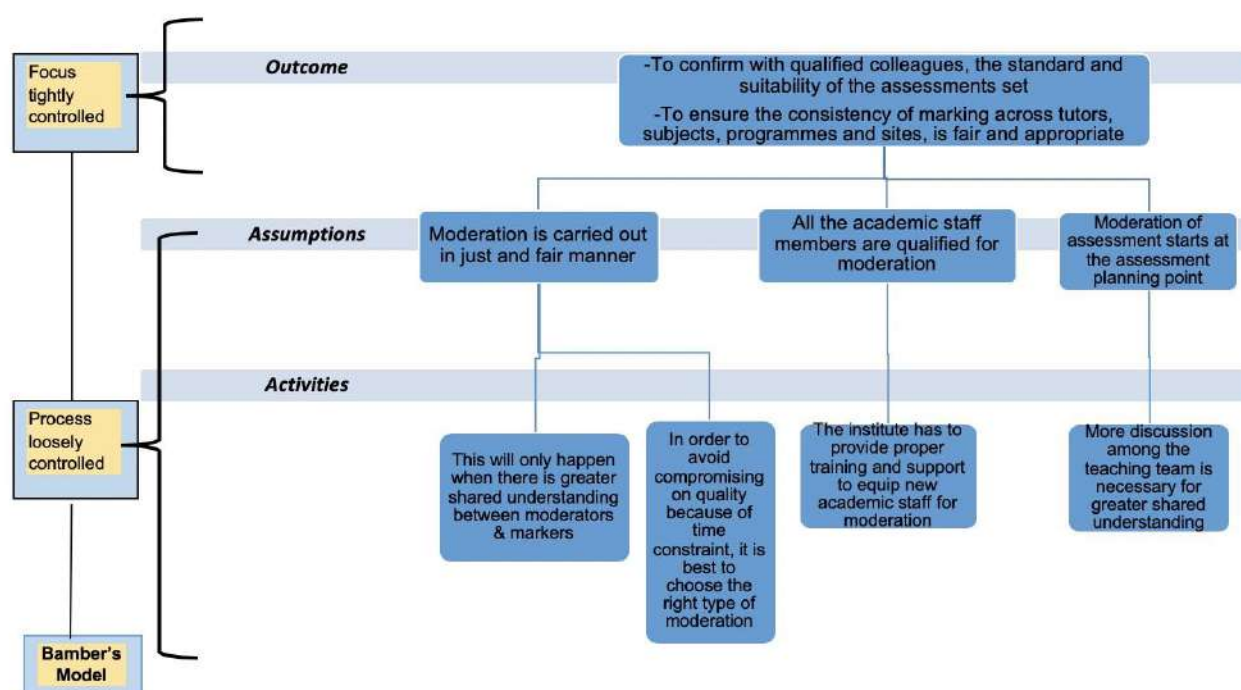


Figure 3: Linking Bamber's Model to the proposed Theory of Change Model

## 5.0 CONCLUSION

This study aimed to assess assessment moderation practice in order to identify and depict assessment moderation practice, elicit views on its effectiveness and assess the extent to which improvements might be sought using ToC. Limitations are acknowledged in that this study was confined to only two departments within one institution, and therefore cannot be representative of the whole system. However, the findings add further weight to the existing body of literature on moderation practices in HE institution by incorporating the voice of new teaching staff members in this evaluation.

One of the focuses of this evaluation is to identify if University A provides the right support especially for the new teaching staff members. It was found that the new academic staff members have to be equipped with proper support either through training or buddy system for greater shared understanding between moderators and examiners. Only then the objective of the moderation can be achieved. The next focus of the evaluation is to understand the assessment moderation process of University A. It was found that the type of assessment moderation has to be re-evaluated by the institution. There is no need to just rely on second marking or double marking as stated in Academic Regulation of University A. Since the

process of this evaluative practice is loosely controlled, the academic staff can be innovative in choosing the appropriate assessment moderation mechanism that suits their environment. The decision could be made based on the number of students in a cohort, the involvement of sessional staff or even by taking into consideration the timeline available. One of the recommendations proposed is to carry out further research in the area of identifying the appropriate assessment moderation method especially if the moderation process involves a large cohort and a tight timeline approach.

This exploratory case study which is evaluated using ToC certainly proves that assessment moderation practice is a complex initiative. Chart 2 is revisited with some new possibilities in achieving the objective of moderation which is shown in Chart 3. According to Connell & Kelm (2000) the benefit of using ToC in an evaluation is the fact that the stakeholders are able to receive meaningful continual feedback from evaluators. In view of this, the findings that emerged from this study can be continuously used for the future improvement of the institution and the academic community.

Referring to Figure 3, the initial ToC model is re-examined with improved activities in order to achieve the initial outcome. By providing a clear and justifiable ToC, it is only beneficial for all the stakeholders because they will be able to understand the change needed. In this case, the Academic Standard Quality department of University A, SUBS and CELS will be informed of the need for such changes for continuous quality improvement.

As a final point, it can be concluded that this evaluation is not an end by itself but rather a beginning to an improved future. Having said this, it is hoped that the changes suggested in this paper will be implemented by the institution and then subsequently the proposed ToC can be explored further for future improvement and intervention. This is because, evaluation should be ongoing and continuous for the purpose of quality enhancement particularly in the area of moderation of assessment in order to maintain the reliability, validity and consistency of assessment grading. *Be not afraid of going slowly, be afraid only of standing still. – Chinese Proverb.*

## REFERENCES

- Annetts, S., Jones, U. and Van Deursen, R. 2013. An innovative review of an undergraduate dissertation double marking policy. *Innovations in Education and Teaching International* 50(3), 308-317. DOI: 10.1080/14703297.2012.760771
- Bamber, V. (2011). *Institutional evaluative practices: quality, enhancement and regulation*. In: *Reconceptualising evaluation in higher education: The practice turn* (pp. 127-132). SRHE and Open University Press: Maidenhead, ISBN 9780335241606
- Beutel, D., Adie, L. & Lloyd, M. (2017). Assessment moderation in an Australian context: Processes, practices, and challenges, *Teaching in Higher Education*, 22(1), 1-14, DOI: 10.1080/13562517.2016.1213232
- Beutel, D., Adie, L. & Lloyd, M. (2017) Assessment moderation in an Australian context: processes, practices, and challenges, *Teaching in Higher Education*, 22(1), 1-4, DOI: 10.1080/13562517.2016.1213232
- Bloxham, S. (2009). Marking and moderation in the UK: False assumptions and wasted resources. *Assessment & Evaluation in Higher Education*, 34(2), 209–220. DOI: 10.1080/02602930801955978
- Bloxham, S. and Boyd, P. (2007). *Developing effective assessment in higher education: A practical guide*. Maidenhead: Open University Press
- Bloxham, S., Hughes, C. & Adie, L. (2016). What's the point of moderation? A discussion of the purposes achieved through contemporary moderation practices. *Assessment & Evaluation in Higher Education*, 41(4), 638-653, DOI: 10.1080/02602938.2015.1039932
- Bloxham, S., Hughes, C. & Adie, L. (2016). What's the point of moderation? A discussion of the purposes achieved through contemporary moderation practices. *Assessment & Evaluation in Higher Education*, 41(4), 638-653, DOI: 10.1080/02602938.2015.1039932
- British Educational Research Association. (2011). *Ethical guidelines for educational research*. London: BERA. Retrieved from <https://www.bera.ac.uk/wp-content/uploads/2014/02/BERA-Ethical-Guidelines-2011.pdf>

- Clark, H., & Anderson, A. A. (Nov, 2004). *Theories of Change and Logic Models: Telling Them Apart*. Paper presented at the annual meeting of the American Evaluation Association, Atlanta, Ga. Retrieved from [http://www.theoryofchange.org/wp-content/uploads/toco\\_library/pdf/TOCs\\_and\\_Logic\\_Models\\_forAEA.pdf](http://www.theoryofchange.org/wp-content/uploads/toco_library/pdf/TOCs_and_Logic_Models_forAEA.pdf)
- Grainger, P., Adie, L. & Weir, K. (2016). Quality assurance of assessment and moderation discourses involving sessional staff. *Assessment & Evaluation in Higher Education*, 41(4), 548-559. DOI: 10.1080/02602938.2015.1030333.
- Holroyd, C. (2000) Are assessors professional? Student assessment and the professionalism of academics, *Active Learning in Higher Education*, 1(1), 28–44. DOI: 10.1177/1469787400001001003
- Mack, L. (2010). The Philosophical Underpinnings of Educational Research. *Polyglossia*, 19, 5 – 11. DOI: 10.5539/elt.v5n9p9
- Malaysian Qualifications Agency. (2013). *Guidelines to good practices: Assessment of students*. Retrieved from <http://www2.mqa.gov.my/QAD/garispenduan/2013/ENGLISH%20GGP%20AS%20061113.pdf>
- Msila, V. & Setlhako, A. (2013) Evaluation of Programs: Reading Carol H. Weiss. *Universal Journal of Educational Research*, 1(4), 323-327, DOI: 10.13189/ujer.2013.010408
- Rust, C., B. O'Donovan, and M. Price. (2005). A social constructivist assessment process model: How the research literature shows us this could be best practice. *Assessment and Evaluation in Higher Education* 30, 231–240. DOI: 10.1080/02602930500063819.
- Sadler, D. R. (2013). Assuring Academic Achievement Standards: From Moderation to Calibration. *Assessment in Education: Principles, Policy & Practice*, 20(1), 5–19. DOI: 10.1080/0969594X.2012.714742
- Sunway University. (2018). *Sunway University Academic Regulation*. Academic Standards & Quality. Retrieved from [https://vine.sunway.edu.my/vinecms/sites/default/files/APQA\\_67P3XJ5SQ7Rw6wVv2/Academic%20Regulations%202017-V3.pdf](https://vine.sunway.edu.my/vinecms/sites/default/files/APQA_67P3XJ5SQ7Rw6wVv2/Academic%20Regulations%202017-V3.pdf)
- Wallace, M., Mahmud, S., Sanderson, G., Yeo, S., Briguglio, C., and Hukam-Singh, P. (2010). “Moderation of Assessment in Transnational Higher Education.” In *Collaborative Approaches to Moderation of Assessment in Transnational Education* edited by Gavin Sanderson, 1-11. Melbourne: RMIT University.
- Watty, K., Freeman, M., Howieson, B., Hancock, P., O'Connell, B., de Lange, P. & Abraham, A. (2014). Social moderation, assessment and assuring standards for accounting graduates. *Assessment & Evaluation in Higher Education*, 39(4), 461-478, DOI: 10.1080/02602938.2013.848336
- Weick, K. (1995). *Sensemaking in Organizations*. Thousand Oaks, CA: Sage.
- Weiss, C. H. (1972). *Evaluation Research: Methods of assessing program effectiveness*. Englewood Cliffs, N.J.: Prentice-Hall.
- Weiss, C.H. (1998). *Evaluation: Methods for studying programs and policies*. (2<sup>nd</sup> ed.). Upper Saddle River, N.J.: Prentice-Hall.
- Yin, R. K. (2018). *Case study research: Design and methods* (6<sup>th</sup> ed.). Thousand Oaks: Sage Publications.

## What Constitutes Effective Learning? An Introduction to *Talaqqi* Framework

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### ABSTRACT

*This article intends to inform people on understanding the process of learning via Talaqqi approach and how Talaqqi framework plays a role in ensuring learning transpired. Certainly, our thinking and approach to effective learning have been influenced by the concept of Talaqqi presented in this article. We listed five pillars in constructing effective learning which in our opinion, produces a significant impact in achieving meaningful learning. The elaboration of each pillar is stated in the article along with eminent contributions which briefly explained. Based on the stated pillars, we believe and drive into a conclusion as what we disclose as effective learning. Ultimately, we highlight the issue of modern education which seems to overlook on the fundamental rule of teaching due to technological advancement in education, often resulting in the haphazard of the educational milieu and oversee the primal purpose of education. The Talaqqi framework will bring back the purpose of education and inform the fundamental approach in the teaching arena although the teaching and learning have been rapidly customized to different methods, for instance online and distance learning.*

**KEYWORDS:** Talaqqi, Effective Learning, Scholarship of Teaching and Learning (SOTL)

### 1.0 INTRODUCTION

The process of learning has been developing for more than centuries and unquestionably, the evolving of technology has relatively immersed in academia. Recently, modern pedagogical and andragogical methods have shaped our understanding that the more we use technology in class, the better the students learned. Teachers experiment with abounds of teaching approaches and at the same time, new techniques are created although some are underutilized (Dunlosky, Rawson, Marsh, Nathan, & Willingham, 2013). We have witnessed a one-man show, a single teacher with his own body and mind, stands in front of hundreds of students and able to make every single of the student to remain focus and concentrate during instruction. This scenario is rarely happening in today's traditional classroom environment. It is deteriorating to note that students prefer more of technological-embed approaches in teaching and learning rather having a teacher in the classroom, for example, the application of virtual classroom. With this in mind, how do they immerse with authentic learning? Who monitors them? And, to what extent meaningful learning occurs?

Teachers' priority is to transmit learning with all possible knowledge. A continuum process of learning is vital as it accumulates students existing and fresh knowledge (Hativa, 2001). The whole teaching and learning experiences become the premise of achieving meaningful learning. A concept of learning

drives learners to instigate reflection from prior experience and evaluate the present knowledge, which then generates predictable action and formulate new knowledge (Abbott, 1994). Every student brings values and experiences as a result of how they are being nurtured, therefore, every student possesses their learning preferences and ways of understanding things. It is more complicated when students suffer from monotonous pedagogical approaches by inactive teachers and produce possible drawbacks for students when entering higher educational institutions due to lack of understanding certain concepts or fundamental of learning contents.

Above all, the great paradoxes of Islamic perspectives on education are to grow potential learners to become believers and devotees to the Almighty God, to be noble, healthy, knowledgeable, capable, creative, independent, and to be a democratic and responsible citizen (Susianti, 2017). Portraying from the national philosophy of education construe diverse aspects of educational objective.

"[e]ducation in Malaysia is an on-going effort towards further developing the potential of individuals in a holistic and integrated manner, to produce individuals who are intellectually, spiritually, emotionally and physically balanced and harmonic, based on a firm belief in and devotion to God. Such an effort is designed to produce Malaysian citizens who are knowledgeable and competent, who possess high moral standards and who are responsible and capable of achieving a high level of personal well-being as well as being able to contribute to the harmony and betterment of the family, the society and the nation at large." (Ministry of Education Malaysia, n.d.)

The aspects of the educational objective are hopeful to nurture comprehensive and holistic students. Therefore, the perspective of the education compounds by elements stated in the national philosophy of education and portray as a wake-up call to implement value-based education which sparks many interests among educational stakeholders to uncover the composition of the effective learning ecosystem.

## 2.0 THE TALAQQI FRAMEWORK

Figure 1 illustrates the process of Talaqqi in optimizing the meaningful learning experience. We propose this framework as a theoretical proposition to constitute effective learning. The Talaqqi method has been much influenced by Islamic studies based upon historical events of the Prophet Muhammad (peace be upon him) when he received the first verse of the Al-Quran. The *Talaqqi* approach was first introduced via face-to-face interaction with Jibril (the angel who was directed by Allah is also known as one of the greatest angels, informs people about the commands and prohibitions of God; gives news, communicator of revelation). Jibril first taught the Prophet Muhammad (peace be upon him) to recite the first Quran verse, Al-Alaq. The first verse of Al-Alaq speaks about the importance of reading and the first word (*Kalimah*) in that particular verse is *Iqra'* which means read.

In the biography of the Prophet Muhammad (peace be upon him), stated that the Jibril appeared to Muhammad one night when he was sleeping in a cave on a mountain called *Hira'* in Mecca, where he used to go for a spiritual retreat for a month every year. When Jibril first encountered Prophet Muhammad, his condition was covered with anxious and scare to that extent he was shivering. Carrying a book, Jibril commanded him to "read." Prophet Muhammad (peace be upon him) refused the order twice before finally asking about what he was supposed to read. Jibril replied with following verses of the Qur'an:

*Read [O Muhammad!] in the name of your Lord who created. (96.1) He created man from a clot. (96.2) Read, and your Lord is the Most Honorable (96.3) who taught with the pen. (96.4)*

The entire process depicts the role of Jibril as the comforter, the soft touch, and at the same time, an austere teacher. The adoption of this method is widely applied in *Pondok* (a form of Islamic religious school) (Rahim, Idha, Yakob, Mansor, Khurshiah, & Mohamad, 2016). The *Pondok* school system highly emphasize on qur'anic memorization and learn Islamic laws and practices via Talaqqi method. Muhammad (2011) defined Talaqqi as a method of studying religious knowledge via face-to-face with teachers who are competent in Science, *Tsiqah*, *Dhabit* and possess the knowledge of *Muttashil* innate from the Prophet Muhammad (peace be upon him). Those teachers are specialized in Islamic knowledge and regarded "*Aalimin*" (pious) and "*Aarifin*" (knowledgeable).

Likewise, the Islamic scholars incontrovertibly describe Talaqqi method corroborate as a one-on-one teaching approach. For example, the definition of Talaqqi is consistent with the study by Susianti (2017) who describes Talaqqi as a method performed by having the teacher present the Qur'anic reading to the student face-to-face in a quiet and comfortable sitting position, and then the teacher guides the student to repeat the verse read until the student is fully memorized.

The pedagogy studies designed myriad type of teaching approaches which could eventuate effective learning. Victoroff and Hogan (2006) identified three characteristics to describe effective learning experience: (a) instructor characteristics (personal qualities, “checking-in” with students, and an interactive style), (b) characteristics of the learning process (focus on the “big picture,” modelling and demonstrations, opportunities to apply new knowledge, high-quality feedback, focus, specificity and relevance, and peer interactions), and (c) learning environment (culture of the learning environment, technology).

The growth of the holistic learning environment produces from students who are invited to maneuver the pedagogical context that is highly weights on interaction. For allowing and encouraging student interaction, the Talaqqi method paid integral element on human interaction. A silent feature of effective learning falls on interaction. The interaction in this context refers to the relationship of teacher, student, knowledge (*ilm*), meeting (*laqiyyah*), and process of assessment and evaluation (see figure 1).

As imposing of the knowledge continues, the student's rapport with the teacher cultivates. Portraying on the premise that the interaction is positively flourished, it is a high time to evaluate the whole teaching and learning process. Conole, Dyke, Oliver, and Seale (2004) suggested ten outcomes from the effective learning environment: (a) more connected knowledge occurs, (b) wider range of strategies, (c) greater complexity of understanding, (d) enhanced action appropriate to goals and context, (e) increased engagement and self-direction, (f) more reflective approach, (g) more positive emotions and affiliation to learning, (h) more developed vision of future self as a learner, (i) greater facility in learning with others, and (j) more sense of participation in a knowledge community. The wide range of educational outcomes for impactful learning environment covers myriad opportunities for students to engage in learning indirectly prosper positive traits and life-long learning prospects. The academic knowledge remains in students self-consciousness, apply and permeated in their daily life as the whole process determine the application of knowledge.

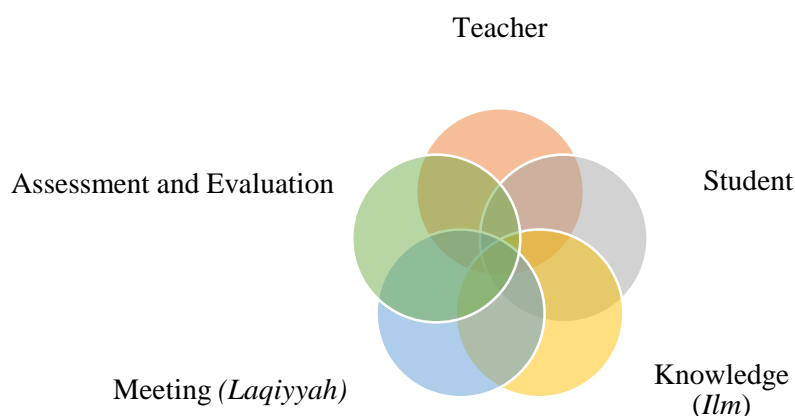


Figure 1. Talaqqi Framework

Talaqqi highlights interaction that thrives holistic learning environment. The further discussion leads to the elaboration of each pillar in Talaqqi framework to ensure meaningful learning experience occurs. The construction of this framework is based on the fundamental of teaching and learning ecosystem where the interactivity of each element importunes students for engagement in an all-out-efforts to effective learning and eventually able to cater myriad characteristics of students that includes low-performance students.

## 2.1 The Functional Teacher

The need for an effective learning environment is important to all students especially those who are being left out from the instruction process. As an experienced teacher, he or she would require to observe the situation and assist students with special needs with his or her best efforts to fulfill responsibility and walk-on their role. The effective teacher will be more likely inspire effective learning to happen. Taat (2012) paid attention to teacher's role to build students characters as well as performing duties as a holistic teacher at school. This condition portrays how big an impact the teacher would make for students. A teacher is an influential individual at school who prosper the teaching and learning ecosystem. They also play a central role in forming a positive school atmosphere. Also, for allowing the effective teaching and learning process, a holistic teacher in this context comprises the characteristic of *murabbi* (educator), *murshid* (the guider), *muaddib* (teachers of good manners), *muallim* (giver of knowledge), and *mudarris* (teacher) (Taata, 2012). Following by the aforementioned elements as holistic teachers, it is described that the salient features of the holistic teachers cover the whole aspect of being 'a good teacher' and gives an excellent treatment to cater the myriad type of students.

Similarly, teachers role is to educate, to become a good mentor, to portray good *akhlaq* (behavior), and respond to the decisions they make for the betterment of the student. They also pay consummate attention to the teaching and learning preparation as well as fulfilling students' needs. With abundant responsibilities burden by the teacher, they also must perpetuate the highest degree of readiness and sincerity towards teaching profession. Besides, teachers are also demanding to take charge on students disciplinary issues including truancy, behavioral problems that lead to student misconduct, and juvenile crime that is merely subterfuge teachers to keep the school as a safe place. The teacher regards their role as the most important person at school. Teachers are also requested to work collaboratively and strategically, reflected upon their teaching practices, and expedite ideas (Guskey, 2002). The excellence teachers who educate their students although understood as one of the most challenging careers, they have devoted their job as noble and impeccable. When teachers discern the importance of education the future grassroots of the nation, hence leading to excellence in the academic and moral development of students.

Talaqqi regards the role of the teacher as to teach students from one page to another page of a book and accommodate every concern raised by students as well as explaining in details to inquiries because the teacher is the subject-matter expert. The Talaqqi concept as practiced in the *Pondok* school system (Qur'anic memorization school) is highly emphasizing on memorization of the lesson. The educational practice at the *Pondok* starts with syllabus coverage. The teacher perceives autonomy in determining the schedule of learning, subjects to be learned, books that will be used and methods of delivery (Rahim et al, 2016).

It is interesting to note that by having many years of experience does not guarantee the teacher is expert in teaching. The experience is useful only when the teacher continually engages in self-reflection and modifies classroom techniques to better serve the needs of students. Educators need time to deepen their understanding, analyze students' work, and develop new approaches to instruction (Guskey, 2003). Teachers must prepare to teach wide range of students' interests, motivation, and ability, some of whom may need additional assistance. Effective teachers assess needs, abilities, and preparedness on a class-by-class basis and respond to these needs accordingly. Effective teachers according to Adams and Pierce (1999) able to: (a) adjust their lessons based upon the needs and abilities of their students, (b) keep abreast of developments in their field or discipline and incorporate these ideas into their lessons, (c) organize the material in such a way as to best facilitate learning, (d) use effective communication skills, (e) formulate specific goals and objectives and then select the best methods for meeting those objectives, (f) share the course objectives with the students to clarify expectations for the students and open communication, (g) work to build rapport with their students, (h) establish a productive learning atmosphere, and (i) use effective communication skills. These characteristics, inadvertently, allow teacher prosper effective learning ecosystem and ensure the transmission of knowledge occurs at any level of educational mainstream.

## 2.2 The Passionate Student

Those who understand the spread of wisdom as a positive force out to usurp the proper function of knowledge recipients have corroborated with student's active participation in the state of learning. Talaqqi method implores student's engagement and active participation which sequentially help to optimize the overall learning experience. Because student's characteristic is varied in terms of their existing state, prior



competence, gained experience, and belief system over the learning process (Watkins, Lodge, Whalley, Wagner, & Carnell, 2002), understanding them intrinsically is an integral process in ensuring effective learning becomes evident. When teachers transmit new knowledge, students may reflect upon their sense of competence and influence by their belief system so that the importance of that particular knowledge can be comprehended.

The prosperous effective learning demand effective learner. Enthusiastic and active learner take full responsibility for their learning process although the teacher has provided their best approach. The definition of effective learning suggests that learner must active and strategically promulgate their learning process and openly involve in dialogue or discourse (Watkins et al, 2002). As tangible evidence of effective learning, students are encouraged to exercise cooperative skill and able to develop a specific goal and plan in fabricating their learning. In Talaqqi, teachers are responsible to interact and facilitate the learning process by monitoring the learning process and be versatile if the students take part in shaping their learning ecosystem.

The premise of Talaqqi method is to ensure that the student feels motivated at school and enjoy the whole process of learning. School with positive milieu will ensure the success of the student synchronizes with the school mission and vision. Far from being involved in clandestine and harmful activities that include immoral and disciplinary issues, students will pursue education with comfort and success.

The curriculum at school determines to encourage students to participate in school-related activities. Therefore, students are advised to get involved in co-curricular activities (i.e., clubs, associations, sport, and games) to spark students feel of belongingness for school. Teacher summons to re-create the school identity to fit students' interest, therefore, students feel secure and enjoy being at school. Students, conversely, must strive to uphold their school dignity and actively involved in learning. To elicit effective learning, Talaqqi requires students to fully engage with the teaching and learning process and pay close attention when teachers deliver instruction. This process includes completing school assignment and accomplishing other school tasks. Also, students must fulfill their responsibility as learners because the teacher always knows what best for them.

Just as some teacher can predict the performance of their students; based on their observation and academic performance, the teacher should not lose hope in developing and optimizing students' talents. Talaqqi method drives Islamic perspectives on education where the imposing of religion in constructing effective learning is essential. With a strong religious background, students come with responsibility towards their learning. As to practice what is required in the religion to which it belongs, for example, Muslim students do not leave the five-hour prayer will help them to avoid any negative provocation. The rejuvenating practice intrinsic values, the tinge of learnings, the promotion of calamity which besieged students from engaging in teaching and learning environment would desist. This scenario is driven force from the regularity of religious practice that hinders wrongdoings and sustains in creating and the development of holistic students.

After being taught by teachers, students should lead to practice and contribute to the sustainable development of one nation. Just as other developed nations, the responsibility of students inevitably important. Not only just to importune for the country advancement and economic growth, but also the development of human capital in terms of attitudes and moral values as well as preserving unity and harmony. Notably, the student's role beyond pertinent facts as to success individually implores possibility of community development subsequently form the country in positive future. The Talaqqi method ultimately flourish by combining academic knowledge and values for human development.

### 2.3 Knowledge (*Ilm*) Creation

As technology is rapidly stirred especially in the educational field with the application of online learning (i.e. massive open online learning system, learning management system, learning Apps), the fundamental function of a book (*Kitab*) as the main source should not be neglected. In Talaqqi approach, *Kitab* is utilized as the primary resources for reference and knowledge creation. *Kitab* derived from an Arabic word which means book. Islamic scholars defined *Kitab* as a collection of God's revelations which was revealed to His apostles on the sheets and bound into a book-form. The book as referred to the above description is the book of Psalms, the Torah, the Gospel, and the Qur'an.

Books or *Kitab*, the great resource of knowledge where it opens to a window to the world. Simply said, by readings and gaining knowledge, the perspective of the world and ways to understanding people and views of something become broader. Reading a book brings us to dive into another world, a world that

is the mind of the others. Because people had their worldviews, therefore, by reasoning people will be able to explore other people works which ultimately give us wisdom in facing life. The imminent information and piece of knowledge gain from books will develop wisdom to our belief system. For example, when we read a book about a business, it drives us to understand the authors' viewpoints about businesses. Therefore we add insights on business matter per se. Another great example is when we read a book about gardening then we will know the correct method of planting a tree based on the experienced and wisdom of the authors. Likewise, as we continue reading books which speak other subject matters, we will have a greater understanding of something that sparks our interests and creates the wisdom of something that new to us.

For the most part, Talaqqi promotes the careful attention of the use of the book. Student surmises how the book is not just a tool to engage in learning rather integral resources for projecting inquiry which will help them to get supplementary knowledge outside the classroom context. In contrast, quite a significant number of teachers disregard the use of the textbook because they claim the information in the resources is outdated and insufficiently support the topic or subject matter. Many teachers heavily relied on online sources to gather information. Worry permeated among students and parents about the reliability of certain textbooks which can be frugal. Therefore a quality textbook that undergone knowledge validation, written and reviewed with precocious and careful is vital.

The textbook on whatever subject-matter is only useful when the student utilizes it. The concept of practicing knowledge can only be meaningful if the reader applies knowledge. The best example could be derived from the Al-Quran when the concept of *a'mal* (practice) as instructed by Allah to do good deeds when it imposes not only to Muslim but also to other religious groups. Notably, the use of a textbook will consider factors for example: (a) textbook is not only used as a prime resource, there are other reading references that could enlighten the learning content, (b) be confident to reconfirm and filter the knowledge in the textbook, do not get bounded with the information in the textbook, (c) supplement the content in the textbook with other resources (i.e. newspaper, magazine, article in journals), and (d) the supplementary materials in form of attendance of conferences at any levels and word-of-mouth shared information, knowledge sharing with experienced educators will enhance the knowledge of readers.

## 2.4 Meeting (*Laqiyyah*)

The salient approach in Talaqqi is to make sure the teacher and student relationship is prolonged and maintained. It is difficult to maintain the interaction of the students if it is missing in the connectivity. The student who begs for advice and education implores teacher for assistance with the educational journey may very well plead interminably for success. Based on this interaction, the role of the teacher is to ensure that they were connected with students not only undertaking their physical needs but also spiritual and care to them. Occasionally, in the modern world, where both parents are full-time employed, it may be necessary for teachers to partaking the role in developing the student. In some cases, students spend time much longer at school compared to home. As teachers become the main individual that students can connect and share everything with, they have been called upon the necessity to fill the loopholes by indirectly nurturing the students to become a functional individual.

Interaction is a process and form of communication between one person to another. In the context of education, the interaction involves teacher-student communication and very much related to conveying knowledge transmission. In ensuring the interaction is successful, the preparation of social environment especially classroom management is important. The physical organization of a classroom encourages the communication and interaction process with students. Notably, the ideal concept of the classroom is where a formal teaching and learning processes take place and the teacher takes a central role to teach students. Marland (1975) described that the classroom is the physical environment which can be a "friend" or "enemy of teaching" espoused concern in many settings of teaching and learning environment.

Pretty much concern on the feedback of effective classroom management as it supposed to rectify the usefulness where the interaction and being connected within the learning milieu. There is an ominous effect if the classroom fails to develop positive interaction and the student feels disconnected in class. The process of Talaqqi implores on the connectivity of teacher-student relationship as thus will determine effective learning occurs. Often, the teacher utilizes classroom a place to fulfill the learning objectives and employing teaching and learning strategy. Talaqqi process requires more than only teaching and learning. It consists of interactivity of teacher-students positive bond relationship and prospers rapporteur. This inclusivity is not only focusing on the academic-based matter but also more of elucidating personal issue that hinders student to progress.

The interaction and being connected in the instructional process is a premise to empower a holistic learning approach. Additionally, the characteristic of interactivity between teacher and student should exercise: (a) active teaching and learning activities, (b) maintaining teacher-student relationship via effective communication practices in the classroom (c) encourage students to get involved in the teaching and learning process by for their opinions, and (d) cooperative and collaborative learning. Identically, the process of interacting students must ensure the active involvement of teacher and student. Likewise, effective communication between teacher and student will guarantee the active participation of students in the teaching and learning process. Indeed, by having a conducive environment in facilitating the teaching and learning process will enlighten the interaction and connectivity of students with the learning environment. Ultimately, the teacher and student would be able to create prosperous teaching and learning ecosystem.

## **2.5 Assessment and Evaluation via Question and Answer (Q&A)**

One of the great paradoxes of Talaqqi approach is the dynamicity of the classroom. Although the classroom environment is unpredictable and complex, interaction plays a salient role in prospering the teaching and learning ecosystem. Interaction of student seems to be the basis of student engagement and inevitably, the knowledge creation can take place in such an environment. To compound with effective learning, the myriad technique has been introduced to teaching and learning. Often student rely on certain technique that favor them the most which normally examine them successfully for example elaborative interrogation, self-explanation, summarization, highlighting (or underlining), the keyword mnemonic, imagery use for text learning, rereading, practice testing, distributed practice, and interleaved practice (Dunlosky, Rawson, Marsh, Nathan, & Willingham, 2013).

Questions can be used to see students' ability to understand a block of information, to shift students' attention from one fact to another, to emphasize the importance of content by emphasizing it, to direct students to the right direction and so on (Darling-Hammond, Flook, Cook-Harvey, Barron, & Osher, 2019). However, its most important use is to digest thought. This is because questions are asked to analyze, synthesize and evaluate skills and provide training for students to communicate. To ensure effective teaching and learning in the classroom, teachers must provide questions that will stimulate creative thinking among students. The following are features of questioning techniques derived from (Chin & Osborne, 2008), that can be utilized in enabling the success of this technique in teaching and learning activities: (a) questions to ask should be planned, (b) the questions should suit the student's level of ability, (c) the question level should not be too easy or too difficult, (d) the word or term you want to use should be understood by the student, (e) give students the opportunity to think of answers, (f) ask questions to the entire class and avoid asking questions to specific students only, (g) ask questions first before deciding the name of the student, (h) question forms should be varied to attract students, (i) make sure the questions are clearly heard by students throughout the class, (j) the questions created should be able to encourage students to think, (k) avoid questions that have answers in them, and (l) the questions should be concise and clear.

## **3.0 CONCLUSION**

The idyllic process of teaching and learning must be co-constructed based on the consensus of the deliverer and the recipient of the whole learning process including the rapport and positive interactivity. Earlier, the five pillars: (a) the functional teacher, (b) the passionate student, (c) knowledge creation, (d) meeting, and (e) the process assessment and evaluation as mentioned in this paper suggested a fundamental framework for effective learning. The rudimentary aspect of learning towards the interrelation of each pillar prosper effective learning. Instead, views on the effectiveness of learning can be quite extensive from myriad contexts (culture, subject-matter, pedagogical and andragogical approach), it safe to conclude that the Talaqqi framework brings back to the purpose of education in achieving effective learning. The predominant factors often being deluded because many educators are focusing too much on the technology-based application, performance-based evaluation, and sequentially forgetting the fundamental approach in teaching. While the root of teaching is to enrich the human being and optimize their talents and prosper moralities and personalities, it is, therefore, understanding the basic sanctity of teaching and learning environment is important. Future research on how cultural, technological, and psychological could blend in modern Talaqqi approach and eventually prosper better learning ecosystem is recommended to explore. The constitution of effective learning can experiment with different classroom context, for example,

students with different level (demographic background, existing knowledge, theoretical and practical based learning content) promote to imminent findings for future study.

## ACKNOWLEDGMENT

We thank the Malaysian, Ministry of Education for grant funding under the project Malaysia Research University Network (MRUN) title Enhancing Education For Human Capital Development Through Establishing Future Learning Ecosystem (MRUN Grant #5539210).

## REFERENCES

- Abbott J (1994), *Learning makes sense: Re-creating education for a changing future*, Letchworth: Education 2000.
- Adams, C. M., & Pierce, R. (1999). Characteristics of effective teaching. *Language Teaching*, 102, 107.
- Chin, C., & Osborne, J. (2008). Students' questions: a potential resource for teaching and learning science. *Studies in science education*, 44(1), 1-39.
- Conole, G., Dyke, M., Oliver, M., & Seale, J. (2004). Mapping pedagogy and tools for effective learning design. *Computers & Education*, 43(1-2), 17-33.
- Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2019). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, 1-44.
- Dewey, J. (1966). *Democracy and education: An introduction to the philosophy of Education* (Text-book series in education). New York: Free Press.
- Dunlosky, J., Rawson, K. A., Marsh, E. J., Nathan, M. J., & Willingham, D. T. (2013). Improving students' learning with effective learning techniques: Promising directions from cognitive and educational psychology. *Psychological Science in the Public Interest*, 14(1), 4-58.
- Freire, P. (1972). *Pedagogy of the Oppressed*. 1968. Trans. Myra Bergman Ramos. New York: Herder.
- Guskey, T. R. (2003). What makes professional development effective?. *Phi delta kappan*, 84 (10), 748-750.
- Hativa, N. (2001). *Teaching for effective learning in higher education*. Springer Science & Business Media.
- Marland, M. (1975). *The craft of the classroom: a survival guide to classroom management in the secondary school*. Heinemann Educational Publishers.
- Ministry of Education Malaysia (n.d.). National Education Philosophy. Retrieved from <https://www.moe.gov.my/index.php/en/dasarmenu/falsafah-pendidikan-kebangsaan>
- Muhammad, J. (2011). Pentingnya belajar ilmu agama secara Talaqqi. Retrieved from <https://jundumuhammad.wordpress.com/2011/04/30pentingyna-belajar-ilmu-agama-secara-talaqqi/>
- Olson, D. R., & Bruner, J. S. (1996). Folk psychology and folk pedagogy. *The handbook of education and human development*, 9-27.
- Rahim, A., Idha, S., Yakob, M. A., Mansor, M., Khurshiah, S., & Mohamad, R. (2016). Talaqqi Method in Teaching and Learning Islamic Education at Pondok Institutions.
- Robinson, R. (1942). Plato's earlier dialectic.
- Susianti, C. (2017). Efektivitas Metode Talaqqi dalam Meningkatkan Kemampuan Menghafal Al-Qur'an Anak Usia Dini. *Tunas Siliwangi: Jurnal Program Studi Pendidikan Guru PAUD STKIP Siliwangi Bandung*, 2(1), 1-19.
- Taat, M.S. (2012). Pengajaran dan penyampaian berkesan. *Minda pendidik* 1(4).
- Victoroff, K. Z., & Hogan, S. (2006). Students' perceptions of effective learning experiences in dental school: a qualitative study using a critical incident technique. *Journal of Dental Education*, 70(2), 124-132.
- Watkins, C., Lodge, C., Whalley, C., Wagner, P., & Carnell, E. (2002). Effective learning.

# **CURRICULUM & INSTRUCTION**

## Analysis of the Love of the Country Character Education in Indonesia and Australia

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### ABSTRACT

*Love the country is a very fundamental part of a country. Therefore, every country needs to maintain and increase the love of the homeland of its citizens to safeguard the ongoing state. Various experts state that the love of the country/nationalism is an important part of the life of the nation and the State. Furthermore, it was also revealed that at this time the attitude of love for the country in Indonesia had declined or faded. Therefore, it was necessary to find a solution to strengthen this character for guaranteed Indonesia country. This study aims to reveal the similarities and differences in the character curriculum of love country in Indonesia and Australia so that it can be an inspiration in developing a program to strengthen the love of the country character. As one of the best countries in building the love of the country in the world, the education system in Australia is very interesting to be analyzed and used as a reference in developing this character for developing countries like Indonesia. The design of this study generally used qualitative research with a grounded theory with descriptive type. The results of the study showed that there are 3 similarities and 6 differences in the implementation of a character education curriculum in Indonesia and Australia. The equation in terms of (1) planting concepts, the two countries together prioritize mutual respect and respect for differences; (2) commemoration of holidays, both countries have similarities in the application of learning by teachers, where the teacher gives the task of making certain works; (3) the implementation love of country, together students are invited to apply the love of the homeland in schools and around it. The difference lies in: (1) the main dimension, in Australia there are 3 dimensions, in Indonesia there are 5 main values of PPK; (2) organizing in schools, in Australia, love the country was enter in social science subjects, while in Indonesia were enter intracurricular, kokurikuler, and extracurricular activities; (3) the period of time, basic education in Australia is carried out in 7 levels, while in Indonesia there are 6 levels; (4) curriculum approach in schools, Australia is carried out with special subjects, namely social science consisting of history, geography and citizenship, in Indonesia the main focus on the subject of Pancasila education and citizenship; (5) the learning scheme of love the country, in Australia there are 4 main stages, in Indonesia it does not yet have a specific nature, it optimizes the "tripusat" function of education; (6) Evaluation, in Australia, are asked to make simple and clear conclusions. In Indonesia, the education office conducts regular monitoring and evaluation at least 1 (one) time in 1 (one) year on the Implementation in the Formal Education Unit. The results of this study can be followed up by constructing character education programs in various countries.*

**KEYWORDS:** Love Country, Nationalism, Education, PPK, Character

### 1.0 INTRODUCTION

Indonesia as part of the world is one of the countries in the developing category. Even though Indonesia has been independent for 75 years, we are still fighting to become a developed country. The existence of globalization and industry era 4.0 at this time in all countries makes Indonesia also must be able to adapt. One of them is the adaptation of the quality of human resources needed in the current era. To achieve this, one of the main efforts can be done in the field of education. In the long-term development plan (RPJP) of Indonesia in 2020-2025, it can be seen that one of the priorities of the program is to create

a society that is noble, moral, ethical, cultured and civilized based on the Pancasila philosophy. The main objective is to bring Indonesia into a developed country and still maintain Indonesia's independence or the continuity of the State.

To maintain the existence of a country, the character of loving the country is very much needed. Because, as is well known that the love of the country can bring someone to make various efforts for his country. Thus they will have high loyalty and are willing to sacrifice for the interests of the nation and their country, this is in line with what was conveyed by Astuti (2014) which states that the love of the country/nationalism is an important part of the life of the nation and the State. It was further explained that the attitude of loving the country in the nation's children declined. This is also supported by the definition of patriotism by the Ministry of National Education which states that patriotism is a way of thinking, behaving, and acting that shows loyalty, care, and high respect for language, the physical environment, social, cultural, economic, and political. nation (Samani and Hariyanto, 2012: 54).

Love of the country is supposed to be owned by all citizens, including Indonesian citizens for the Indonesian State. However, this does not always happen. Based on the results of research conducted by Muchtar (2015), it can be seen that the love of the homeland of Indonesian citizens is still in a sufficient category. The research was based on the results of a study on the understanding of students about the character of the love of the homeland is still in the quite good category with the acquisition of 76.19%. This indicates that the love of their homeland is not too strong. Budimansyah's research results (2010) also stated that globalization challenges the power of applying elements of national identity. Based on these results it can be seen that the sense of love for the next generation of homeland still needs to be developed

As a country, of course, it is necessary to develop the quality of love of the citizens' homeland. Each country also has its pattern to develop the nationalism of its citizens. Some countries have the highest average homeland love value. Countries included in the top 5 of the highest are (1) Australia, (2) Canada, (3) Finland, (4) Austria, (5) Singapore (Suzuki, 2009). Research related to the curriculum in force in Australia shows that Australia has strong identities and values and will continue to have political significance and can exist together with emerging global identities and values (Walsh, 2008). Based on this, it is certainly very interesting if the curriculum can be explored further to improve the quality of the Indonesian people's homeland.

Australia's curriculum studies are always conducted openly. From 1999 to 2019, research studies relating to the education curriculum in Australia can be stated that Australia continues to develop, monitor and evaluate the curriculum that applies in the country. An ongoing Australian monitoring and evaluation curriculum was also obtained from research conducted on a national initiation project in drug education (NIDE) in 1999. The results showed that overall, people in all jurisdictions, at all levels of involvement in drug education, considered NIDE as a profitable project. In general, NIDE has contributed greatly to the evolution of school drug education in Australia (Richard Midford, 1999). Another research result is the impact of students coming from China for the internationalization of the curriculum in Australia. The results show that the presence of Chinese learners encourages to internationalize the existing curriculum but this process can reduce academic standards if the economic priorities of the Corporate University are permitted to not neglect the ethics of education (Sue McGowan, 2008). Studies on improving the curriculum can also be seen in the waste management sector in Australia. This study presents how Australia will adopt the UK system for education and training in the waste management sector and discusses how Australia identifies curricula with this and which pedagogical approaches are most suitable for developing the skills of effective waste management practitioners in the industry. and for those who have graduated from college (G.Davis, 2008).

A good curriculum in Australia is also supported by the quality of qualified teachers. This can be seen from the identification and evaluation of teacher knowledge about child abuse and neglect. The results were obtained that the teacher was very innovative in teaching about child abuse and neglect. They can use the knowledge they have and adapt it from knowledge obtained from various personal and professional sources to suit their specific challenges and situations. Although this approach is competent and innovative, it also has shortcomings in knowledge. The implications of this research serve as a foundation for curriculum development to build the professional reputation of teachers to deal well with cases of child abuse and neglect (Farrell, 2008). Landscape surveys or views over a 5-year period, an examination of how teachers and the teaching of shared history in Australia, built in Australian academic literature states that based on this review, it is increasingly difficult for ideas about non-native perspectives as dominant and teachers as active but non-critical participants in the process (Weuffen, 2019). Based on the above study, it

can be concluded that Australia as a developed country so far has been paying attention to its educational curriculum including the handling of the character of its citizens. Therefore, the education curriculum in Australia is very possible to be adapted for developing countries to improve the quality of their citizens.

The curriculum in Indonesia is also constantly changing. This can be examined from the range since Indonesia's independence in 1945, Indonesia has experienced ten changes to the curriculum. (1) The Indonesian education curriculum was formed and has begun to be implemented as the 1947 curriculum; (2) 1953 curriculum; (3) 1964 curriculum; (4) The 1968 curriculum; (5) 1975 curriculum; (6) 1984 curriculum; (7) 1994 curriculum; (8) 2004 competency-based curriculum; (9) 2006 education unit level curriculum; and (10) the 2013 curriculum (Lestary, 2015).

The results of a study on curriculum changes from a material curriculum to a competency-based curriculum have also been carried out. The results of the research study can be concluded that the 2013 curriculum change policy is based on internal and external challenges faced by the Indonesian people to prepare a productive, creative, innovative and effective generation. This curriculum was formed to improve the shortcomings of the previous curriculum. This curriculum was developed to strengthen three aspects, namely cognitive, affective and psychomotor. These changes also bring changes in the learning system, especially in terms of learning models in the form of thematic-integrative, scientific approaches, active student strategies, and authentic assessment (Machali, 2014).

Curriculum research and the love of the country have been carried out by several people. However, there are differences between this research and previous research. The difference is in the context of (1) the field of curriculum, namely the field of basic education (2) the origin of the curriculum, namely Australia and Indonesia; (3) the characters studied are the love of the country. The results of this study are expected to be useful for policymakers related to the education curriculum because it provides a more detailed picture of the basic education curriculum in the two countries. Thus it can be input for the organizers of basic education to create programs to increase the love of the citizens' homeland.

## **2.0 METHOD**

This study uses a qualitative research type with a grounded theory type with a qualitative descriptive type. In this study, the researcher acts as the main instrument that takes, analyzes and concludes research results. Data collection techniques using documentation techniques. Analysis of the data used ranging from data reduction, data display, and data verification (Sugiyono, 2011). The main activity undertaken is to study the basic education curriculum used by the State of Australia. This curriculum study is carried out using documentation instruments. The next activity is in the form of data analysis and analysis of curriculum data in Indonesia regarding the development of a love for the country. Various data generated will be reduced and then grouped according to the focus of the study categorically. Furthermore, the interpretation is based on categorized data. The interpretation in question is giving meaning to the various symptoms described interpreted based on the perspective of the object and the perspective of the researcher.

The analysis data was help with nvivo program. This program help to more describe about the research, especially for the difference curriculum beside Australia and Indonesia. This program was help to make code and then the percentage about the curriculum in the curriculum document. So that we can get the describe more complete.

## **3.0 RESULTS**

### **3.1 The cultivation love of the country in Australia's basic education curriculum**

The basic education curriculum in Australia is divided into 3 main dimensions: subjects (learning areas), general capabilities and cross-curriculum priorities.



Table 1. Dimensions of the Australian Curriculum

3 Dimensions of the Australian Curriculum		
Learning Areas	General Capabilities	Cross-Curriculum Priorities
Social Sciences (History, Geography, Citizenship) Economics and Business Art (Drama, Media, Music and Visual) English Mathematics Science (Natural Sciences) Information and communication technology physical education	Literacy Numeracy ICT Critical and Creative Thinking Personal and Social Capacity Ethics Introduction to Intercultural Understanding	Aboriginal Australian and Asian relations Sustainability

Source: ACARA (2019)

In the Australian curriculum, nationalism lessons are studied specifically in social science which includes history, geography, and citizenship). But besides that nationalism is learned through intercultural introduction lessons and the introduction of aboriginal culture (indigenous to Australia).

The sense of nationalism and patriotism in Australia through the curriculum was developed through 4 stages. The first stage is the existence of traditions and values that shape society. The second stage is how the dynamics of the community and economic development. The third stage is how the community, ideas, places can be accepted as an integral part and then connected or connected. The final stage is how the community learns to be responsible and participate in the community to create an agreement.

The values of patriotism in the Australian curriculum are learned through history, geography, and citizenship. There are seven basic education levels. Starting from class one to seven. In history lessons, students learn about how the state of Australia was formed, including respecting the Aboriginal culture. Besides, students deepen how the democratic process in Australia. Not only focus on things that come from the noble values of the Australian nation, but they also learn about how society develops over time including global influence in its society. Students in Australia learn about different kinds of differences that make up Australian culture.

Based on the current curriculum in Australia, the curriculum in the context of enhancing the love of the country in classroom learning is carried out through student portfolios. For example in classroom learning, for example in grade 3 elementary school students have to identify Australian differences in the past and present. Students must also identify the relationship between the person (human) where he lives and the characteristics of the place he lives. The following are examples of students' best portfolios of learning in grade 3 elementary schools (ACARA, 2019).

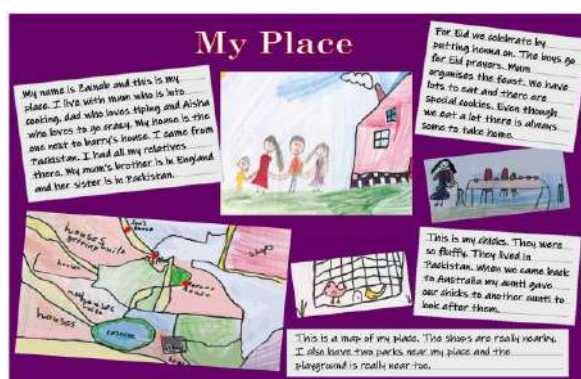


Figure 1: Example of the best results of grade 3 elementary school students in Australia

Source: ACARA (2019)

In the example of student work above, it can be seen that education in Australia not only values local culture but also the culture from which students come. This is because students in Australia are large

as multi-cultural students, coming from anywhere but living side by side in Australia. In the example of the application of other learning regarding the cultivation of a sense of love for the country, grade 3 elementary school students have also learned the concept of "harmony" and how the love of the country was formed. Students answer that harmony can be realized by mutual respect and respect for one another. In the learning process in Australia, students are provoked/stimulated to give their opinions. Students have also studied inquiry since childhood. An example is the portfolio of students learning to write letters and express their opinions about the bush / green meadow which turned into housing. Students think that although building a house is important, it must pay attention to the environmental ecosystem. Australian students also learn how holidays are celebrated by various communities. One of the celebrated holidays is Anzac Day. Anzac Day is an Australian holiday which pays homage to Australian heroes and intermediaries who have struggled to maintain peace throughout the world. In this case, students are given the task to write text to commemorate Anzac Day (ACARA, 2019).

Love of the country is also done through supporting lessons and across the curriculum. Besides going through the main lessons namely history, geography and citizenship (humanities and social science). Students also learn through dimensions of general abilities and priorities across the curriculum. In this case, students indirectly learn deeply about how to behave properly to have an impact on society (ACARA, 2019).

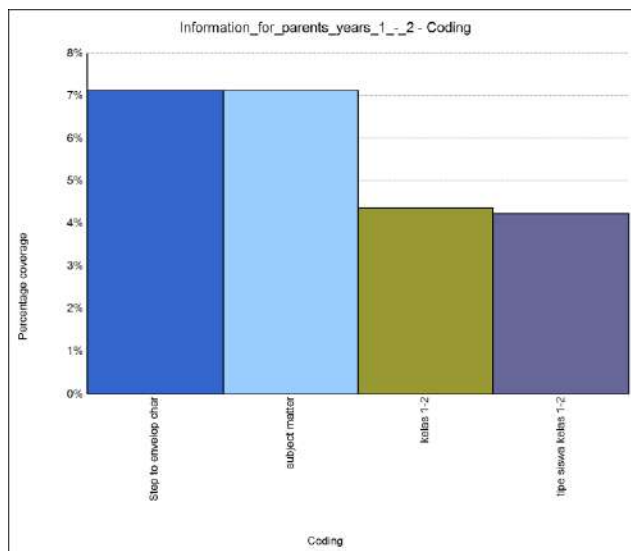


Figure 2: Percentages of Australia Curriculum (Source: Information for Parents years 1-2)

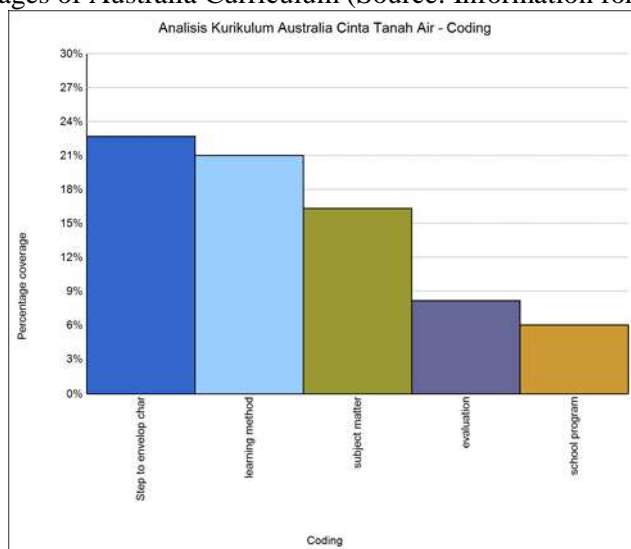


Figure 3: Percentages of Australia Curriculum (Source: ACARA 2019)

Based on the review that has been done, it can be seen that in general, the curriculum in Australia has included 5 of the 6 coding fields that were carried out. The five things that are most dominantly discussed are the character development steps. After that talk about subject matter, evaluation, school programs, and learning methods. The character development step in Australia is systematically packaged which consists of 4 major steps. These four steps are gradually adapted in school. Supported by the teacher's skill in packaging inquiry learning, making students' characters develop more optimally

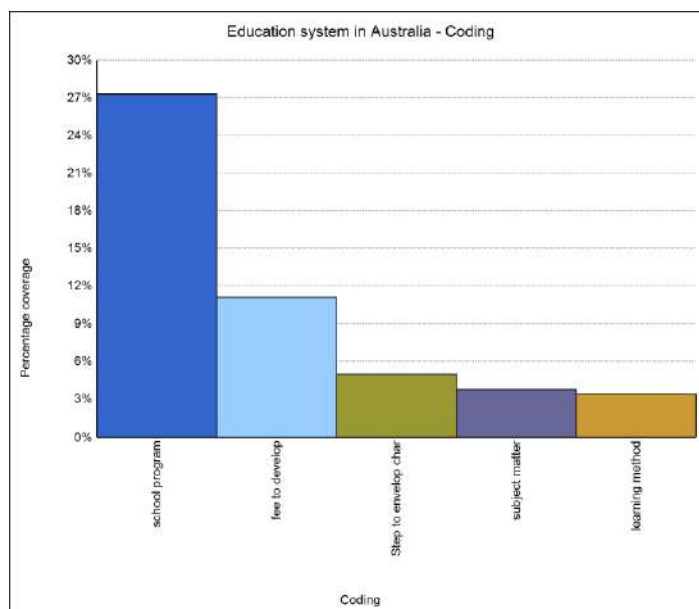


Figure 4. Percentage of Australia Curriculum

Source: Education system in Australia (Australia's Education System Wide, 2017)

In this chart we can find fields that have not been revealed in the two previous sources, namely regarding the cost of education in Australia. In the education system file in Australia, has been disclosed about the costs that need to be prepared for parents who will send their children to school, especially at the level of primary education which ranges from \$ 1,000 - \$ 20,000. In this document, the most widely expressed is the school program on age management starting from Kindergarten to 12th grade.

### **3.1.2 The cultivation of homeland love in the Indonesian basic education curriculum**

The love of the country in Indonesia is specifically outlined in the Strengthening Character Education (PPK) policy. Before developing PPK, what underlies this policy is the presence of unfavorable characters from community members so that it needs to Revitalize Character Education. This revitalization pattern is seen in the Grand Design of Character Education Development in 2009. The pattern is contained in the following figure:

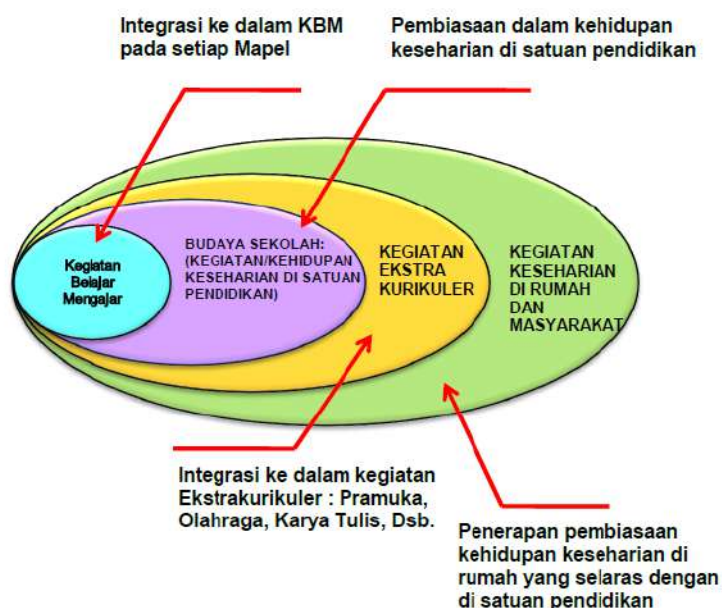


Figure 5: Grand Design in 2010  
Source: Ministry of National Education (2009)

The pattern of character education development is carried out one of them through learning activities, school culture, extracurricular activities and activities in the community. The above pattern has been implemented since the enactment of the Education Unit Level Curriculum (KTSP) and the 2013 Curriculum in the period 2013 to 2016. However, because it is felt that the implementation of the policy has not been running optimally and has not produced as expected, improvements were made so that a new policy Strengthening Education emerged Character (PPK). PPK has 5 main values, namely Religious with 12 sub-values, Nationalism with 10 sub-values, Mutual Cooperation with 9 sub-values, Integrity with 8 sub-values, and Mandiri with 8 sub-values. Thus, in PPK, there are 5 main values and 47 sub-values. This policy comes into force in 2017 and schools and teachers are expected to be able to adapt to the presence of KDP. The patriotism developed in the curriculum in Indonesia is included in the sub-values of the Nationalist core values.

The principles of development and implementation of KDP include: universal moral values, holistic, integrated, participatory, local wisdom, 21st-century skills, fair and inclusive, in harmony with the development of learners and measured. With the focus of the KDP movement covering the program structure, curriculum structure, and activity structure. KDP itself is carried out through 4 bases of movements, namely (1) Class-based KDP; (2) KDP based on school culture; (3) community-based KDP; (4) community-based PPK. Learning activities are usually also influenced by important days of the State. Students are usually asked to make certain works to commemorate the big day. In its application in schools, students are also asked to show their love for the country through their actions and words in school and the community.

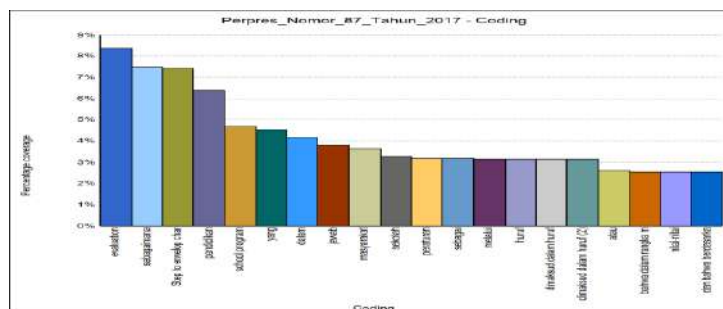


Figure 6: Curriculum in Indonesia  
Source: Perpres Nomor 87 (2017)

Based on the review that has been done, it can be seen that in general, the curriculum in Australia has included 5 of the 6 coding fields that were carried out. The five things that are most dominantly discussed are the character development steps. After that talk about subject matter, evaluation, school programs, and learning methods. The character development step in Australia is systematically packaged which consists of 4 major steps. These four steps are gradually adapted in school. Supported by the teacher's skill in packaging inquiry learning, making students' characters develop more optimally

#### **4.0 DISCUSSION**

The character can be defined as an individual or group form as a unitary state (Douglas, 2016). A character must be built and developed consciously from day to day through a process that is not instant and is not innate from birth. For that, the characters are very possible to be changed and developed. Furthermore, it is also stated that character education through schools is not merely the learning of knowledge, but more than that, namely the cultivation of moral, ethical values, aesthetics, noble character (H. Gunawan, 2012). The love of the country is one of the fundamental characteristics of the interests of the nation and state. Without this character, the survival of the nation and state can be threatened.

Based on the results of the research above shows that there are 3 similarities and 6 differences in the application of the character education curriculum in Indonesia and Australia. Similarities in terms of (1) the concept of planting, the two countries together prioritize mutual respect and respect for differences; (2) commemorating holidays, the two countries have similarities in the application of learning by teachers, where teachers give the task of making certain works; (3) the implementation of the love of the state, together students are invited to apply the love of the country in the school and its surroundings. As the results of a review of the Australian education curriculum in grade 3 elementary schools show that students have learned the concept of "harmony" and how the love of the country was formed. Students answer that harmony can be realized by mutual respect and respect for one another. This is also supported by the Indonesian motto "Unity in Diversity" which means different but still one too. This motto also always underlies every activity and educational curriculum in Indonesia. This is supported by the statement that Unity in Diversity as the key and unifying the diversity of the Indonesian nation is a characteristic of the unity of the nation of Indonesia as a multicultural country (Lestari, 2016).

The curricula of the two countries also have similarities in teacher instruction for their students in commemorating national historic days. They are usually asked to make certain works to commemorate national holidays. This is consistent with the results of a study by Widayani (2016) that integrating the value of patriotism into the culture of schools conducted by teachers in the classroom, for example during the Kartini Day celebration on April 21st, students were asked to wear traditional clothes. This is also in line with the results of studies obtained in the Australian State curriculum. One of them is that Australian students learn how the holidays are celebrated by various communities. One of the celebrated holidays is Anzac Day (ACARA, 2019)

The difference lies in: (1) main dimensions, in Australia there are 3 dimensions, in Indonesia there are 5 main KDP values; (2) organizing in schools, in Australia the country's love is included in social science subjects, while in Indonesia it is included in intracurricular, curricular and extracurricular activities; (3) time period, basic education in Australia is carried out at 7 levels, whereas in Indonesia there are 6 levels; (4) curriculum approach in schools, Australia is carried out with special subjects, namely social science which consists of history, geography and citizenship, in Indonesia the main focus is on the subject of Pancasila education and citizenship; (5) the learning scheme of the state of love, in Australia there are 4 main stages, in Indonesia does not yet have a special nature, it optimizes the function of "tripusat" education; (6) Evaluation, in Australia asked to make conclusions that are simple and clear. In Indonesia, the education office conducts routine monitoring and evaluation at least 1 (one) time in 1 (one) year regarding Implementation in the Formal Education Unit.

One difference that stands out is one of the dimensions of the two countries. Australia's basic education curriculum to instill the character of loving the country has 3 dimensions, namely subjects, general abilities, cross-curriculum priorities. While in Indonesia, the character of patriotism is included in one of five dimensions, namely Nationalism on Strengthening Character Education (PPK). Another quite clear difference is in the stages or schemes. In Australia, it has been stated that it consists of four main stages, namely (1) traditions and values that shape society, (2) how the dynamics of community and economic development, (3) how society, ideas, places are accepted as an integral part and then connected,

(4) how the community learns to be responsible and participate in the community to create an agreement. While in Indonesia does not yet have a specific stage but embodied in optimizing the function of "tripusat" education, namely family, school and community.

## 5.0 CONCLUSION

Similarities in the curriculum for basic education in Australia and Indonesia can be seen in: (1) the concept of planting; (2) commemorating national holidays; (3) the implementation of love for the country. The difference lies in: (1) the main dimensions; (2) organizing in schools; (3) time period; (4) curriculum approach in schools; (5) homeland love learning schemes; (6) Evaluation.

## REFERENCES

- Anna Kavelj. 2017. Australia's Education System wide, ([https://www.youtube.com/watch?v=K7\\_v6-HyU58](https://www.youtube.com/watch?v=K7_v6-HyU58))
- Astuti, M. Y. (2014). *Konstruksi Karakter Nasionalisme Pada Film Soegija (Analisis Isi untuk Pembelajaran Pendidikan Pancasila dan Kewarganegaraan)* (Doctoral dissertation, Universitas Muhammadiyah Surakarta).
- Australian Curriculum, Assessment and Reporting Authority (ACARA), (2019) (<https://www.australiancurriculum.edu.au>)
- Australian Curriculum. 2019. Information for Parents The Australian Curriculum years 1-2, (<https://www.australiancurriculum.edu.au>)
- Budimansyah, D. (2010). Tantangan globalisasi terhadap pembinaan wawasan kebangsaan dan cinta tanah air di sekolah. *Jurnal penelitian pendidikan*, 11(1), 8-16.
- Davis, G. (2008). Formulating an effective higher education curriculum for the Australian waste management sector. *Waste management*, 28(10), 1868-1875.
- Douglas, E. (2016). Retrieved April 5, 2019, from <https://www.kansascity.com/opinion/readers-opinion/guest-commentary/article111877937.html>
- Gunawan, H. (2012). *Pendidikan karakter: konsep dan implementasi*. Alfabeta.
- Kemdiknas, P. K. (2009). Pengembangan dan Pendidikan Budaya dan Karakter Bangsa: Pedoman Sekolah. *Jakarta: Pusat Kurikulum Balitbang Kemdiknas*.
- Lestari, G. (2016). Bhinneka Tunggal Ika: Khasanah Multikultural Indonesia Di Tengah Kehidupan SARA. *Jurnal Pendidikan Pancasila dan Kewarganegaraan*, 28(1).
- Lestary, D. (2015, Juni 17). Retrieved Juli 30, 2019, from <https://www.kompasiana.com/dianrarry/54f3ff507455139f2b6c84ec/perjalanan-kurikulum-pendidikan-indonesia>
- Machali, I. (2014). Kebijakan perubahan kurikulum 2013 dalam menyongsong Indonesia emas tahun 2045. *Jurnal Pendidikan Islam*, 3(1), 71-94.
- McGoWAN, S., & Potter, L. (2008). The implications of the Chinese learner for the internationalization of the curriculum: An Australian perspective. *Critical Perspectives on Accounting*, 19(2), 181-198.
- Midford, R., & McBride, N. (1999). Evaluation of a national school drug education program in Australia. *International Journal of Drug Policy*, 10(3), 177-193.
- Muchtar, M., Mahanani, P., & Rosyadi, M. I. (2017). PEMAHAMAN MAHASISWA PGSD TERHADAP IMPLEMENTASI NILAI-NILAI PANCASILA. *Sekolah Dasar: Kajian Teori dan Praktik Pendidikan*, 24(2), 180-186.
- No, P. P. (87). Tahun 2017 tentang penguatan pendidikan karakter.
- Samani, M., & Hariyanto, M. S. (2012). Konsep dan model pendidikan karakter. *Bandung: Remaja Rosdakarya*.
- Sugiyono, J. (2011). Metode Penelitian Kuantitatif dan Kualitatif dan R dan D.
- Suzuki, R. (2009). Negara mana yang punya nasionalisme paling tinggi?, (Online), (<https://forum.idws.id/threads/negara-mana-yang-punya-nasionalisme-paling-tinggi.46869/>).
- Walsh, K., & Farrell, A. (2008). Identifying and evaluating teachers' knowledge in relation to child abuse and neglect: A qualitative study with Australian early childhood teachers. *Teaching and Teacher Education*, 24(3), 585-600.

- Weuffen, S. (2019). Surveying the landscape five years on: An examination of how teachers, and the teaching of Australia's shared-history, is constructed within Australian academic literature. *Teaching and Teacher Education*, 78, 117-124.
- Widayani, N. E. (2016). Penanaman Nilai Cinta Tanah Air di SD Negeri Sedayu 1 Muntilan Magelang Tahun Ajaran 2014-2015. *BASIC EDUCATION*, 5(4), 313-323.

## Exploring The Professional Judgement Practises of Classroom Assessment Among Primary Science Teachers

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### ABSTRACT

*Classroom assessment is one of the transformations in Malaysia education system. It was emphasised on the students' perspectives, their diversity of learning styles, and intellectual development. A good measure of assessment for learning should have the capacity to track student progress as well as help students recognize areas for improvement (Pat-El, Tillema, Segers & Vedder, 2013). There are important criteria that required by a teacher in implementing classroom assessment, which is known as professional judgement. Professional judgement is a consideration made using professional knowledge of the intended curriculum covers knowledge, skills, values, evidence of achievement, teaching strategies, assessment methods, and criteria and standards. Professional judgement requires teachers to make ethical and responsible decisions about the level of students based on the analysis and summary of information on learning (BPK, 2018). However, findings by Daisy (2013) indicates that teachers have least competency in constructing and appraising classroom assessment. There is another issue when parents have questions about the teachers' credibility and integrity in doing assessment. They feel hesitant to trust the teacher to assess their children. Besides that, parents are also worried that teachers are biased in assessing their children and feeling less confident about the ability of the teacher to assess their students (Ramlah Ab Khalid & Jamil Ahmad, 2015). Therefore, it is important for teachers to have a genuine professional judgement in order to convince the parents and shows their reliability. Considering the influence of professional judgement on students' assessment outcomes has lead researcher to explore on teachers' practise and confidence towards their professional judgements. This is a qualitative case study. This study involved four science teachers as the respondents. The findings show that there are six factors of teacher's understanding towards professional judgement; i. Teacher's daily practise in implementing professional judgement, ii. Teacher's perception about professional judgement, iii. Teacher's challenge in implementing professional judgement, iv. Teacher's incompetency in implementing professional judgement, v. Teacher's confidence in professional judgement and vi. Suggestion to improve teacher's professional judgement. The findings should alert teachers to improve their competency in using professional judgement by practicing all the knowledge and skills needed in assessing pupils' learning. Besides that, the findings on teachers' perception towards classroom assessment and professional judgement will give feedback to other relevant parties such as Teacher Education Division and Curriculum Development Division to provide appropriate trainings and briefings regarding teachers' professional judgement to teachers.*

**KEYWORDS:** Classroom Assessment, Professional Judgements, Teachers' Competency.

### 1.0 INTRODUCTION

Classroom assessment facilitates the transformation of a more student-centred environment with an emphasis on the students' perspectives, their diversity of learning styles, and intellectual development. Classroom assessment is both a teaching approach and a set of techniques that tell more about what and how students are learning. From the assessment, information will benefit teachers to plan better learning activities to structure their teaching. The techniques are mostly simple, non-graded,



anonymous, in-class activities that give both teachers and students useful feedback on the teaching-learning process. Classroom assessment differs from tests and other forms of student assessment in that it aims at course improvement, rather than at assigning grades. According to Pat-El, Tillema, Segers, & Vedder (2013), a good measure of assessment for learning should have the capacity to track student progress as well as the capacity to help students recognize areas for improvement.

In Malaysia, teachers assess students in both centralised assessments and school-based assessments. Centralised assessment is conducted and administered by teachers in schools using instrument, rubrics, guidelines, timeline and procedures prepared by Examination Board of Malaysia (BPK 2018). School-based assessment emphasizes on collecting first-hand information about pupils' learning based on curriculum standard. Teachers get pupils responds and report their progress. Teachers continuously gather and use information to make decisions about classroom management, instruction, student learning and planning (Russell & Airasian, 2012). The information gathered from assessments is not meant to be a comparison and competition among students. Instead, it is used to establish classroom stability; plan and conduct instruction; students' placement, provide feedback and incentives; diagnose students' problems and disabilities; and judge and grade academic learning and progress (Russell & Airasian, 2012).

Teachers play a significant role in implementing the classroom assessment. In the classroom, teachers are the primary assessors of students. Teachers spent approximately one third to half of their time in the classroom to prepare and engage with assessment related activities according to Stiggins (1992). Therefore, they should have enough knowledge and skills in order to prepare their students for upcoming assessment through effective instruction, constructing quality assessments, and evaluating assessment materials for use. Teachers should be able to find ways to access, as directly and accurately as possible. Teachers must be familiar with a wide variety of assessment tools, make good assessment choices for various levels of educational outcomes they encounter (Daisy Rani a/p Arulappen, 2013). In order to achieve their purposes and perform effectively and efficiently, teachers should be competent in classroom assessment.

There is one important criteria highlighted in implementing classroom assessment. It is called professional judgement. Professional judgement is a consideration made using professional knowledge of the intended curriculum, which covers knowledge, skills, values, evidence of achievement, teaching strategies, assessment methods, and criteria and standards. Professional judgement requires teachers to make ethical and responsible decisions about the level of students, based on the analysis and summary of information on learning (BPK, 2018). Teachers use their knowledge, experience and input of students' learning and practice professional responsibility in making professional judgement. Teachers also need to keep abreast of the areas or disciplines, pedagogy and assessment through professional reading and discussion with other educators to improve their competence in professional judgment. Hence, teachers should be able to equip themselves with a good understanding of profesional judgement before they carry out the classroom assessment towards students.

However, classroom assessment often become an issue in Malaysia. For the past fifteen years, research has been conducted by Malaysians related to various aspects of classroom assessment. Tan (2010) has highlighted issues related to teachers who thought that the classroom assessment adds more workload to teachers in schools, whereby they are already burdened with administrative tasks and curriculum. This led to teacher assessment system being implemented as a product rather than as a process. This shows that teachers are only implementing the ministry's needs without seeing the benefits of the classroom assessment in depth. Research findings by Daisy (2013) indicated that teachers have the least competency in constructing and appraising classroom assessment. This is proof that teachers still lack of knowledge and skills while conducting classroom assessment.

There is also an issue when parents question the teachers' credibility and integrity while doing the assessment. They feel hesitant to let the teacher assess their children. Besides that, they are also worried that the teachers would be biased in giving marks to their children. This is due to the lack of trust and confidence in the teachers' ability to assess (Ramlah AbKhalid & Jamil Ahmad, 2015). Therefore, it is important for teachers to have a genuine professional judgement in order to convince the parents and show their reliability. However, there are not many research regarding teacher's professional judgement have been carried out in Malaysia. Previous researches were more focused on the implementation, perception and challenges of classroom assessment (Mazlini Adnan & Noorfazelawati Abd Kadir, 2014; Ramlah AbKhalid & Jamil Ahmad, 2015; Siti Najihah Jamal et al., 2013). For that reason, researcher has decided to conduct a study to understand the professional judgement of classroom assessment among primary

teachers. Researcher has chosen science teachers as the respondents since Science is one of the crucial subject in school.

In this study, researchers have narrowed the perspective of classroom assessment by analysing teachers' understanding of professional judgement during the process of classroom assessment. In particular, the researchers tried to examine:

- i. How teachers developed their professional judgement?
- ii. How confidence the teachers are towards their own professional judgement?

## **2.0 LITERATURE REVIEW**

### **2.1 Classroom assessment**

A classroom assessment is a procedure for making inferences about students' learning when learners engage in tasks and generate data. These *data* become *evidence* when they are used in support of particular claims (Black & Wiliam, 2018). According to Frey & Schmitt (2010), classroom assessments are designed to affect learning by providing feedback to learners and instructors and they are administered during instruction that do not affect students' grades. In fact, teachers can utilize the information they collect from their assessment of students' learning to make adjustments in their instruction, and students can use the feedback from frequent assessments to adjust their own learning strategies (Black & Wiliam, 2018).

From Yuankun Yao, (2015) it is found that teachers need to develop a solid understanding of classroom assessment so that they can develop a balanced approach to assessment of learning and assessment for learning. A good assessment practices may be implemented using various techniques and strategies that can be adapted for different situations in order to track student's progress in all areas of learning. Pekis & Gourgiotou ( 2017) say, in the authentic assessment environment, teachers and children can act effectively in the school community and set targets to improve the quality of teaching and learning process. Educators need to combine authentic assessment techniques with daily practice interpreting assessment as a part of effective planning of teaching and learning and not as an isolated event in the daily school routine.

### **2.2 Understanding professional judgement**

The study by Thomas, (2012) saw the need for more professional development activities inside schools to expose teachers to contemporary approaches of assessment. Sandvoll (2014) highlighted the importance for teachers to align their espoused theories with their teaching practice. There is a confusion between teacher expectation and teacher judgement. However, we can clearly differentiate that expectations are typically predictions about future achievements while judgments are a current estimate of a student's performance (Meissel, Meyer, Yao, & Rubie-davies, 2017).

Looking out of the specification of education context, (D, Huse, & Hawthorn, 2012) have constructed a typology of four kinds of professional judgment in the health care field. It is believed that these can be generalized to the education field.

- i. The first level of professional judgment is technical judgments that are about specific issues involving routine tasks.
- ii. The second level of professional judgement is procedural judgment, which focuses on procedural questions and involves the practitioner comparing the skills/tools that he or she has available to accomplish a task.
- iii. The third level of professional judgment is reflective.
- iv. The fourth level of professional judgment is deliberative—it explicitly involves a practitioner's own values.

### *A Modelling of the Professional Judgment Process*

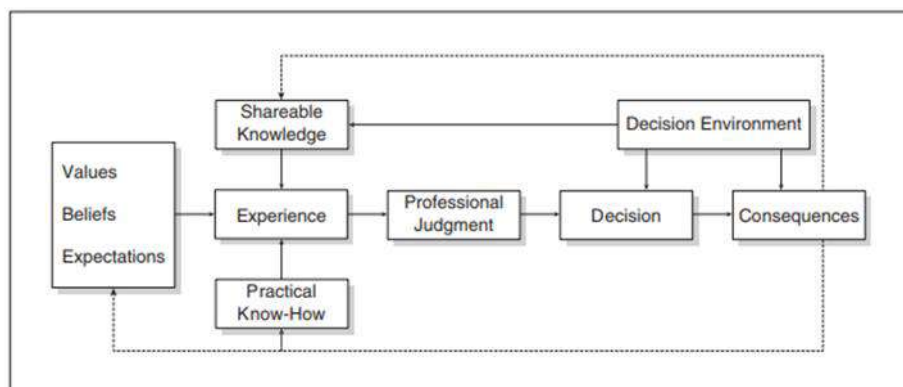


Figure 2.1 Model of professional judgement process (D et al., 2012)

Figure 1.1 displays a model of the way that professional judgment is involved in evaluator decision making.

## 3.0 METHODOLOGY

The study uses an individual interviewing session to obtain the perceptions and understandings of the teachers. An interview is considered a social interaction based on a conversation (Rubin & Rubin 2012). The most common form of interview is the person to person encounter, in which one person elicits information from another (Merriam & Tisdell, 2016).

### 3.1 The Interviewees

There were four teachers involved in the study. All of them were women and three of the teachers are around 30 years of age, except for the most senior teacher. All four teachers have the experience of teaching Science in primary school for more than 9 years. These teachers were targeted for the study because they were available when the researcher approached them to have the interview.

### 3.2 The Interview Process

The researcher contacted each respondent and obtained permission to interview him or her individually. During the interview, the researcher posed questions and added prompting follow-up questions, encouraging the respondent to elaborate on certain points and offer additional comments. The examples of open-ended questions were:

- i. *What do you understand about professional judgement?*
- ii. *How do you apply the professional judgment to your students?*
- iii. *What factors that influence you when making professional judgment?*
- iv. *To what extent is your satisfaction towards your own professional judgement during the process of classroom assessment?*

The interview took almost two months to be completed for all respondents. Some of them preferred to meet at their house but one respondent requested to be interviewed at a public place.

### 3.3 Data Collection

The interviewing session was recorded using an audio decoder. This practice is to ensure that everything said is preserved for analysis. Furthermore, the interviewer can also listen for ways to improve her questioning technique (Merriam & Tisdell, 2016). Besides that, interviewer takes some times to jot down her reflections immediately following the interview. These reflections contain insight suggested by the interview, descriptive notes on the behaviour, verbal and non-verbal of the informant and so on.

### 3.4 Data Analysis

Researcher transcribed the recorded interviews into verbatim transcription manually. This process was time-consuming but it gave great benefits to researcher, because they were familiar with the data. After the transcribing process, the verbatim transcription was analysed and classified into coding. Moving beyond coding, classifying pertains to taking the text or qualitative information apart and looking for categories, themes or dimension of information (Merriam & Tisdell, 2016).

#### 4.0 RESULTS AND DISCUSSION

Based on the interview session, researcher categorized the verbatim data into six themes that revealed the teachers' interpretation and understandings of professional judgement. Each theme was presented in a table consist of topic of the theme and examples of verbatim quotes. All the respondents were labelled as R1, R2, R3 and R4, which represented the Respondent 1, Respondent 2 and so forth. While the verbatim quotes were labelled as VI, which stood for 'Verbatim Interview'. The codes were given for each verbatim quotes as a reference to researcher in managing the sources of the verbatim quotes. The six themes identified were as follows:

##### i. Teacher's practise when making professional judgement

Teacher's practise	Examples of verbatim quotes
Based on students' performance, involvement, and attitude.	"I do base on the students' performance in the classroom, looking at their work and how the student's involvement in the class; other than that, we also look at the student's attitudes." [VI/ R2]
Based on students' experience and discussion with other teachers.	"Other than that, we also evaluate our experience with the students and sometimes discuss with other fellow teachers who also teach the students." [VI/ R2]
Teacher must consider all related aspects in doing judgement	"All these things need to be considered and professionally formulated to obtain a final achievement level for a student in year 6". [VI/ R1]
The urge to complete works	"I have to do the assessment right after the completion of the topic". [VI/ R3]

##### ii. Teacher's perception on professional judgement

Teacher's perception	Examples of verbatim citation
A well planned assessment to evaluate student's achievement.	"classroom assessment is something that are well planned, checked and recorded by the subject teacher's so that the pupil's development can be assessed" [VI/ R1]
Teacher thinks student deserves to get a grade according to their efforts.	"the level of achievement that can be achieved by the student supposed to be fair based on what they have performed." [VI/ R1]
To what extent the ability of students.	"In reality, the marks did not represent the ability of the students. A very upset situation if the students did not perform at all in state examination." [VI/ R4]

##### iii. Teacher's challenges in making professional judgement

Teacher's challenges	Examples of verbatim citation
Teachers lack of understanding about professional judgement	"There may be some constraints that occur. Most of the teachers still do not understand what a professional judgement is?" [VI/ R1]
Many topics in a subject need to be evaluate	"If you refer to Science subjects, there are many assessment reports that need to be made because of many topics" [VI/ R2]
Overwhelming number of pupils	"In fact, it is difficult to give students the level of mastery over each unit of learning because of the overwhelming number of pupils." [VI/ R2]
Time constraint	"We have time constraints. So sometimes we make it quickly but still holistically." [VI/ R3]

iv. Teacher's incompetency in making professional judgement

Teacher's incompetency	Examples of verbatim citation
Teacher does not provide evident	"There are also some teachers who do not have data or record data about student achievement during PBD". [VI/ R1]
Wrong practise of using professional judgement	"The teacher actually is not making a professional judgement but they are making a final assessment based on what was remembered and not what was recorded through a classroom assessment". [VI/ R1]
Factors that affect understanding of professional judgement.	"In Malaysia sometimes the judgement in giving marks is influenced by the administrator's attitudes who are pleased and praised for good marks." [VI/ R4]

v. Teacher's confidence of their professional judgement

Teacher's confidence	Examples of verbatim citation
Average satisfaction	"As for now, I am satisfied with the marks I give to the students." [VI/ R2]
Dissatisfy	"Honestly to say, I am quite dissatisfied with my professional judgement practise, because we have time constraints to do it properly" [VI/ R3]
High satisfaction	"I am very satisfied with the professional judgment made by me because I thoroughly examine every process that goes through taking into account the various factors that need to be seen in the student." [VI/ R1]

vi. Suggestion towards improvising the professional judgement

Teacher's suggestion	Examples of verbatim citation
Suggest further discussion among teachers and professional in education	"The educational system should listen both sides and make a buffer area so that the judgement should be carried out wisely." [VI/ R4]
Suggest sharing implementation methods to teachers.	"In my opinion, the actual process of making professional judgment still needs improvement in terms of sharing the implementation methods to teachers." [VI/ R2]

From all six themes, researchers have a better idea of overall teacher's understanding about professional judgement that are supposed to be applied during the process of classroom assessment. Researchers have determined and analysed the groups of data according to the research questions that was mentioned previously:

- i. How do teachers develop their professional judgement?
- ii. How confidence are the teachers towards their own professional judgement?

#### 4.1 Development of teacher's professional judgement

The ability of teachers to accurately evaluate students' achievements is considered an important aspect of teachers' professional competence, as teacher judgements are often the primary source of information about student achievement (Meissel et al., 2017). In context of Malaysian education system, 'teacher judgement' is known as 'professional judgement', where teachers use their knowledge, experience, input from students and practice the professional responsibility in making professional judgement (BPK 2018). Based on verbatim interviews data, we can see the teachers developed their professional judgement through their practise of using professional judgement.

"I do base on the students' performance in the classroom, looking at their work and how the student's involvement in the class; other than that, we also look at the student's attitudes and see the level of students' understanding in each topic through the tests or exercise that we give them."  
[VI/ R2]

The verbatim citation above indicates that Respondent 2 has practise only one out of four elements (knowledge, experience, input from students and practice the professional responsibility) of the professional judgement stated in the guideline book provided by the Curriculum Development Division. Even though it looks like the teacher has listed out a number of criteria to be considered during her evaluation, but the truth is all the points only covered one element that is input from students. The same responses were detected from the third respondent.

“The usual thing we see when it comes to the judgment is the level of student participation in the class, whether he can help a friend, guide a friend, so it shows that he understands. While for the written test, if the student can give answer without teacher’ help, it shows that he / she can independently answer the question correctly.”

[VI/ R3]

According to Respondent 3, she prefers to highlight the students’ participation regarding social attitudes such as guiding friends during teaching and learning. Compared to the response from Respondent 1, she gave some better ideas to researcher on how she professionally formulated the other factors that she claimed as professional judgement. However, there is an opinion from Respondent 3 that shows one element of professional responsibility towards her professional judgement;

“If there are many subtopics that need evaluation, I have to do the assessment right after the completion of the topic.”

[VI/ R3]

From her idea, we can see the urgency of time and assessment management shown by teacher to complete her student’s evaluation before proceeding to a new topic. While it is important to know how teachers implemented assessment activities in the classroom, it is equally important to understand the rationale and perceptions of the teachers who used the assessment strategies (Yuankun Yao, 2015). Therefore, the perceptions of teachers about professional judgement is also influential in developing their professional judgement.

From verbatim citation, there are varieties of perception on professional judgement emerge in the lens of a teacher. The combination of positive and negative views can naturally reflect their understanding towards a meaningful execution in professional judgement. The following represents positive views of teacher’s perception towards professional judgement.

“classroom assessment is a planned built-in exam checked and recorded by the subject teacher's so that the pupil's development can be assessed based on the of pupil's performance level using more precise considerations”

[VI/ R1]

Most of the respondents are thinking of student’s achievement and development when relating to professional judgement but in a different scope or terms. They feel that using professional judgement is all about the student’s behaviour and performance rather than looking at how teachers applied their knowledge to justify the student’s achievement. Determining whether a student meets the standard is up to the teacher, with no mandate with respect to which of these forms of evidence is utilized, nor the degree of weighting of specific types of data. The judgment, however, should focus solely on the student's achievement at that point in time and should not include construct irrelevant information such as student's behaviour or perceived potential ability (Meissel et al., 2017).

Apart from that, the negative views from the respondents is also important to researcher as an additional information especially when the researcher needs to do justification on that matter. There is one question about the student’s ability based on the assessment and teacher’s professional judgement. The researcher was uncertain whether the judgement made by the teacher could really represent the student’s achievement. This shows that teacher’s credibility is still doubtful in terms of managing the classroom assessment.

As a conclusion, to answer the first research question, we can say that teachers develop their professional judgement based on the combination of perception and practise in using professional judgement. Teachers can give varieties of perception and disclose their practise when they have sufficient knowledge and experience to share.

#### **4.2 Teachers' confidence towards their own professional judgement**

In order to justify teacher's confidence towards their own professional judgement, we need to consider a few aspects that contribute to individual self-confidence. Based on the verbatim interview, the researcher has identified a combination of teacher's confidence, competency, challenges and suggestion that will influence teacher's confidence towards their own professional judgement. Three out of four respondents felt satisfied with their practise of professional judgement except for one respondent who felt dissatisfied with her own practise. To understand more on the sincerity of their answers, the researcher tried to relate on the next theme on teacher's competency. There were a few perceptions revealed by the respondents regarding the factors that may weaken the implementation of professional judgement in our education system. According to the respondents;

"In Malaysia I think we lack of references for making professional judgement. Basically based on experiences. The teachers' poor exposure or readings may lead to poor knowledge and understanding of making judgements."  
[VI/ R4]

From the above view, we can see that teachers do not have enough understanding and exposure in practising correct and good professional judgment in their profession. To be fair to the teachers as the main assessors, the researcher also took into account the challenges and problems faced by teachers in making their professional judgement. There were some issues or challenges listed by respondents such as the teachers' lack of understanding about professional judgement, many topics in a subject that needs to be evaluated, overwhelming number of pupils and time constraint. All this challenges could be solved if teachers receive appropriate training specifically on how to do effective classroom assessment through professional judgement. Cheah (2010) found that the biggest challenge to conduct the School-based Assessment (SBA) was knowledge, skills and teachers' attitudes. According to Veloo, Krishnasamy, & Md-ali, (2015) teachers need formal training and support to enhance their knowledge, skills and confidence to implement the curriculum on the long run to develop this classroom assessment.

Based on the verbatim interview, there were a few suggestions from the respondents regarding the implementation of classroom assessment together with professional judgement criteria, which required extra attention from the teachers. Respondent 4 and Respondent 1 suggested that further two ways of discussions among teachers and professionals in education and sharing the implementation methods to teachers are essential in order to facilitate them and provide enough information. As a conclusion to answer the second research question, we can say that teacher's confidence towards her professional judgement lies under three aspects, which are teacher's self-confidence, teacher's competency and the challenges they face.

#### **5.0 CONCLUSION**

In summary, the findings of this study indicated that teachers develop their professional judgement through their knowledge and experiences as well as their perception and practise. The teacher's confidence towards their own professional judgement relies on three aspects consist of teacher's self-confidence, teacher's competency and the challenges they face. From the findings, we can see that there are some issues regarding teacher's integrity and competency, which is expected in the teaching professional. This situation shows that the teacher was neither ready nor willing to carry out the responsibilities. According to Tan (2010) his study found that teachers are less willing to implement classroom assessment. The implications of teachers not being ready to implement the new system resulted in marks awarded by teachers are neither fair nor valid. This situation affects the validity and reliability of the assessments. If the teachers are not ready to implement the classroom assessment, how do we expect them to scrutinize the critical part of professional judgement?

Therefore, this finding should alert teachers to improve their competency in making professional judgement by practicing all the knowledge and skills needed in assessing pupils' learning. Besides that, the findings on teachers' perception towards classroom assessment and professional judgement will give feedback to other relevant parties such as Teacher Education Division and Curriculum Development Division to provide appropriate trainings and briefings regarding teachers' professional judgement to

teachers. If the support and cooperation provided by teacher is satisfactory, the success of the system may show positive results.

## REFERENCES

- Black, P., & Wiliam, D. (2018). Classroom assessment and pedagogy. *Assessment in Education: Principles, Policy & Practice*, 1–25. <http://doi.org/10.1080/0969594X.2018.1441807>
- Cheah, U. H. (2010). *Assessment in Primary Mathematics Classrooms in Malaysia*. Tsukuba International Conference: Innovation of Mathematics Teaching and Learning through Lesson Study–Connection between Assessment and Subject Matter. 17-21 February, RESCAM, Penang (pp. 1-7).
- D, J. C. M., Huse, I., & Hawthorn, L. R. L. (2012). *The Nature And Practice Of Professional Judgment In Program Evaluation*. Los Angeles: Sage Publications.
- Daisy Rani a/p Arulappen. (2013). *Perception of teachers about classroom assessment and self-perceive of teachers' competency in classroom assessment*.
- Frey, B. B., & Schmitt, V. L. (2010). TEACHERS' CLASSROOM ASSESSMENT PRACTICES, 5(785), 107–117.
- Mazlini Adnan, & Noorfazelawati Abd Kadir. (2014). Amalan pentaksiran berasaskan sekolah (PBS) dalam kalangan guru matematik sekolah menengah 1, 4(1).
- Meissel, K., Meyer, F., Yao, E. S., & Rubie-davies, C. M. (2017). Subjectivity of teacher judgments: Exploring student characteristics that in fluence teacher judgments of student ability. *Teaching and Teacher Education*, 65, 48–60. <http://doi.org/10.1016/j.tate.2017.02.021>
- Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative Research, A guide to Design and Implementation* (Fourth). San Francisco: Jossey-Bass.
- Pekis, A., & Gourgiotou, E. (2017). Parental Perceptions about Children' s Authentic Assessment and the Work Sampling System' s implementation, 4(2), 182–210. <http://doi.org/10.21449/ijate.318250>
- Pat-El, R. J., Tillema, H., Segers, M., & Vedder, P. (2013). Validation of assessment for learning Questionnaires for teachers and students, *British Journal of Educational Psychology*, 83(1), 98-113. Doi: 10.1111/j.2044- 8279.2011.02057.x.
- Ramlah AbKhalid, & Jamil Ahmad. (2015). Pelaksanaan Pentaksiran Sekolah (Ps): Satu Inovasi Sistem Penilaian Murid Untuk Peningkatan Profesionalisme Guru Abad 21, (Tam 1999).
- Russell, M. K. & Airasian, P. W. (2012). *Classroom assessment: Concepts and applications*. New York, NY: McGraw – Hill. ISBN: 978-0-07-811021-4
- Siti Najihah Jamal, Sharifah Nurarfah, S Abd Rahman, Nor Nabila Sujak, Saravanan a/l Maniam, Sharifah Nasriah, Ching. (2013). What is School-based Assessment (SBA)? How SBA is implemented in classroom?, (2003).
- Stiggins, R. J. (1992). High quality classroom assessment: What does it really mean? *Educational Measurement: Issues and Practice*, 11(2), 35-39.
- Thomas, M. (2012). Teachers' beliefs about classroom assessment and their selection of classroom assessment strategies. No Title. *Journal of Research and Reflections in Education*, 6(2), 103-112.
- Veloo, A., Krishnasamy, H. N., & Md-ali, R. (2015). Teachers' Knowledge and Readiness towards Implementation of School Based Assessment in Secondary Schools, 8(11). <http://doi.org/10.5539/ies.v8n11p193>
- Yuankun Yao. (2015). Teacher Perceptions of Classroom Assessment: A focus group interview, 24(2), 51–58.



## Common Errors in Organic Reaction Mechanisms: Is there any Strategy to Teach Students about their own Errors?

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### ABSTRACT

*Organic reaction mechanism (ORM) is the step by step sequence of elementary reactions by which overall chemical changes occurs among organic compounds in various disciplines such as agricultural science, food science, pharmacy, medicine and other life sciences. The concept has been perceived as difficult by many students and therefore learned it by memorisation which resulted to partial recall and misconceptions that accumulated to errors of serious concern. An understanding of students' errors could be valuable as acquiring an insight and having the knowledge about it makes changes possible to decrease its negative consequences in the future. Hence, teachers were saddled with the responsibility of recognizing students' errors as an important part of promoting students learning and deeper understanding. However, the way chemistry teachers manage students' errors in ORM have been localised and may differ between teachers across institutions and among countries. Hence, this study is aimed at reviewing literature on students' common errors in ORM to find out the strategy used for teaching students about their own errors. Scoping method was employed to select and extensively review past researches selected based on key variable of organic reaction mechanisms, students errors, Delphi methods and error correction theory (Repair Learning Theory) from researches conducted and published in databases including web of science, science direct and Emerald between the period of 2010 to 2018. It was found that there was no common strategy for teaching students about their own errors instead teachers try to either avoid the errors or reduced it based on their own experiences. Delphi method as an alternative communication tool for achieving consensus amongst experts and practitioners can be used to get agreement among chemistry teachers strategies used in overcoming students errors in ORM. Based on the nature of students' common errors and the Delphi method, it was recommended that when students' common errors are known, their causes can be identified and hence development of a common error strategy (CErS-ORM) for teaching ORM was proposed. Theories such as Repair Learning Theory, would be a fruitful pursuit to theorize the strategy developed for simplifying learning organic reaction mechanisms and help students to avoid errors in the future.*

**KEYWORDS:** Organic Reaction Mechanisms, Students Common Errors, Delphi Method

### 1.0 INTRODUCTION

Organic reaction mechanisms (ORM) is a central organic chemistry concept used in the synthesis of carbon compounds. The concept is spiral in the curriculum being taught from high school, until university level. Organic chemistry concepts are not only crucial in chemistry education program, but also an integral part of other subjects areas such as agriculture, biology, biochemistry forestry and medicine. Similarly, organic chemistry concepts such as functional groups, nucleophiles, electrophiles, and synthesis and reaction mechanisms are paramount in different areas of economic development as many as petrochemicals, textile science, food and pharmaceutical sciences. Researchers (Talib, Othman, & Putri, 2014; Van Rens et al., 2014; Popova & Bretz, 2018) reported that, a good understanding of how ORM happen is essential in the synthesis of organic compounds.

In their review of the nature of organic chemistry, (Talib, Othman & Putri, 2014, p. 530) concludes that "Understanding the basic concepts of organic reaction mechanism is crucial for students before they can learn more advanced topics." Further studies (Anzovino & Bretz, 2015; Bode & Flynn, 2016) opined that the highest cognitive learning outcomes of organic chemistry is to develop the skills needed for students to solve synthesis-types of problems. It is therefore, necessary for students to understand how to draw reasonable organic reaction mechanisms, since it form the framework that makes sense to the more advanced organic chemistry.

The most commonly used strategy for teaching ORM is the arrow pushing technique (Flynn & Ogilvie, 2015; Flynn & Featherstone, 2017; David & Godoy, 2018). The techniques involves the use of arrow to show the movement of a pair of electrons from an electron rich location to an electron poor location during the forming and the breaking of chemical bonds (Levy, 2008). A process that was regarded as an additional 'load' to the students during the thinking process which can leads to confusion (Mayer & Moreno, 2003; Talib et al., 2014). Although, there are textbooks describing strategies for drawing organic reaction mechanisms, for example, *The Art of Writing Reasonable Organic Reaction Mechanisms*, 2nd Edition (Holman, 2003), the ability of carbon to undergo catenation process i.e. to form straight, branched, cyclic, alicyclic, saturated and unsaturated compounds makes understanding and remembering of the bewildering series of organic reactions very challenging. Hence, the rising interest of scholars to improve teaching and learning of organic reaction mechanisms (Bhattacharyya, 2013; Cruz-Ramírez De Arellano & Towns, 2014).

In addition, representation model used by teachers have been evidently shown to be the causes of errors made by students when using the curly arrows in drawing ORM. It became difficult for students to quickly shift their thoughts from one concept to another, such as between sub-micro, macro, and symbolic levels (Treagust, 2013), and make connections. Earlier studies (Ferguson & Bodner, 2008; Penn & Al-Shammari, 2008; Tami, Nahum, Hofstein, Mamlok-Naaman, & Bar-Dov, 2004), reported other causes of difficulties in learning organic reaction mechanisms including, abstract nature of the concepts, overload of students working memory space, motivation, language and communication and interest. Similarly, there are divergent views in the literature on what students should learn first, the arrow pushing formalisms or the subject matter to develop the needed skills for writing a reasonable ORM.

Cruz-Ramírez De Arellano and Towns, (2014); Holman, (2003); Weinrich and Sevia, (2017) reported the common errors students makes whilst drawing organic reactions mechanisms including inappropriate arrow positioning and direction, arrow shortage, hypervalencies, mixed media errors, and charges conservation failure. This has become a wake-up call for study to identify the causes of students' errors in organic reaction mechanisms with the aim of teaching students about their own errors so as to overcome the consequences of these errors in the future.

### 1.1 Objective of the Study

The objectives of this study are to find out:

1. If there is any strategy to teach students about their own Errors in ORM.
2. How Delphi method could be used as an alternative communication tool for achieving consensus amongst chemistry teachers on different strategies adopted for overcoming students' common errors in ORM.

### 1.2 Research questions

To achieve these objectives, the follows research questions guide this study:

1. Is there any common strategy for teaching students about their own Errors in ORM?
2. In what way Delphi method can be used for achieving consensus amongst chemistry teachers on different strategies adopted for overcoming students' common errors in ORM?

Scoping method was used to review articles pertaining to students' errors in organic reaction mechanisms and strategies used by chemistry teachers to teach the concept. The method involve four stages namely; identification, screening, eligibility and inclusion (Kang, Phan, Bolas, & Krum, 2016). Three strings were used to search for relevant articles. These are, organic reaction mechanisms AND students' errors; organic reaction mechanisms AND strategies; error correction theory AND communication tools in education. The effort successfully captured articles from open access journals including Emerald, Science Direct, Springer, Sage, Taylor and Francis, and Web of Science Databases. The word 'AND' was used in

the search string to add a wide range of findings and expand the search into a specific study of organic reaction mechanisms (Rosli, Capraro, & Capraro, 2014). A standardized extraction form was designed based on the four stages of review and collected articles demographic data and features reflecting the methodological rigor of the articles reviewed, 17 articles met the inclusion criteria.

## 2.0 LITERATURE REVIEW

This review of literature focuses on issues related to students' errors in organic reaction mechanisms and learning theories that can underpins design and development of a strategy for teaching students about their own errors. Delphi method, as well as Repair Learning Theory were discussed in relation to how it supports the development of a program, a curriculum or course to assist students to learn about their own errors.

### 2.1 The Concept of Error

In general, an error is the behaviour and decision of the student that leads to an undesirable difference between an expected and real state of a given task or event. Zuo, (2017) defines errors as the "individuals' actions or decisions that may lead to actual or potential negative consequences for organizational functioning that could have been avoided," (p. 1013).

Cyr and Anderson (2015) argued that errors are not the same with trials, failures, violations, sub-optimal results, errors, misconceptions and/or experimentation. For examples, in the organizational context errors include wrong prescription given by a doctor, a wrong answer given by student, and wrong coding in software programming. In all of these examples, errors have negative consequences to customers, clients, patients, students and the overall organisation. These errors might have been avoided if the activities were carried out correctly, or at least might be avoided in the future if the employee, teacher, doctor or programmers involved can learn from the errors. An errors can be costly and are often associated with negative consequences (Pawlak, 2014; Tulis, Steuer, & Dresel, 2016; Zuo, 2017).

However, the value of errors is that acquiring insight about it causes, can makes changes possible to stop, or decrease it negative consequences in the future (Kannampallil et al., 2017; Kryeziu, 2015; Treagust, 2013). Therefore, as a significant aspect of learning from experience, learning from errors is an important activity for individual teachers, groups, and organizations (Weick & Ashford, 2001; Kannampallil et al., 2017). Hence, teachers recognize that, errors makes by students are an inevitable and important part of promoting students' learning and deeper understanding(Wenzel & College, 2002). From this perspective, teaching from errors could be an effort to assist students purposefully to reflect, analyse and apply alternative methods to decisions or actions to reduce or prevent the errors from happening in the future.

Error correction is what both teachers and students often focus on, and most of them over emphasized the importance of corrective feedback, which leads to lack of confidence in the students to tap their capacity in using the new language (Utomo, Yuana, Narulita, Fikri & Wahono, 2018).The errors of the student in chemistry are not simply the consequence of ignorance and accidents in the situation. The majority of student errors are not due to uncertainty, lack of care or unique situational conditions, as was assumed at the beginning of the Behavioural Education Theory. Rather, students' errors are the result or product of previous experience in the chemistry classroom (Pawlak, 2014; Tulis et al., 2016; Zuo, 2017)

Depending on the current state of error research, student errors are causally identified and very often systematic, persistent and will last for several school years, unless the teacher intervenes pedagogically; can be analysed and described as error techniques can be derived, as to their causes, from certain difficulties experienced by the teacher. Analysing students' errors may reveal the faulty problem-solving process and provide information on the understanding and the attitudes toward chemistry.

Rather than minimizing errors, chemistry teachers acknowledge errors as opportunities to teach students to reflect and take helpful action (Kryeziu, 2015; Popova & Bretz, 2018). Despite the potential benefits of using errors as teaching opportunities, barriers such as time constraints, the desire to avoid uncomfortable future relationships with students, and a lack of training about how to make disclosures may make chemistry teachers hesitant to discuss errors with students (Bode & Flynn, 2016; Flynn & Ogilvie, 2015). Nonetheless, the following 3-part framework is helpful for transforming students' errors into valuable learning opportunities namely; orient students to errors as learning opportunities, model appropriate ways to view and handle errors, and debrief errors with students(Guo, 2012; Utomo, Yuana, Narulita, Fikri & Wahono, 2018; Weinrich & Sevia, 2017a).

### 2.3 Students Common Errors in Organic Reaction Mechanisms

Errors made by students in drawing ORM has been widely reported. For example (Holman, 2003) drawn the attention of chemistry teachers about common pitfalls and misconceptions that bedevil students. He recommended teachers to pay attention to the common errors, as failure to observe their strictures has caused many, many examination points to be lost over the years. Some of the most common errors students makes in drawing ORM include; inappropriate arrow positioning and direction, arrow shortage, hypervalency, mixed media errors, and charges conservation failure (Cruz-Ramírez De Arellano & Towns, 2014; Holman, 2003; Weinrich & Sevia, 2017).

These Errors could be costly if not deadly to students, parents, teachers and institutions in particular and the society in general, looking at the centrality of organic reaction mechanisms in all the natural and health sciences such as agriculture, biochemistry, food science, medicine, and pharmacy. Because errors in organic reaction mechanisms appear frequently in the learning process, one would imagine that there is a strong literature on errors and errors prevention strategies in teaching ORM.

Although chemistry teachers help students by trying to avoid the errors or by helping the students based on their personal experiences but this could be only for the errors noticed in their respective classrooms. The ways in which teachers manages students' errors was locally embedded and may differ between countries (Coppola & Pontrello, 2014; Pawlak, 2014; Metcalfe, 2017; Fikri & Wahono, 2018). For example, students in United State produce similar mathematical errors and the same number of errors as Chinese students, but teachers' responses differ significantly (Schleppenbach et al., 2007). United State teachers were more likely to follow errors with statements or immediate corrections, whereas Chinese teachers asked follow-up questions to prompt students' discussion about the errors. Similar to these findings, Duis (2011); Esselman & Hill (2016); Fautch (2015); Son & Sinclair, (2010) reported that Japanese teachers emphasize the positive function of errors and encourage their students to discuss misconceptions.

Whereas a body of empirical research has demonstrated differences about the way mathematics teachers manages students' errors on the macro level, i.e., between teachers in different countries, there is less research focusing on differences between chemistry teachers' strategies for managing students' errors specifically in organic reaction mechanisms. It can be deduced that the variation of teaching patterns following errors depends on the individual perception and shared perception of errors in the social learning environment of the classroom. However, theories and research findings on classroom goal structures proved that actual classroom practices influence students' attitudes and beliefs (Delale-O'Connor, Alvarez, Murray, & Milner, 2017; Sadaf & Johnson, 2017; Vishnumolakala, Southam, Treagust, Mocerino, & Qureshi, 2017). Consistent with this theoretical framework, it is assumed that teachers' everyday error management related practices have a substantial impact on error climate in the classroom which in turn has an influence on students' attitudes towards errors.

Hence, there is need for a study to collaborate with practitioners (chemistry teachers) to develop a common instructional strategy based on the students' common errors elucidated from students written manuscripts to enhance understanding of the concept so as to reduce or prevent the errors in the future. Instructional design models refer to the processes that should be followed by the instructional designer to generate a course, curriculum, and educational training material in order to organize content to suit the requirements of the students (Freeland, 1985; Khalil & Elkhider, 2016; Richey & Klein, 2005). Instructional design models are essential and helpful to the instructional designer as they close the gap between the theory of instruction and learning and thus help to build a learning atmosphere conducive to the direction and management of the educational development system (Abdallah & Wegerif, 2014; Jan Herrington, Susan McKenney, 2007; Tang, Zain, & Abdullah, 2010). For example, Design and Development Research (DDR) approach is a widely used research approach applicable in different settings (Twilley, 2014; & Kelly, 2016). The underlying framework of DDR was widely used to develop instructional models, programs, interventions and solutions for addressing practical educational problems through collaboration between researchers with teachers who are experts and practitioners in a real situation. However, to achieve consensus among experts, there is a need for a communication tool that will generate the experts' opinions based on the need arise from the problem. Many communication tools are used for obtaining experts opinion in education literature including questionnaire, interview, check list and Delphi method.

## 2.4 Delphi Method for Experts Consensus

Delphi method is a structured communication process for collection and analysis of the experts' opinions with controlled feedback in an iterative manner to build consensus (Mach, Mastrandrea, Freeman, & Field, 2017; O'Hagan, 2019; Shih et al., 2017; Tetlock, 2017b, 2017a). Delphi method is both a group communication tool and a means to achieve consensus amongst experts on a given topic (Avella, 2016; Howard, 2015; Nworie, 2011). The method is based on the idea that the collective wisdom of a group reduces ambiguity and increases accuracy (Howard, 2015; Koehler, 2012 in Forsyth, 2010). Hence, is regarded as a highly structured approach to data collection. The history of Delphi method can be traced to Dalkey and Helmer of the RAND Corporation who first documented the Delphi method in a paper in 1963, they described the method as it had been used approximately 10 years earlier "to forecast the impact of technology on warfare" (RAND Corporation, 2011). It is this forecasting feature that gave the method its name after the Oracle of Delphi who, according to Greek myth, made predictions and answered questions about the future.

The main aim of Delphi method is to determine the extent to which experts agree about a particular issue, with the ultimate goal of providing a unified experts' opinion (Processing, 2014; Townsend, Hofer, Benton, Hanick, & Brunetti, 2016). Hence, researchers could employed Delphi method to generate consensus opinion of experts (chemistry teachers) for developing an alternative strategy for teaching students to overcome errors in drawing organic reaction mechanisms. Moreover, Delphi method have been used to collect both qualitative and quantitative data, as commonly used in design and development researches to systematically measure and develop consensus when empirical evidence is lacking or contradictory as in the case of this study. Similarly, Delphi method involving number of rounds in collecting experts' opinion to ensure rigor in process through refinement to obtained consensus among experts (Avella, 2016). This characteristics of Delphi method coincide with one of the basic requirement of design and development research that advocate iterative process of refinement for data in developing interventions.

## 2.5 Theorising Interventions in Design and Development Research

Newly developed intervention need to be theorised for better practice and acceptance in education. Hence, Repair Learning Theory (RLT) proposed by (Brown & VanLehn, 1980) was discussed in this section as a theory that could be used for underpinning design and development of interventions related to errors in procedural tasks such as organic reaction mechanisms. RLT was based on two major principles namely; what cause errors in procedural tasks are systematic and can be identified and once the causes of errors associated with a particular task are known, they can be used to improve student performance and the examples used to teach the procedure.

Based on the assumptions of this theory and the literature reviewed so far the students are primarily taught procedural tasks such as organic reaction mechanisms by induction and that errors occur because of the abstract and dynamic nature of the organic reaction concepts and the inability of the existing chemical models to give clear representation of the concept. Therefore, the implication of repair theory is that problem sets should be chosen to eliminate the errors likely to cause specific errors. Another implication is that errors are often introduced when students try to extend procedures beyond the initial examples provided. This shows that researchers could trace the students' common errors and in collaboration with their teachers suggest ways to overcome the problems and improve their performance in the concept. Using errors to inform students, improve understanding and changes in ideas is a view of scholars such as (Metcalf, 2017; Pawlak, 2014; Utomo, Yuana, Narulita, Fikri & Wahono, 2018). Repair Learning Theory can be used to theorising intervention or solution develop through iterative process of refinement to address students errors in learning. This is because, RLT is a generic and systematic theory that explain how errors occur in learning a procedural task such as organic reaction mechanisms. Most importantly, RTL characterised errors committed by students in learning a procedural task as systematic, identifiable and once known could be used to overcome the impasse and hence prevent errors in the future.

## 3.0 CONCLUSION

This review showed that there is relatively no common strategy for overcoming students' errors in drawing organic reaction mechanisms. However, the causes of errors made by students in procedural tasks such as organic reaction mechanisms are systematic and identifiable. This shows that combining the theoretical knowledge of error management and Delphi method, it is possible to find alternative ways to

help students to overcome common errors in drawing organic reaction mechanism in the future. Especially using Delphi method which appear to be a potential communication method to generate consensus opinion on how to overcome errors among the organic chemistry experts. In addition, the teachers' real classroom experience will play a crucial role in achieving the consensus for developing the strategy.

#### 4.0 RECOMMENDATION

For the future research and development of solutions or intervention to overcome students' error in procedural task including organic reaction mechanisms, there is a need to develop a shared vocabulary and understanding among professionals in the fields of chemistry education and curriculum and instruction further. Similarly, a consensus view can be achieved among chemistry teachers through Delphi method to help in developing a common strategy for teaching students from their own errors. In addition, applying the theoretical principles for example, the Repair Learning Theory could be a great pursuit to simplify learning organic reaction mechanisms and help students to avoid errors.

To develop a common strategy for teaching students from their own errors a design and development research (DDR) approach comprising three phases, namely; the need analysis, design and development and evaluation phases (Richey & Klein, 2005; Kennedy-Clark, 2015) could be appropriate. The research approach could be qualitative in nature supplemented with quantitative approach in determining experts' consensus view (Delphi method).

The needs analysis phase should be aimed at identifying the needs to develop the model through literature review, document analysis of students' manuscripts on organic reaction mechanisms task and practitioners' opinion on the concepts under investigation. The findings of this phase could form the basis for the design and development of alternative teaching strategy. Design and development phase should involves designing of the first draft of the proposed stages of the instruction to be included in the model based on the findings in phase one that could be refine through interview. Researcher should solicit opinion of the practitioners based on their knowledge and experience of the issue under investigation. In this study the Delphi method could be used to obtain the consensus opinion generated from the interview.

Phase three, should be both formative and summative evaluation of the model through field testing and experts' evaluation. This is in order to determine the practicability and usability of the model. Data collection in design and development research should be conducted in phases to conform to the research design. In phase one for example, data could be obtained from documents and interviews. The analysis of students' written manuscript on organic reaction mechanisms, published researchers on organic reaction mechanisms from indexed databases and interviews of practitioners and the experts on strategies used for teaching the concepts. In design and development phase data could be generated using Delphi method which involve conducting pre-interview to select construct and for developing Delphi questionnaire to determine the consensus agreement of the experts. Lastly, field testing and experts' evaluation could be employed to collect data in Phase three.

#### REFERENCES

- Abdallah, M., & Wegerif, R. (2014). Design-Based Research (DBR) in educational enquiry and technological studies: A version for PhD students targeting the integration of new technologies and. (*Unpublished?*), 1–25. Retrieved from <http://0-files.eric.ed.gov.opac.msmc.edu/fulltext/ED546471.pdf%5Cnhttp://files.eric.ed.gov/fulltext/ED546471.pdf>
- Avella, J. R. (2016). Delphi Panels : Research Design , Procedures , Advantages , and Challenges. *International Journal of Doctoral Studies*, 11, 305–321.
- Bode, N. E., & Flynn, A. B. (2016). Strategies of Successful Synthesis Solutions: Mapping, Mechanisms, and More. <https://doi.org/10.1021/acs.jchemed.5b00900>
- Brown, J. S., & VanLehn, K. (1980). Repair Theory: A Generative Theory of Bugs in Procedural Skills. *Cognitive Science*, 4(4), 379–426. [https://doi.org/10.1207/s15516709cog0404\\_3](https://doi.org/10.1207/s15516709cog0404_3)
- Coppola, B. P., & Pontrello, J. K. (2014). Using errors to teach through a two-staged, structured review: Peer-reviewed quizzes and “what’s wrong with me?” *Journal of Chemical Education*, 91(12), 2148–2154. <https://doi.org/10.1021/ed500286y>

- Cruz-Ramírez De Arellano, D., & Towns, M. H. (2014). Students' understanding of alkyl halide reactions in undergraduate organic chemistry. *Chemistry Education Research and Practice*, 15(4), 501–515. <https://doi.org/10.1039/c3rp00089c>
- Cyr, A. A., & Anderson, N. D. (2015). Mistakes as stepping stones: Effects of errors on episodic memory among younger and older adults. *Journal of Experimental Psychology: Learning Memory and Cognition*, 41(3), 841–850. <https://doi.org/10.1037/xlm0000073>
- Delale-O'Connor, L. A., Alvarez, A. J., Murray, I. E., & Milner, H. R. (2017). Self-Efficacy Beliefs, Classroom Management, and the Cradle-to-Prison Pipeline. *Theory into Practice*. <https://doi.org/10.1080/00405841.2017.1336038>
- Duis, J. M. (2011). Organic chemistry educators' perspectives on fundamental concepts and misconceptions: An exploratory study. *Journal of Chemical Education*. <https://doi.org/10.1021/ed1007266>
- Esselman, B. J., & Hill, N. J. (2016). Integration of Computational Chemistry into the Undergraduate Organic Chemistry Laboratory Curriculum. *Journal of Chemical Education*. <https://doi.org/10.1021/acs.jchemed.5b00815>
- Fautch, J. M. (2015). The flipped classroom for teaching organic chemistry in small classes: Is it effective? *Chemistry Education Research and Practice*, 16(1), 179–186. <https://doi.org/10.1039/c4rp00230j>
- Flynn, A. B., & Ogilvie, W. W. (2015). Mechanisms before reactions: A mechanistic approach to the organic chemistry curriculum based on patterns of electron flow. *Journal of Chemical Education*, 92(5), 803–810. <https://doi.org/10.1021/ed500284d>
- Freeland, R. J. (1985). *Retention Of Problem-Solving Skill In Organic Chemistry: Instructional Design Using A Simulation Model (Elaboration, Learning Methods, Representation)*. ProQuest Dissertations and Theses.
- Guo, E. (2012). Running Head : ANALYSIS OF STUDENT ERRORS Type and Frequency of Errors Student Make While Solving Organic Chemistry Mechanisms Eunice Guo Course : CHEM 415 The University of British Columbia Project Supervisor : Jackie Stewart Date of Project : January 20, (April).
- Holman, R. W. (2003). *The Art of Writing Reasonable Organic Reaction Mechanisms, 2nd Edition (Grossman, Robert B.)*. *Journal of Chemical Education* (Vol. 80). <https://doi.org/10.1021/ed080p1259>
- Howard, K. (2015). Educating cultural heritage information professionals for Australia's galleries, libraries, archives and museums: A grounded Delphi study. *Office of Education Research; Faculty of Education; School of Information Systems; Science & Engineering Faculty*. retrieved from <https://eprints.qut.edu.au/85088/>
- Jan Herrington, Susan McKenney, T. C. R. and R. O. (2007). Design-based research and doctoral students: Guidelines for preparing a dissertation proposal. *EdMedia+ Innovate Learning*, (2005), 4089–4097.
- Kang, S., Phan, T., Bolas, M., & Krum, D. M. (2016). Human-Computer Interaction. Novel User Experiences, 9733, 107–118. <https://doi.org/10.1007/978-3-319-39513-5>
- Kannampallil, T. G., Abraham, J., Solotskaya, A., Philip, S. G., Lambert, B. L., Schiff, G. D., ... Galanter, W. L. (2017). Learning from errors: Analysis of medication order voiding in CPOE systems. *Journal of the American Medical Informatics Association*. <https://doi.org/10.1093/jamia/ocw187>
- Khalil, M. K., & Elkhider, I. A. (2016). Applying learning theories and instructional design models for effective instruction. *Advances in Physiology Education*. <https://doi.org/10.1152/advan.00138.2015>
- Koehler, N. A. (2012). Research-based design of interactive multimedia for solving instructional problems.
- Kryeziu, M. L. (2015). Learning from Errors. *ILIRIA International Review*. <https://doi.org/10.21113/iir.v5i1.27>
- Mach, K. J., Mastrandrea, M. D., Freeman, P. T., & Field, C. B. (2017). Unleashing expert judgment in assessment. *Global Environmental Change*. <https://doi.org/10.1016/j.gloenvcha.2017.02.005>
- Metcalf, J. (2017). Learning from Errors. <https://doi.org/10.1146/annurev-psych-010416-044022>
- Nworie, J. (2011). Using the Delphi Technique in Educational Technology Research. *TechTrends*, 55(5), 24–30. <https://doi.org/10.1007/s11528-011-0524-6>
- O'Hagan, A. (2019). Expert Knowledge Elicitation: Subjective but Scientific. *American Statistician*. <https://doi.org/10.1080/00031305.2018.1518265>
- Pawlak, M. (2014). *Error Correction in the Foreign Language Classroom*. <https://doi.org/10.1007/978-3-642-38436-3>

- Popova, M., & Bretz, S. L. (2018). Organic chemistry students' challenges with coherence formation between reactions and reaction coordinate diagrams. *Chemistry Education Research and Practice*. <https://doi.org/10.1039/c8rp00064f>
- Processing, I. (2014). Design of Delphi technique integrated with social media to make consensus based on expert s ' opinion, 1–76.
- Richey, R. C., & Klein, J. D. (2005). Developmental research methods: Creating knowledge from instructional design and development practice. *Journal of Computing in Higher Education*, 16(2), 23–38. <https://doi.org/10.1007/BF02961473>
- Rosli, R., Capraro, M. M., & Capraro, R. M. (2014). The effects of problem posing on student mathematical learning: A meta-analysis. *International Education Studies*, 7(13), 227–241. <https://doi.org/10.5539/ies.v7n13p227>
- Sadaf, A., & Johnson, B. L. (2017). Teachers' Beliefs About Integrating Digital Literacy Into Classroom Practice: An Investigation Based on the Theory of Planned Behavior. *Journal of Digital Learning in Teacher Education*. <https://doi.org/10.1080/21532974.2017.1347534>
- Schleppenbach, M., Flevares, L. M., Sims, L. M., & Perry, M. (2007). Teachers' responses to student mistakes in Chinese and US mathematics classrooms. *The elementary school journal*, 108(2), 131–147.
- Shih, J. J., Whitlock, J. B., Chimato, N., Vargas, E., Karceski, S. C., & Frank, R. D. (2017). Epilepsy treatment in adults and adolescents: Expert opinion, 2016. *Epilepsy and Behavior*. <https://doi.org/10.1016/j.yebeh.2016.11.018>
- Son, J.-W., & Sinclair, N. (2010). How Preservice Teachers Interpret and Respond to Student Geometric Errors. *School Science and Mathematics*, 110(1), 31–46. <https://doi.org/10.1111/j.1949-8594.2009.00005.x>
- Tang, A. Y. C., Zain, S. M., & Abdullah, R. (2010). Development and Evaluation of a Chemistry Educational Software for Learning Organic Reactions Using Qualitative Reasoning, 4(3).
- Tetlock, P. E. (2017a). *Expert political judgment: How good is it? How can we know?, new edition*. *Expert Political Judgment: How Good is it? How Can We Know?, New Edition*.
- Tetlock, P. E. (2017b). *Expert Political Judgment*. *Expert Political Judgment*. <https://doi.org/10.1515/9781400888818>
- Townsend, L., Hofer, A. R., Benton, L., Hanick, S. L., & Brunetti, K. (2016). Identifying threshold concepts for a Delphi study. *Communications in Information Literacy*, 10(1), 23–49. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1103398.pdf>
- Treagust, J. K. G. and D. (2013). *Multiple Repreantation in Chemical Education*. *Journal of Chemical Information and Modeling* (Vol. 53). <https://doi.org/10.1017/CBO9781107415324.004>
- Tulis, M., Steuer, G., & Dresel, M. (2016). Learning from errors : A model of individual processes, 4(2), 12–26.
- Utomo, Yuana, Narulita, Fikri & Wahono, 2018. (2018). Jurnal Pendidikan IPA Indonesia Students ' Errors In Solving Science Reasoning-Domain of Trends In International Mathematics And Science Study ( TIMSS ), 7(1), 48–53. <https://doi.org/10.15294/jpii.v7i1.11352>
- Vishnumolakala, V. R., Southam, D. C., Treagust, D. F., Mocerino, M., & Qureshi, S. (2017). Students' attitudes, self-efficacy and experiences in a modified process-oriented guided inquiry learning undergraduate chemistry classroom. *Chemistry Education Research and Practice*. <https://doi.org/10.1039/c6rp00233a>
- Weinrich, M. L., & Sevian, H. (2017a). Capturing students' abstraction while solving organic reaction mechanism problems across a semester. *Chem. Educ. Res. Pract.*, 18(1), 169–190. <https://doi.org/10.1039/C6RP00120C>
- Weinrich, M. L., & Sevian, H. (2017b). Capturing students' abstraction while solving organic reaction mechanism problems across a semester. *Chem. Educ. Res. Pract.* <https://doi.org/10.1039/C6RP00120C>
- Wenzel, T. J., & College, B. (n.d.). Using Mistakes as Learning Opportunities, 2–3.
- Zuo, W. (2017). Teachers ' Role in Dealing with Errors in Students ' Second Language Learning. *Theory and Practice in Language Studies*, 7(8), 644–650.



## The Impact of Psychosocial Classroom Learning Environment towards Higher Order Thinking Skills Ability of Secondary School Students in Accounting Studies

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### ABSTRACT

*The aim of this study is to investigate secondary school students' perceptions of their psychosocial learning environment in Accounting Studies, and whether their perceptions were related to their Higher Order Thinking Skills (HOTS) ability. A convenience sample of Secondary Four students (N = 352) studying Accounting Studies in Peninsular Malaysia participated in this research by completing a self-administered questionnaire which included the Inventory of Students' Perceived Learning Environment (ISPLE) and Higher Order Thinking Skills Test and demographic information on zone in Peninsular Malaysia. This study tries to explore the students' perception of their psychosocial learning environment, based on four dimensions, which include Learning Facilities, Constructivist-Oriented Teaching, Clear Goals and Coherence of Curricula, Student Autonomy, and Student-Student Cooperation. This study also focuses on the students' perceptions of their psychosocial learning environment in Accounting Studies between zones in Peninsular Malaysia. Data was analysed using SPSS version 21.0 in the form of mean, standard deviation and multiple regression. Analysis of the findings of this study were presented using descriptive and inferential statistics. Multiple regression analyses indicated that two of the five scales of ISLPE were predictors of higher order thinking skills ability. Clear Goals and Coherence of Curricula was the strongest predictor and was positively associated with higher order thinking skills ability and Learning Facilities was also positively related to higher order thinking skills ability. The findings of the study are also discussed with reference to developing students' higher order thinking skills ability in Accounting Studies classrooms.*

**KEYWORDS:** Psychosocial Learning Environment, Higher Order Thinking Skills, Accounting Studies, Constructivist-Oriented Teaching

### 1.0 INTRODUCTION

In response to new challenges in the twenty-first century, the Malaysian Government through Ministry of Education Malaysia, has put forth proposals to review education, such as the aims of education and the school curriculum (Ministry of Education Malaysia, 2013). With the aims to provide a quality education system at par with national level, the national education transformation is composed through the creation of education 'Blueprint' or Malaysia Educational Development Plan (MEDP) 2013-2025. MEDP 2013-2025 highlighted the important for the students to master the 21st century skills such as higher order thinking skills (Ministry of Education Malaysia, 2017). The 21st century skills that are emphasized in MEDP 2013-2025 include learning and innovation skill, information skill, media and technology, and life and career skills (Curriculum Development Department, 2016). Elements included in 21st century skills that are given the main focus within the six students' aspirations through MEDP 2013-2025 is Higher Order Thinking Skills (Curriculum Development Department, 2016). Students with 21st century skills have high marketability value as well as able to compete within the global market (Mohd Arshad & Mohd Yasin, 2015).

With the aim to release students' minds, a number of practices associated with Accounting Studies which are different from those of traditional subjects were implemented such as requiring teachers to change their pedagogies to student-centred inquiry approaches and requiring students to integrate knowledge from different disciplines. Curriculum planning principles in Accounting Studies through transformation of Critical and Creative Thinking Skills (CCTS) to Higher Order Thinking Skills (HOTS) are now focusing on providing the best of psychosocial learning environments that influence the HOTS level among student (Mohamad Yusof, 2017).

Psychosocial learning environments are believed to be important in students' learning and for stimulating their higher order thinking skills (Chen, Fan, & Jury, 2017; Vinales, 2015; Puteh, Adnan, Ibrahim, Mohamed Noh, & Che Ahmad, 2014; Rugutt, 2013; Thuen & Bru, 2009; Ali, 2008; Kock, Slegers & Voeten, 2004; Mohd Saad, 1997; Tessmer & Harris, 1992; Ramsden, 1991). Particularly in Accounting Studies, these claims have hardly been empirically investigated in the context of educational reform in Malaysia. Thus, investigating the nature of the psychosocial learning environment and the extent to which it is related to students' higher order thinking skills in this subject potentially could provide useful information for teachers and researchers. With this in mind, the current study was conceptualised with the aim of investigating:

- a) Students' perceptions of their psychosocial learning environment in Accounting Studies classroom.
- b) Differences in students' perceptions of their psychosocial learning environment in Accounting Studies classroom according to zone in Peninsular Malaysia.
- c) Associations between students' perceptions of the psychosocial learning environments in Accounting Studies classroom and their higher order thinking skills ability.

### 1.1 Conceptual Framework

The framework of this research is built based on Social Constructivist Theory pioneered by Lev Semenovich Vygotsky (1978) and known as Vygotsky's theory. Vygotsky's explained that individual cognitive development is determined by the individual's social environment, whether it supports learning or vice versa. In addition, this theory is also recognized as one of the most influential theories of cognitive development (Crowl, Kaminsky, & Podell, 1997; Vygotsky, 1978). Individual social environment is influenced by social interaction factors and social culture (Crowl et al., 1997) as shown in Figure 2.1.

In general, individual social interactions refer to the involvement of other more capable individuals and assistance from teachers towards better cognitive development. Social culture, in turn, refers to the involvement of cultural aspects and the individual's own experiences in their cognitive development (Crowl et al., 1997; Vygotsky, 1978). Thus, the interactions social and social cultural create an individual social environment that supports the best of cognitive development.



**Figure 1: Social Constructivist Theory (Vygotsky, 1978)**

Vygotsky (1978) developed an idea, when students are actively involved in the learning process through good interaction with the social environment, it can lead the transformations in their minds. This transformation of mind can be achieved while the process of communicating with the environment takes place through the construction of ideas and meaningful concepts in the individual interaction and cultural social (Hamed, Bahari, & Abdullah, 2008).

In addition, Social Constructivist Theory reflects human learning in a socio-cultural context. In this context of learning, a variety of ideas can be triggered through the sharing of students in building new knowledge. Furthermore, engaging with others will give students opportunities to evaluate and improve their knowledge. However, this theory is inadequate to explain the entire predictor of cognitive development as it only measures aspects of the learning environment as a whole in building cognitive development.

## 2.0 METHODOLOGY

This study uses a quantitative approach with descriptive survey design. Data collection was conducted using the questionnaire instrument aimed to identify the impacts of psychosocial classroom learning environment towards Higher Order Thinking Skills ability of secondary school students in accounting studies. According to Fraenkel and Wallen (2006), the use of survey studies can explain the problems that are studied in a comprehensive manner by using well-organized and neat methods. On the other hand, McMillan and Schumacher (2010) point out that survey method is a method of collecting data to describe, compare or explain knowledge, attitudes and practices. The survey method also enables the researcher to collect data directly from the subject under review and to make generalizations onto the population (Creswell, 2008). Therefore, the data collection and analysis of this survey method is using questionnaires and administered tests.

This study involved two phases of assessment. The first phase is to assess students' perceptions on the learning environment practiced by teachers and students in teaching and learning sessions at school. This study involved two phases of assessment. The first phase is to assess students' perceptions on the learning environment practiced by teachers and students in teaching and learning sessions at school. The second phase, however, is a HOTS's assessment test containing high-level questions based on the Revision's Bloom Taxonomy (Anderson and Krathwohl, 2001). This test is intended to test the mastery of accounting in accounting studies for Secondary Four students in the same sample as the first phase.

### 2.1 Participant

The population of students in Accounting Studies is 39,695 and the selection of sample was 352 of students from Accounting Studies for every Zone in Peninsular Malaysia. Target populations and populations used are two groups of populations in a study (McMillan & Schumacher, 2010). The target population for this study was all Secondary Four students who took accounting studies in Peninsular Malaysia. The population used, meanwhile, is comprised of Secondary Four students taking the accounting studies in the states of Perak, Selangor, Terengganu and Negeri Sembilan representing the North Zone, Central Zone, Southern Zone and Eastern Zone of Peninsular Malaysia.

In addition to taking into account sampling error and the assumption of normal distribution, the researchers used Cochran's (1977) formula based on the calculations proposed by Bartlett, Kotrlik and Higgins (2001) by considering large populations. The correction assumes a margin of error = .3, alpha = .5 and  $t = 1.96$  (Bartlett et al., 2001) taking into account study variables consisting of continuous data. Margin errors = .3 were selected based on general rules in determining acceptable margin errors for educational and social studies for continuous data as presented by Bartlett et al., (2001). Therefore, the sample size of this study to represent the zone is shown in Table 1.

Table 1. A number of students as samples

Region	State	Sample
North	Perak	100
Central	Selangor	124
Southern	Terengganu	70
Eastern	Negeri Sembilan	58

### 2.2 Instruments

This study used a set of questionnaire that was adapted from the Inventory of Students' Perceived Learning Environment (ISPLE) which was developed by Chen et al., (2017) and a set of higher order thinking skills test on Accounting Studies which was developed by Tan (2017) as the main instruments. Researcher have obtained the permission from the original authors via email to administer the questionnaire and the test. The instrument was translated to Malay Language and the reliability coefficient for the adapted instrument was 0.86. There were 35 items that measure the dimension of psychosocial learning environment. Likert type scale scores were used for ISPLE, ranged from strongly disagree to strongly agree. While, higher order thinking skills test was a regular and formal test in school, which had a total possible points of 100.

## 2.3 Data Analysis

This data research was analysed using descriptive analysis such as mean and standard deviation in order to investigate the students' perceptions of their psychosocial learning environment in Accounting Studies, and the differences in students' perceptions of their psychosocial learning environment in Accounting Studies according to zone in Peninsular Malaysia. Apart from that, inferential statistics in the form of multiple regression were used to investigate the associations between students' perceptions of the psychosocial learning environments in Accounting Studies and their higher order thinking skills ability.

## 3.0 RESULTS

### 3.1 Students' perceptions of their psychosocial learning environment in Accounting Studies classroom

Based on mean score in Table 2, the overall mean score for ISPLE was 4.02 ( $SD = 0.42$ ). The study found that four out of five scales in the ISPLE are at the highest level of psychosocial learning environments perception such Student-Student Cooperation ( $M = 4.20$ ,  $SD = 0.53$ ), Constructivist-Oriented Teaching ( $M = 4.17$ ,  $SD = 0.53$ ), Student Autonomy ( $M = 4.11$ ,  $SD = 0.50$ ), Clear Goals and Coherence of Curricula ( $M = 4.03$ ,  $SD = 0.50$ ), and only one scale in ISPLE show the moderate level, that is Learning Facilities ( $M = 3.60$ ,  $SD = 0.54$ ).

A total of 304 (86.36%) students found the scale of Student-Student Cooperation at the high level and 48 (13.64%) considered it moderate. While, a total of 306 (86.93%) students found the scale of Constructivist-Oriented Teaching at the high level and 44 (12.50%) considered it moderate. Next, for Student Autonomy Scale, a total of 288 (81.82%) students found at the high level and 64 (18.18%) considered it moderate. Besides, a total of 273 (77.56%) students found the scale of Clear Goals and Coherence of Curricula at the high level and 79 (22.44%) considered it moderate and a total of 144 (40.91%) students found the scale of Learning Facilities at the high level and 198 (56.25%) considered it moderate.

Table 2. Mean, Standard Deviation and Interpretation for ISLPE Scales (N = 352)

Scale	Frequency & Percentage (%)			<i>M</i>	<i>SD</i>	Interpretation
	1.00– 2.33 (Lower)	2.34 – 3.67 (Moderate)	3.68 – 5.00 (High)			
Learning Facilities	10 (2.84%)	198 (56.25%)	144 (40.91%)	3.60	0.54	Moderate
Constructivist-Oriented Teaching	2 (0.57%)	44 (12.50%)	306 (86.93%)	4.17	0.53	High
Clear Goals and Coherence of Curricula	0 (0%)	79 (22.44%)	273 (77.56%)	4.03	0.50	High
Student Autonomy	0 (0%)	64 (18.18%)	288 (81.82%)	4.11	0.50	High
Student-Student Cooperation	0 (0%)	48 (13.64%)	304 (86.36%)	4.20	0.53	High
Total Scale	0 (0%)	70 (19.89%)	282 (80.11%)	4.02	0.42	High

Source: Output SPSS

Overall, students' perception of the psychosocial learning environment in the accounting studies classroom are high. The findings show that out of the 352 students' involved in this study, 282 (80.11%) students' perceived their psychosocial learning environment at a high level and 70 (19.89%) students' perceived at a moderate level.

### 3.2 Differences in students' perceptions of their psychosocial learning environment in Accounting Studies according to zone in Peninsular Malaysia

Students' perceptions of the psychosocial learning environment in Accounting Studies classroom were analysed by zone in Peninsular Malaysia: North ( $n = 100$ ), Central ( $n = 124$ ), South ( $n = 70$ ), and East ( $n = 58$ ). Table 3 shows the output of the ANOVA analysis and whether there is a statistically significant difference between our group means. It can be seen that the significance value is 0.004 (i.e.,  $p = .004$ ), which is below 0.05. Therefore, there is a statistically significant difference in the mean of students'

perception of psychosocial learning environment in Accounting Studies classroom between zones in Peninsular Malaysia.

Table 3. Analysis of Variance for Zones in Peninsular Malaysia Difference

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.314	3	.771	4.533	.004
Within Groups	59.222	348	.170		
Total	61.536	351			

Table 4, Table 5, Table 6, Table 7 and Table 8 shows which groups differed from each other based on each scale in ISPLE.

Table 4. Means, Standard Deviations, and One-way Analyses of Variance (ANOVA) for Learning Facilities Scale for Each Zone in Peninsular Malaysia.

Variables	North (1)		Central (2)		South (3)		East (4)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Learning Facilities	3.61	0.49	3.56	0.53	3.61	0.72	3.67	0.36
<b>Sig.</b>								
North (1)	-		0.884		1.000		0.907	
Central (2)	-		-		0.934		0.553	
South (3)	-		-		-		0.905	
East (4)	-		-		-		-	

Table 4 show the result on Learning Facilities scale for each zone in Peninsular Malaysia. There were no differences between the students' perception on Learning Facilities in Accounting Studies classroom for North and Central ( $p = 0.884$ ), North and South ( $p = 1.000$ ), North and East ( $p = 0.907$ ), Central and South ( $p = 0.934$ ), Central and East ( $p = 0.553$ ), and South and East ( $p = 0.905$ ).

Table 5. Means, Standard Deviations, and One-way Analyses of Variance (ANOVA) for Constructivist-Oriented Teaching Scale for Each Zone in Peninsular Malaysia.

Variables	North (1)		Central (2)		South (3)		East (4)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Constructivist-Oriented Teaching	4.20	0.50	4.10	0.56	4.26	0.63	4.20	0.37
<b>Sig.</b>								
North (1)	-		0.391		0.928		1.000	
Central (2)	-		-		0.169		0.614	
South (3)	-		-		-		0.919	
East (4)	-		-		-		-	

Table 5 show the result on Constructivist-Oriented Teaching scale for each zone in Peninsular Malaysia. There were no differences between the students' perception on Constructivist-Oriented Teaching in Accounting Studies classroom for North and Central ( $p = 0.391$ ), North and South ( $p = 0.928$ ), North and East ( $p = 1.000$ ), Central and South ( $p = 0.169$ ), Central and East ( $p = 0.614$ ), and South and East ( $p = 0.919$ ).

Table 6. Means, Standard Deviations, and One-way Analyses of Variance (ANOVA) for Clear Goals and Coherence of Curricula Scale for Each Zone in Peninsular Malaysia.

Variables	North (1)		Central (2)		South (3)		East (4)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Clear Goals and Coherence of Curricula	4.02	0.45	3.90	0.47	4.25	0.62	4.03	0.42
<b>Sig.</b>								
North (1)	-		0.217		0.016		1.000	
Central (2)	-		-		0.000		0.309	
South (3)	-		-		-		0.058	
East (4)	-		-		-		-	

Table 6 show the result on Clear Goals and Coherence of Curricula scale for each zone in Peninsular Malaysia. It can be seen from the table above that there is a statistically significant difference in the students' perception on Clear Goals and Coherence of Curricula in Accounting Studies classroom for North and South ( $p = 0.016$ ) and Central and South ( $p = 0.000$ ). However, there were no differences between the students' perception on Clear Goals and Coherence of Curricula in Accounting Studies classroom for North and Central ( $p = 0.217$ ), North and East ( $p = 1.000$ ), Central and East ( $p = 0.309$ ), and South and East ( $p = 0.058$ ).

Besides, Table 7 show the result on Student Autonomy scale for each zone in Peninsular Malaysia. It can be seen from the table below that there is a statistically significant difference in the students' perception on Student Autonomy in Accounting Studies classroom for Central and South ( $p = 0.006$ ). However, there were no differences between the students' perception on Student Autonomy in Accounting Studies classroom for North and Central ( $p = 0.057$ ), North and South ( $p = 0.769$ ), North and East ( $p = 0.816$ ), Central and East ( $p = 0.610$ ), and South and East ( $p = 0.345$ ).

Table 7. Means, Standard Deviations, and One-way Analyses of Variance (ANOVA) for Student Autonomy Scale for Each Zone in Peninsular Malaysia.

Variables	North (1)		Central (2)		South (3)		East (4)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Student Autonomy	4.16	0.44	4.00	0.49	4.24	0.61	4.09	0.43
<b>Sig.</b>								
North (1)	-		0.057		0.769		0.816	
Central (2)	-		-		0.006		0.610	
South (3)	-		-		-		0.345	
East (4)	-		-		-		-	

Table 8. Means, Standard Deviations, and One-way Analyses of Variance (ANOVA) for Student-Student Cooperation Scale for Each Zone in Peninsular Malaysia.

Variables	North (1)		Central (2)		South (3)		East (4)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Student-Student Cooperation	4.16	0.49	4.09	0.52	4.40	0.61	4.26	0.43
<b>Sig.</b>								
North (1)	-		0.772		0.016		0.637	
Central (2)	-		-		0.001		0.175	
South (3)	-		-		-		0.431	
East (4)	-		-		-		-	

Next, Table 8 show the result on Student-Student Cooperation scale for each zone in Peninsular Malaysia. It can be seen from the table above that there is a statistically significant difference in the students' perception on Student-Student Cooperation in Accounting Studies classroom for Central and South ( $p = 0.016$ ) and Central and South ( $p = 0.001$ ). However, there were no differences between the students' perception on Student-Student Cooperation in Accounting Studies classroom for North and Central ( $p = 0.772$ ), North and East ( $p = 0.637$ ), Central and East ( $p = 0.175$ ), and South and East ( $p = 0.431$ ).

### 3.3 Associations between students' perceptions of the psychosocial learning environments in Accounting Studies and their higher order thinking skills ability.

The total mean score of participants' higher order thinking skills ability was 60.10 ( $SD = 15.26$ ). With the highest possible score being 92, a mean of 60.10 was above the mid-point and suggested that the respondents had a moderate level of higher order thinking skills ability. Pearson correlations were calculated to examine the bivariate relationships among the psychosocial learning environment scales and higher order thinking skills ability. As shown in Table 9, higher order thinking skills ability was significantly associated with all five scales of ISPLE. The scales of Learning Facilities ( $r = 0.21$ ,  $p < 0.05$ ), Constructivist-Oriented Teaching ( $r = 0.17$ ,  $p < 0.05$ ), Clear Goals and Coherence of Curricula ( $r = 0.26$ ,  $p$

< 0.05), Student Autonomy ( $r = 0.23$ ,  $p < 0.05$ ), and Student-Student Cooperation ( $r = 0.19$ ,  $p < 0.05$ ) were related to Higher Order Thinking Skills ability positively.

The collinearity (tolerance) statistics were examined to check the possibility of multicollinearity between the predictor variables before conducting multiple regression using the scales of ISPLE. Stern (2008) explained tolerance as the proportion of variance that an independent variable does not have in common with other independent variables. When a variable's tolerance value is < 0.10, its mean the problem of multicollinearity exists. Tolerance values for this study ranged from 0.29 to 0.68, which are > 0.10. Hence, the results showed that multicollinearity was not a problem in this study.

As shown in Table 9, multiple regression was used to assess how well the ISPLE scales predicted students' Higher Order Thinking Skills ability. The F ratio demonstrated that the linear combination of the ISPLE scales was significantly related to participants' Higher Order Thinking Skills ability. Concerning the standard regression coefficients for each of the ISPLE scales, two scales were significant independent predictors of Higher Order Thinking Skills ability. The strongest independent predictor was Clear Goals and Coherence of Curricula ( $b = 0.25$ ,  $p < 0.05$ ) in a positive direction. Learning Facilities ( $b = 0.11$ ,  $p < 0.05$ ) was also independent predictors of Higher Order Thinking Skills ability. Constructivist-Oriented Teaching, Student Autonomy, and Student-Student Cooperation had no effect on Higher Order Thinking Skills ability. According to Kline (2011), a value of  $R^2$  of about 0.10 represents a medium effect size. The hypothesised model of five variables accounted for 10 % of variance of Higher Order Thinking Skills ability, suggesting a borderline medium effect size (because 10 % is located at the lower end of the range).

Table 9: Correlation and Multiple Regression Analyses for Associations between Psychosocial Learning Environments and Higher Order Thinking Skills Ability

ISPLE Scale	Associations with Higher Order Thinking Skills Ability			
	<i>r</i>	$\beta$	SE	<i>p</i>
Learning Facilities	0.21	0.11	1.68	0.04
Constructivist-Oriented Teaching	0.17	-0.09	2.43	0.18
Clear Goals and Coherence of Curricula	0.16	0.25	2.65	0.01
Student Autonomy	0.23	0.09	2.81	0.35
Student-Student Cooperation	0.19	0.02	2.02	0.81
<i>F</i>		9.517		
<i>Df</i>		378		
Adjusted $R^2$		0.101		

#### 4.0 CONCLUSION

The present study has contributed to the literature by exploring secondary school students' perceptions of their psychosocial learning environment in Accounting Studies, a subject which is undergoing education reform in the Malaysia education system. The study also investigated associations between psychosocial learning environments and Higher Order Thinking Skills ability using the ISPLE and Higher Order Thinking Skills Test, which were rarely included in previous research in the field. The study demonstrated that (1) students perceived their psychosocial learning environment in Accounting Studies is in high level and in a good condition; (2) there is a statistically significant difference in the mean of students' perception of psychosocial learning environment in Accounting Studies classroom between zones in Peninsular Malaysia; (3) Clear Goals and Coherence of Curricula and Learning Facilities from the ISPLE were significant independent predictors of Higher Order Thinking Skills ability and (4) the five scales of ISPLE accounted for a borderline medium amount of variance in Higher Order Thinking Skills ability, indicating that psychosocial learning environments could be beneficial to Higher Order Thinking ability.

This study added further understanding about which dimensions of psychosocial learning environments are important to Higher Order Thinking Skills ability, revealing that not all dimensions are helpful. It provided empirical data to validate theoretical discussions about relations between psychosocial learning environments and Higher Order Thinking Skills ability. Finally, the findings of this study can inform those teaching Accounting Studies in Malaysia, because developing Higher Order Thinking Skills ability via focusing on the psychosocial learning environment can lead the better achievement in the delivery of this school subject.

## 5.0 ACKNOWLEDGEMENT

The researchers like to acknowledge the University Putra Malaysia for the financial funding of this paper through “Geran – Putra IPS” UPM (GP-IPS/2018/9608800), for Research University Grant (RUG).

## REFERENCES

- Ali, K. (2008). Korelasi antara Strategi Pembelajaran, Persekitaran Pembelajaran dan Kemahiran Berbahasa Inggeris dengan Pencapaian Kimia, Tesis Doktor Falsafah, Universiti Kebangsaan Malaysia.
- Chen, C., Fan, J., & Jury, M. (2017). Are Perceived Learning Environments Related to Subjective Well-Being? A Visit to University Students. *Learning and Individual Differences*, 54, 226–233. <https://doi.org/10.1016/j.lindif.2017.01.001>
- Creswell, J. W. (2008). *Educational research: Planning, conducting and evaluating quantitative and qualitative research*. (3rd edition). University of Nebraska: Pearson Educational International.
- Curriculum Development Department. (2016). *Buku Penerangan Kurikulum Standard Sekolah Menengah (KSSM)*. Putrajaya: Kementerian Pendidikan Malaysia.
- Fraenkel, J. R. & Wallen, N. E. (2006). *How to Design and Evaluate Research in Introduction to Theory and Research*. Reading, MA: Addison-Wesley.
- Hamed, S., Bahari, P., & Abdullah, A. G. K. (2008). Korelasi antara Persekitaran Pembelajaran Matematik, Sikap Pelajar Terhadap Matematik dan Pencapaian Pelajar Dalam Matematik: Satu Kajian Kes. *ESTEEM Academic Journal UiTM Pulau Pinang*. Volume 4, No. 2. Creswell, 2008
- Kline, R. B. (2011). *Principles and Practice of Structural Equation Modelling*. 3rd edition. New York: The Guilford Press.
- Kock, A. D., Slegers, P., & Voeten, M. J. M. (2004). New Learning and the Classification of Learning Environments in Secondary Education. *Review of Educational Research*, Vol. 74, No. 2, pp. 141–170. <https://doi.org/10.3102/00346543074002141>.
- McMillan, J. H. & Shumacher, S. (2010). *Research in Education: Evidence-Based Inquiry*. 7th Edition. Upper Saddle River, New Jersey: Pearson Education Inc.
- Ministry of Education (2013). *Pelan Pembangunan Pendidikan Malaysia 2013-2025 (Pendidikan Prasekolah hingga Lepas Menengah)*. Putrajaya: KPM.
- Ministry of Education (2017). *Laporan Tahunan 2016 (Pelan Pembangunan Pendidikan Malaysia 2013-2025)*. Putrajaya: Kementerian Pendidikan Malaysia. Retrieved from <http://www.moe.gov.my>
- Mohamad Yusof, K. (2017). *Laporan Tahunan 2016 (Pelan Pembangunan Pendidikan Malaysia 2013-2025)*. Putrajaya: Kementerian Pendidikan Malaysia. Retrieved from <http://www.moe.gov.my>
- Mohd Arshad, A. Y., & Mohd Yasin, R. (2015). Kemahiran Berfikir Aras Tinggi murid dalam Konteks Penyelesaian Masalah bagi Mata Pelajaran Sains. *Asian Education Action Research Journal*, 4, 81–96.
- Mohd Saad, B. (1997). Korelasi Antara Persekitaran Pembelajaran dengan Pendekatan Pembelajaran dengan Pencapaian Ekonomi STPM. Tesis Sarjana Pendidikan: Universiti Kebangsaan Malaysia.
- Puteh, M., Adnan, M., Ibrahim, M. H., Mohamed Noh, N., & Che Ahmad, C. N., (2014). An Analysis of Comfortable Teaching and Learning Environment : Community Response to Climate Change in School. *Procedia - Social and Behavioral Sciences*, 116, 285–290. <https://doi.org/10.1016/j.sbspro.2014.01.209> Rugutt, 2013;
- Ramsden, P. (1991). *A Performance Indicator of Teaching Quality in Higher Education: The Course Experience*. Cowl, Kaminsky, & Podell, 1997; Vygotsky, 1978.
- Tan, S. L. (2017). *Modul Aktiviti – Fokus KBAT SPM Prinsip Perakaunan*. Petaling Jaya : Sasbadi Sdn Bhd.
- Tessmer, M., & Harris, D. (1992). *Analyzing the Instructional Setting: Environmental Analysis*. London/Bristol, PA: Kogan Page/Taylor and Francis.
- Thuen, E., & Bru, E. (2009). Are Changes in Students' Perceptions of the Learning Environment Related to Changes in Emotional and Behavioral Problems? *School Psychology International* 30 (2), 115 – 136.
- Vinales, J. J. (2015). *Learning Styles : A Guide for Mentors*. *British Journal of Nursing*, 24 (8), 454–457.



## Promoting PhET Simulation on Online Learning to Enhance Critical Thinking Skills

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### ABSTRACT

*Current learning encourages students to have excellent critical thinking skills (CTS). Teachers try to apply various learning strategies and appropriate learning media in order to facilitate students on achieving competencies. Internet-based technology has an essential role as a learning management system, learning apparatus, and simulation for certain phenomena in this effort. This study examined the level of success of learning that utilizes the learning management system (Schoology) using the hypothetical-deductive strategy enriched PhET Simulation on improving CTS. The hypothetical-deductive learning approach is one of the appropriate approaches. This application has a variety of simulations to explain concepts and theories. It is also interactive and exciting. Integrated learning and simulation approach in blended learning will be one of the alternatives for the needs of today's students. The research design used was quasi-experimental with pre-test post-test one-group design. The subject matter used in science learning is Work and Energy for 10th-grade students. In learning, online interactions are carried out using Schoology as a learning management system. Learning activities are independent learning activities online. The online learning steps covering reading Work and Energy material, conducting experiments using PhET Simulation, repeating experiments on several different variables and observing changes, analysing and discussing results in forums, and drawing conclusions. The number of students as a sample taught using this learning model is 24 students. The instrument to measure CTS is four essay questions in the form of non-routine problems (C4: Analysis). The maximum rating scale is 25 for each problem that is graded based on assessment rubrics. The results of the analysis using paired sample T-test (2-tailed with  $\alpha = 0.05$ ) showed that there was a significant increase in CTS from before (53.04) to (76.83). This result indicates the influence of this learning model on CTS and implies that there are significant opportunities and optimism in science learning utilizing technology.*

**KEYWORDS:** Blended learning, simulation, hypothetical-deductive, learning strategy, critical thinking

### 1.0 INTRODUCTION

The learning process identifies the occurrence of teaching activities conducted by educators and learning activities carried out by students. In various countries today, science learning in the 21st century is carried out with a scientific approach supported by national education policy as well as in Indonesia. With this approach, various new skills can be mastered by students to achieve the expected competencies (Kivunja, 2014). One of the characteristics of the 21st-century learning era where students can study independently, whenever, wherever, and with any method or media. Three essential concepts of 21st-century education are new skills, scientific approach, and authentic assessment (Dwyer, Hogan & Stewart, 2014; Sulisworo & Suryani, 2014).

The education system in Indonesia, represented by educators has problems that are always a serious concern by education experts (Sulisworo, Nasir & Maryani, 2017). In the results of the study, at least three educator problems faced by Indonesia, namely teacher quality, teacher welfare, and teacher politicization.

These three problems significantly affect the performance and quality of education. Global competition in 21st-century learning requires an educator to have more quality not only to compete in the scope of Indonesian education but outside the scope of ASEAN countries. Therefore education in Indonesia requires learning that can make progress (Sulisworo, 2016). The learning process identifies the occurrence of teaching activities conducted by educators and learning activities carried out by students.

In blended learning, students are always expected to be active and can find appropriate learning methods for themselves. Also, the teacher only functions as a mediator, facilitator, and friend that will make the situation conducive to the construction of knowledge in students. The main thing is also said that blended learning will strengthen traditional learning through the development of educational technology and can influence learning outcomes after applying it (Sulisworo, Agustin & Sudarmiyati, 2016). The definition of blended learning continues to develop, along with the development of information and communication technology (Schober & Keller, 2012; Donnelly, 2010). The definition of blended learning leads to maximum utilization of face-to-face learning with online learning (Delialioğlu, 2012; Akkoyunlu & Soyulu, 2008). The implication of applying blended learning to institutions is the need to prepare appropriate policies, plans, resources, and support (Poon, 2013). In many studies, blended learning is as useful, fun, supportive, flexible, and motivating for students (Akkoyunlu & Soyulu, 2008; Delialioğlu, 2012). If blended learning is seen only as of the integration of an application system, then this is not enough to create a thriving learning atmosphere (Schober & Keller, 2012). In order to create a positive learning environment, educators must be able to encourage students to participate more (Donnelly, 2010) in learning activities and must find ways to enable more cooperative social interaction (Liu & Hwang, 2010; Delialioğlu, 2012). So there needs to be a mature learning plan to be able to balance face-to-face activities and the online learning environment (Akkoyunlu & Soyulu, 2008; Donnelly, 2010). In the current situation, mobile technology development has been dominated by tablets, smartphones, and touchscreen devices for various interests. Blended learning becomes a new alternative for improving student learning activities at school. Integration of cooperative learning in the online learning environment will result in new ways of blended learning (Yen & Lee, 2011; Liu & Hwang, 2010). Blended learning allows students to be better able to learn better (Akkoyunlu & Soyulu, 2008; Yen & Lee, 2011).

STEM Education (Science, Technology, Engineering, and Mathematics) provides opportunities for teachers to show students about the concepts, principles, and techniques of STEM used in an integrated manner. STEM skills are critical in the development of products, processes, and systems used in everyday life (Brun & Hinostroza, 2014). This activity is in line with the learning of hypothetical-deductive thinking (Irzik & Nola, 2011). The process of learning continues to experience renewal in the realm of the current education system. Its phases are following its implementation in teaching students in STEM learning in physics learning secondary school. The reality is that physics learning in the field of students still stakes lessons that are not interesting and difficult to understand. Many factors are behind this; one of them is lack of motivation, initial interest, and knowledge of students and lack of variation in their implementation.

The appropriate media is applied to foster motivation, interest, and knowledge and also to help to reach learning achievement. Critical thinking only intentionally and systematically processes information so that it can make better decisions and generally understand things with better. Critical thinking requires applying a variety of intellectual tools to a variety of information (Abdeen, 2014). Critical thinking about information includes conceptualization, analysis, synthesis, and evaluation. That information can come from sources such as observation, experience, reflection, thinking, or communication (Garrison, Anderson & Archer, 2001). With these things, students are expected to be able to grow their beliefs and actions that are good in everyday life. So that students will automatically think of various activities. When students think critically, then students will deliberately use the intellectual tools above to reach conclusions that are more accurate than those automatically carried out by the brain. Five critical thinking skills are essential to be improved, namely: analytical, communication, creativity, clear thinking, and problem-solving (Heng & Ziguang, 2015; Jou, Lin & Wu, 2016).

UNESCO provides a virtual laboratory definition is an electronic workspace for distance collaboration and experimentation in research or other creative activity to generate and deliver results using distributable information and communications technologies (Perkins, Adams, Dubson, Finkelstein, Reid, Wieman & LeMaster, 2006). One of the widely used virtual laboratories in learning is PhET simulation. PhET is an interactive simulation of physical phenomena based on free research. PhET was developed by the University of Colorado Boulder with the help of funds from many donations so that it can be accessed for free. PhET simulations are developed with research so that all simulations are following the real-life

and the concepts. PhET simulations are available free of charge and can be downloaded at [HTTP://www.phet.colorado.edu](http://www.phet.colorado.edu). Learning by using the help of PhET media is one of the computational media that provides physics animations used in the form of blogs. PhET Simulations can display abstract content and explain quickly and precisely to students (Moore, Chamberlain, Parson & Perkins, 2014). With this in mind, this study aims to apply a hypothetical-deductive approach to blended learning based on PhET Simulation. The results of the application of this concept are expected to foster students' motivation, interests, and knowledge of physics learning and critical thinking skills.

## 2.0 METHOD

### 2.1 Research Context

This research is necessary for the form of information and communication technology-based learning model development. The model developed was validated by learning technology experts, physics material experts, and teachers. The small groups as the model trail were the tenth-grade students. The trial of the effectiveness of the learning model was done by quasi-experiment on one group (pretest-posttest one group design). The independent variable in this study was the physics learning strategy using PhET simulation. Learning used in this research was blended learning. The dependent variable of this research was critical thinking skills (CTS). In learning, students were taught through blended learning using hypothetical deductive thinking with the STEM education approach. The learning management system used in this research was Schoology. This research used non-randomized sampling technique. We used one class consisting 24 tenth-grade student as the group to be taught using this learning strategy. The paired-sample T-test analyzed the research hypothesis according to the research design. Based on the statistical analysis, we calculated the effect of the learning model on CTS.

### 2.2 Critical Thinking Skills Rubrics

The instrument to measure critical thinking skills was a test in the essay questions (four problems) with a C4 level (analysis). Therefore the maximum score was 100 points referred to the score rubrics (25 points for each problem). The type of the essay problems was non-routine problem type. This question has previously been tested for its feasibility in terms of item validity, level of difficulty, and determination index.

### 2.3 PhET Simulation

The research instruments were based on the phases of hypothetical-deductive. PhET simulation is a virtual lab. There is an application in physics learning on the subject matter of Work and Energy using the ramp or inclined plane (see Figure 1). In simulating of the ramp, students can experiment to find out the concepts of work, energy, potential energy, kinetic energy independently or in groups of students. Using this simulation, the student experienced to use different objects and may draw the proper conceptual understanding, especially on Work and Energy. The variable in this simulation is the objects characteristics and the ramp angle. Students may change the object to find out their effect. The teacher provides the student sheet to guide the activity. In this sheet, students experience on individual objects, and the slope angle is changed to see the effect on work and energy.

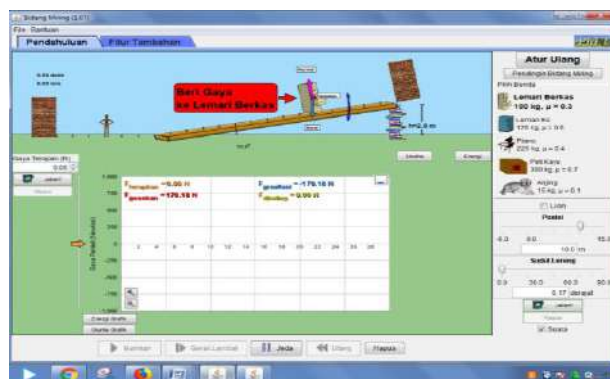


Figure 1: Ramp simulation

## 2.4 Learning Activities

The online learning steps cover reading the lesson of Work and Energy, conducting experiments using PhET Simulation, repeating experiments on several different variables and observing changes, analyzing and discussing results in forums, and making conclusions.

## 3.0 RESULT

Descriptive data of the pre-test and post-test results are shown in Table 1.

Table 1. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Paired	PreTest	53.0417	24	9.81782	2.00405
	PostTest	76.8333	24	11.72758	2.39388

From Table 2, the average CTS score during the post-test (76.83) is higher than during the pre-test (53.04). The magnitude of the score for each respondent seems to be diffused, which is indicated in the post-test standard deviation (11.72), which is higher than the pre-test (9.82).

Researchers used paired T-test to find out the influence of the learning model. Table 2 shows the results of the paired T-test (2-tailed with  $\alpha = 0.05$ ).

Table 2. Paired Samples Test

Paired	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
PreTest - PostTest	-23.791	11.665	2.381	-28.717	-18.865	-9.991	23	.000

Based on Table 2, the t score is -9.99 (with p-value  $< 0.05$ ). It shows that there is an influence of learning towards critical thinking skills. Since the all significance level is less than 0.05, the null hypothesis is rejected. It means physics learning by using this learning strategy is effective to improve the CTS.

## 4.0 DISCUSSION

This research in the application of learning with a hypothetical deductive strategy assisted by PhET Simulation in tenth grade, the student's pre-test score was 53.04, and the post-test score was 76.83. In this study, CTS was measured using non-routine problems with a level of C4 (analysis) ability. Based on statistical analysis, the application of physics learning using PhET Simulation can improve CTS. Paired sample T-test shows the effectiveness of physics learning strategies. In this study, students are more active, as evidenced by daily evaluations during learning. Also, researchers explored the impact of hypothetical-deductive learning strategies and simultaneous PhET simulations, so it is not yet sure how the effects of each of these factors will increase CTS.

Other research also shows that there are many indicators of learning performance and many strategies for achieving them. In general, the findings of this study show the same results from previous studies especially on critical thinking skills (Gottschalk, 2018; Rahmah, 2017). Most students have positive learning experiences using deductive thinking learning towards critical thinking skills. Although students have many obstacles during learning, hypothetical-deductive learning strategies can make students more active in solving problems. The interactive media (PhET Simulation) tent to enhance student's learning interest (Astutik & Prahani, 2018). This finding shows the particular impact of the hypothetical-deductive learning strategy using interactive media on the CTS in physics learning. It contributes to extend the opportunity that interactive media can be used to improve not only the learning interest but also CTS.

Hypothetical-deductive thinking plays an essential role in scientific studies for educational innovation. Learning in PhET has been proposed by Perkins et al. (2013), which states a PhET simulation to manage a school environment that is conducive to forming thinking patterns. Students can combine prior

knowledge and virtual experience using simulations for better abilities. Learning to use PhET Simulation can also be a fun and varied learning in science learning (Astutik & Prahani, 2018; Moore & Perkins; 2018). The learning management system (LMS) used during research also give the influence to the learning performance (Brun & Hinostroza, 2014). Schoology as LMS has many features that confort for students especially on social media mode. These activities promote the student active online learning (Steffens, 2015). Positive impact of this learning model will support the teacher beliefs on using ICT for student activities as mention in other studies (Ertmer, Ottenbreit-Leftwich & Tondeur, 2014; Garrison et al., 2001). There are two aspects of the research finding contribution. First, the used of particular LMS that related to the students' daily activities (social media mode) provide the positive learning environment. Second, the hypothetical-deductive learning strategy using interactive media can improve the CTS in physics learning.

## 5.0 CONCLUSION

There are three learning factors integrated into this science learning model, namely: hypothetical-deductive approach, PhET simulation, and Schoology as a learning management system. Blended learning design concerning these three things shows the results on improving CTS. A more in-depth analysis and study of these three factors need to be carried out in order to obtain a better understanding of each other's influence on CTS. Good results in applying this model provide new opportunities and optimism for educators for the application of online learning using a variety of supporting technology. The practical implications of this research, when teachers will implement online learning, teachers need to consider the type of LMS. Feature LMS that is suitable for students' daily activities will provide a positive learning environment so that they will be better able to support the achievement of learning outcomes. The contribution of this research to knowledge is that learning with the help of interactive media can not only increase interest but can also increase CTS when integrated with hypothetical deductive learning strategies. The application of this strategy to schools will encounter obstacles when teachers and students do not yet have sufficient technological literacy. For this reason, it is necessary to have an education management policy on increasing literacy. This situation occurred at the time of research, and researchers need to provide initial assistance for teachers and students in implementing this learning strategy.

## ACKNOWLEDGMENT

This research was funded by the Ministry of Research, Technology, and the Higher Education Republic of Indonesia through Postgraduate Grant Year 2019.

## REFERENCES

- Abdeen, S. A. (2014). The Theory of Concurrent Thinking. *Life Science Journal*, 11(12), 1004-1007.
- Akkoyunlu, B., & Yilmaz-Soylu, M. (2008). A study of student's perceptions in a blended learning environment based on different learning styles. *Educational Technology & Society*, 11(1), 183-193.
- Astutik, S., & Prahani, B. K. (2018). The Practicality and Effectiveness of Collaborative Creativity Learning (CCL) Model by Using PhET Simulation to Increase Students' Scientific Creativity. *International Journal of Instruction*, 11(4), 409-424.
- Brun, M., & Hinostroza, J. E. (2014). Learning to become a teacher in the 21st century: ICT integration in Initial Teacher Education in Chile. *Educational Technology & Society*, 17(3), 222-238.
- Delialioglu, Ö. (2012). Student engagement in blended learning environments with lecture-based and problem-based instructional approaches. *Journal of Educational Technology & Society*, 15(3), 310-315.
- Donnelly, R. (2010). Harmonizing technology with interaction in blended problem-based learning. *Computers & Education*, 54(2), 350-359.
- Dwyer, C. P., Hogan, M. J., & Stewart, I. (2014). An integrated critical thinking framework for the 21st century. *Thinking Skills and Creativity*, 12, 43-52.

- Ertmer, P. A., Ottenbreit-Leftwich, A. T., & Tondeur, J. (2014). Teachers' beliefs and uses of technology to support 21st-century teaching and learning. *International handbook of research on teacher beliefs*, 403.
- Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence, and computer conferencing in distance education. *American Journal of distance education*, 15(1), 7-23.
- Gottschalk, C. M. C., (2018). Teaching critical thinking: The struggle against dogmatism. *Educational Philosophy and Theory*, 50(5), 469-477.
- Heng, C. S., & Ziguang, Y. (2015). Framework of Assessment for the Evaluation of Thinking Skills of Tertiary Level Students. *Advances in Language and Literary Studies*, 6(5), 67-72.
- Irzik, G., & Nola, R. (2011). A family resemblance approach to the nature of science for science education. *Science & Education*, 20(7-8), 591-607.
- Jou, M., Lin, Y. T. & Wu, D. W. (2016). Effect of a blended learning environment on student critical thinking and knowledge transformation. *Interactive Learning Environments*, 24(6), 1131-1147.
- Kivunja, C. (2014). Do You Want Your Students to Be Job-Ready with 21st Century Skills? Change Pedagogies: A Pedagogical Paradigm Shift from Vygotskyian Social Constructivism to Critical Thinking, Problem Solving and Siemens' Digital Connectivism. *International Journal of Higher Education*, 3(3), 81-91.
- Liu, G. Z., & Hwang, G. J. (2010). A key step to understanding paradigm shifts in e-learning: towards context-aware ubiquitous learning. *British Journal of Educational Technology*, 41(2), E1-E9.
- Moore, E. B., & Perkins, K. K., (2018). Advances in PhET interactive simulations: Interoperable and accessible. *Cyber-Physical Laboratories in Engineering and Science Education*, 141-162.
- Moore, E. B., Chamberlain, J. M., Parson, R., & Perkins, K. K. (2014). PhET interactive simulations: Transformative tools for teaching chemistry. *Journal of Chemical Education*, 91(8), 1191-1197.
- Perkins, K., Adams, W., Dubson, M., Finkelstein, N., Reid, S., Wieman, C., & LeMaster, R. (2006). PhET: Interactive simulations for teaching and learning physics. *The physics teacher*, 44(1), 18-23.
- Poon, J. (2013). Blended learning: An institutional approach for enhancing students' learning experiences. *Journal of online learning and teaching*, 9(2), 271-288.
- Rahmah, M.A., (2017). Inductive-Deductive Approach to Improve Mathematical Problem Solving for Junior High School. In *Journal of Physics: Conference Series* (Vol. 812, No. 1, p. 012089). IOP Publishing.
- Schober, A., & Keller, L. (2012). Impact factors for learner motivation in Blended Learning environments. *International Journal of Emerging Technologies in Learning (iJET)*, 7(2012).
- Steffens, K. (2015). Competences, Learning Theories and MOOC s: Recent Developments in Lifelong Learning. *European Journal of Education*, 50(1), 41-59.
- Sulisworo, D. (2016). The Contribution of the Education System Quality to Improve the Nation's Competitiveness in Indonesia. *Journal of Education and Learning*, 10(2). 127- 138.
- Sulisworo, D., & Suryani, F. (2014). The Effect of Cooperative Learning, Motivation, and Information Technology Literacy to Achievement. *International Journal of Learning and Development*, 4(2), 58-64.
- Sulisworo, D., Agustin, S. P., & Sudarmiyati, E. (2016). Cooperative-blended learning using Moodle as an open-source learning platform. *International Journal of Technology Enhanced Learning*, 8(2), 187-198.
- Sulisworo, D., Nasir, R., & Maryani, I. (2017). Identification of teachers' problems in Indonesia on facing the global community. *International Journal of Research Studies in Education*, 6(2), 81- 90.
- Yen, J. C., & Lee, C. Y. (2011). Exploring problem-solving patterns and their impact on learning achievement in a blended learning environment. *Computers & Education*, 56(1), 138-145.

## Friends and Parent's Role in Undergraduates' Career Choice Intentions: The Moderating Effect of Gender

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### ABSTRACT

*The underrepresentation of graduates in science, technology, engineering and mathematics (STEM) fields has become a matter of grave concerns for many governments around the world, especially Malaysia, as STEM education is the key to economic progress. The aim of this study is to identify the influence of friends and parents on undergraduate students' career choices and how these relationships is moderated by gender. For the purpose of this study, data were obtained with the use of structured questionnaires which were administered to 242 final year undergraduate students within STEM disciplines. The analysis revealed that continuous information sharing and support from friends ( $\beta=0.372$ ,  $p<0.01$ ) and parents ( $\beta=0.271$ ,  $p<0.01$ ) have a positive impact on students' interest in STEM careers. Besides that, the link between friends, parents and undergraduates' STEM career intention were not moderated by gender. Results from this research can be useful for education policy-makers, HRD practitioners and carry valuable information for further research in education and career planning.*

**KEYWORDS:** Parental Influence, Friends influence, STEM careers, Undergraduate, Intention.

## 1.0 INTRODUCTION

Technology is continuously expanding, and thus, Science, Technology, Engineering and Mathematics (STEM) education is important in all facets of our lives. For instance, weather can be predicted by technology even more precise forecasts. Technology has also transformed the education landscape; educational mobile apps (i.e. Science and Technology invention) including E-Books and E-library provide easy access to quality educational materials, enhancing the experience of learning and teaching thus improving the lives of educationists and students. In addition, most of the top paying jobs are in STEM-related fields (e.g., engineers, doctors and other technical professionals); as cited by Lim (2018), STEM employees can earn up to RM18,000 per month based on the 2017 Salary Report by JobStreet.com. Amidst the fast-growing STEM industries and a relatively rapid growth in employment and wages in STEM-related fields, there is a declining interest in STEM occupation choices among the Malaysian undergraduates. The National Science and Technology Enrolment Policy ratio target of 60:40 which guaranteed more STEM programs enrolment at tertiary level has not been achieved, leading to a worrying shortfall of workers possessing the skills used in STEM (Aina & Zafira, 2016). Malaysia's science and technology sector is projected to yield nearly one million jobs openings by 2020 (Aina & Zafira, 2016). If these vacancies remain unfilled, Malaysia need to be prepared to face the challenge of a serious STEM skill and talent shortage (e.g. architects, engineers and science related professionals), and thus fail to achieve an innovation-centric economy with a balanced development of socio-economic dimensions (Rozana, 2018).

Hence, this study aims at examining the factors that influence undergraduates' STEM career intention, specifically, to examine the role of parents and friends in influencing undergraduates' STEM career intention and determine the moderation effects of gender (i.e. male and female) on the link between independent (i.e. parental and friends influence) and dependent (i.e. STEM career intention) variables. The findings would be beneficial for parents, educationist and HRD practitioners to make relevant programs and information (e.g. summer camps, industrial training, career counselling etc.) available to help improve career access and chances in STEM industries.

## 2.0 LITERATURE REVIEW

### 2.1 STEM Career Intention

STEM careers can be defined as jobs where STEM workers use their knowledge of STEM to understand how the world works and to solve problems (Vilorio, 2014). STEM careers namely computer network architects, animal scientists, biomedical engineers and web developers often involve the use of computers and other tools (Vilorio, 2014). Meanwhile, STEM career intention can be defined as an individual's inclination and preference to choose a career in STEM fields (Broadbridge & Parsons, 2005), giving priority to one occupation (e.g., STEM) over another (Ozbilgin, Kusku, Erdogmus, 2005). In a similar vein, Gokuladas (2010) posited that STEM career choice intention is the self-assessment of one's capabilities and competencies and the evaluation of other career options to effectively match one's needs to the preferred career choice (i.e. STEM).

### 2.2 Parental Influence and STEM Career Intention

Past studies (e.g. Katz, Cohen, Green-Cohen & Morsiano & Davidpur, 2018; Michele & Francesco, 2018; Guan et al., 2018; Nawabi, Javed, Shujaulla & Ulfat, 2019) confirmed that parents are likely to play a crucial role in the lives of their children (undergraduates) including career selection. According to Zhou et al. (2016), children tend to favour ideal careers like that of their parents over others if their careers provide accomplishment and comfortable lifestyle. Parents' advice and guidance exert the influence on their children's career choice intention as parents have regular interactions with their children compared to teachers and career counsellors (Lilia, Norshariani, Ria & Lilia, 2018). Social learning theory proposed that an individual (i.e undergraduate) will observe, learn and modelling the attitudes, interests and reaction of others (e.g. parents) (Bandura, 1977). This implied that undergraduates are likely to rely on parents to inform them what to do; observing parents and form an idea to follow parents' careers. Parents are their role model (Bloom, 2018). Parental influence often begin the career discussions with their children as early as possible, since their childhood (Hyde, Canning, Rozek, Clarke & Hulleman & Harackiewicz, 2016). Children should feel comfortable talking to their parents about anything, including their own aspirations for the future. By having an open relationship with parents, children can be exposed to various career options that might be a good fit to their interests and competencies (Cheng, Tsai & Kao, 2016; Lilia et al., 2018).

As we noticed, female are more gentleness, nurturance, and deference compared to male. Thus, they are more attached to parents. They tend to get closer to their parents even though they have grown up. Van der Vleuten et al. (2018) indicated that female are less interest in STEM careers when their friend group does not support STEM, and thus they are more likely to discuss their career aspirations with their parents. They knew that parents value their career interest more than anyone else in their life. They also feel ease and easy to communicate to their parents at any places and time, without feelings of shame and humiliation. They believed that parental beliefs, expectations and experiences will aid them to plan STEM careers. Strong parental involvement also beneficial in helping undergraduates to improve opportunities in STEM and promote their career readiness and development (Hsieh, 2019). Thus, it is hypothesize that:

*H1: Parental influence has a positive influence on undergraduates' STEM career intention.*

*H2: Female are more likely than male to seek career advices from parents.*

### 2.3 Friends Influence and STEM Career Intention

Besides the parental influence; friends also likely to play a crucial role in the lives of undergraduates. Friends influence was found to be influential in STEM career intention (Ogutu et al., 2017, Markusen & Roed, 2017; Chan, 2018). Friends can influence students' career intention by offering informal career advices (Faiter & Faiter, 2013). Social learning theory posits that social variable (i.e. friends) may influence one's career interest (Bandura, 1977). The theory suggests that the intention to engage in a particular career (e.g. STEM career) are highly depends on social influence (e.g. friends influence) (Bandura 1977). Through continuous friends' interaction, undergraduates likely to refine their career intention and subsequently choose the preferred STEM career. Friends are important in sharing career information and supporting each other. When the students interact with their friends, they may take into consideration the career advice they obtained. Friends likely to influence students' interest in STEM through friends' interaction. Faiter and



Faiter (2013) indicates the importance of friends' interaction since they rely on their friends to provide validation of the career choice they make. This is especially applied to male undergraduates. They like to get together and do things with friends including getting ideas whether or not they should pursue STEM careers (Van der Vleuten et al., 2018). They believed that friends, especially those best friends knows them better than anyone else in their academic life, then they will likely to listen to their opinion and suggestion (Riegle-Crumb & Morton, 2017). Past research also indicates that undergraduates' STEM career intention can be encouraged by their friends (Robnett & Leaper, 2013; Okiror & Otabong, 2015). Meanwhile, female students tend to report that their friends are not as supportive of their pursuit of STEM careers (Robnett, 2012; Robnett & Leaper, 2013; Van der Vleuten et al., 2018) since STEM careers are seen as too "masculine" for female. Based on the above discussion, it is hypothesized that:

*H3: Friends influence has a positive influence on undergraduates' STEM career intention.*

*H4: Male are more likely than female to seek career advices from friends.*

### **3.0 METHODOLOGY**

#### **3.1 Sample and Procedure**

The sample of this research comprised of final year undergraduates within STEM disciplines in a Malaysian public university. A technique of purposive sampling was used. Out of 250 questionnaires distributed, 242 questionnaires were usable for analysis, representing response rate of 96.8%). The 96.8% response rate was relatively better than previous studies. For instance, Ayodele (2018) obtained 82.07% response rate while Stritch and Christensen (2016) had only 79%. In addition, it is also had satisfied the minimum required sample size of 129 as per the G\*power analysis. The frequency analysis showed that majority of the respondents were female (54.1%). 87 respondents were engineering students, 81 enrolled in technology courses, and 74 respondents were in medical related courses.

#### **3.2 Measurements**

Parental influence was measured using a 6-item scale adapted from Wong and Liu (2010). An example of the item is "I consider my parents' opinion when selecting career choice". Meanwhile, nine items were adapted from Mtemeri (2017) to measure friends influence. An example items is "I will consider to choose a career that is similar to my friends". STEM career intention was measured by a 13-item adapted from Career Interest Questionnaire (CIQ) Ver. 2.0 (Knezek & Christensen, 2013). Sample item is "I will get a job in a science-related area". A 5-point Likert-scale that ranged from (1) stronger disagree to (5) stronger agree was used as the response scale.

### **4.0 FINDINGS**

#### **4.1 Reliability and Validity**

This study utilized Partial Least Square Structural Equation Modelling (PLS-SEM) of SmartPLS 3.2.8 software to analyse the data. PLS-SEM was chosen because it enable to analyse the research framework that has been less examined with not a lot sample size (Henseler, Dijkstra & Sarstedt, 2014; Thangiah, Shuib & Dhanapal, 2019; Wong, 2013). Convergent validity was assessed through internal consistency (i.e., loadings of each items), average variance extracted (AVE), and composite reliability (CR). As depicted in Table 1, the loadings of the all remaining items were greater than threshold values of 0.70 (Hair et al., 2017). The items that having low loadings value (i.e. less than 0.70) had been omitted from the analyses except F6 (item of friends' influence) since other items have high scores of loadings to complement AVE and CR (Hair et al., 2017). Therefore, all together 15 items were deleted from further analyses. Table 1 also indicated that AVE for all constructs were above the recommended value of 0.50, and CR also exceeded that threshold value of 0.70 (Hair et al., 2017). The results show satisfactory convergent validity of the constructs examined in the study.

The discriminant validity of the constructs was assessed via the Fornell and Larcker criterion (1981). According to them, the square root of AVE should be more than the correlation coefficient of the two constructs to support discriminant validity. As shown in Table 2, each square root of AVE value is more than the correlation coefficients of two constructs; thus discriminant validity is supported. As such, it can be concluded that all measurements in this study are valid and reliable.

Table 1. Results of Measurement Model

Constructs	Measurement items	Loading	CR	AVE	R <sup>2</sup>
Parental influence	P2	0.735	0.803	0.577	-
	P3	0.734			
	P6	0.809			
Friends influence	F4	0.746	0.876	0.587	-
	F5	0.719			
	F6	0.683			
	F8	0.844			
	F9	0.825			
STEM career intention	C9	0.796	0.921	0.702	0.278
	C10	0.889			
	C11	0.888			
	C12	0.832			
	C13	0.778			

Note: CR = Composite reliability; AVE = Average variance extracted (AVE); R<sup>2</sup> = R square.

Table 2. Discriminant Validity of Constructs

Constructs	1	2	3
1. Parental influence	<b>0.760</b>		
2. Friends influence	0.394	<b>0.766</b>	
3. STEM career intention	0.403	0.471	<b>0.838</b>

Note: Diagonals (in bold) represent the square root of AVE while the other entries represent the correlation coefficients

## 4.2 Test of Hypotheses

Prior to hypothesis testing, predictive relevance ( $Q^2$ ) was measured. The blindfolding procedure suggested by Hair et al. (2017) as a rule of thumb for the model evaluation was applied. With the omission distance of seven, the result show that the  $Q^2$  value for dependent variable (i.e. STEM career intention = 0.184) were greater than zero, which implies the model has adequate predictive relevance.

The next step is to examine the hypothesized relationships, bootstrapping was performed. A significant path is confirmed when p-value is below 0.01 (t-value > 2.33). The results indicated that both independent variables (parental and friends influence) were significantly related to STEM career intention (Table 3). However, gender failed to moderate the relationship between parental influence, friends influence and STEM career intention as depicted in Table 3. Therefore, only H1 and H3 were supported.

Table 3. Tests of Direct Effects and Moderation (Gender)

Hypotheses	Relationships	Coefficient t	Std. error	t value	Supported
H1	Parental influence → STEM career intention	0.271	0.091	2.979**	Yes
H2	Parental influence*Gender → STEM career intention	-0.060	0.312	0.192	No
H3	Friends influence → STEM career intention	0.372	0.097	3.855**	Yes
H4	Friends influence*Gender → STEM career intention	-0.003	0.283	0.010	No

Note: t-value > 2.33 = significant at \*\*p<0.01

## 5.0 DISCUSSION

The main objective of this research is to examine the influence of parents and friends on undergraduate students' STEM career choices. The findings of this research was supported by pass studies

(e.g. Chan, 2018; Guan et al., 2018; Katz et al., 2018; Markusen & Roed, 2017; Michele & Francesco, 2018; Nawabi et al., 2019; Ogutu et al., 2017) that found out that undergraduate students' career choices is positively influenced by their parents and friends. Based on the social learning theory, an individual likely to learn from one another, via observation and modelling (Bandura, 1977). Thus, it is empirically proved that the respondents in this study were likely to consider and listen to their parents and friends while making the career decisions. Hence, the study contributes to the careers literature by examining parental and friends influence that underpinned by social learning theory; to understand the factors that motivate undergraduate students' STEM career intention.

Besides that, the findings of this study also showed that the relationship between independent (parental and friends influence) and dependent (STEM career intention) variables were not moderated by gender. This is contradicting with Behrend et al. (2007) that gender is a moderator in their studies. Based on the findings, the present study found that the gender failed to moderate the link between parents and friends' influence and undergraduate students' STEM career intention. The results signified that male and female undergraduates' STEM career intention were solely affected by their parents and friends, which they are alike to obtaining career supports from both parents and friends when making STEM career decisions. That is their preferences in getting advices and supports from parents or friends were not affecting by their gender.

Besides that, the study also offers practical implications for STEM industry. In order to enable them to attract and retain fresh graduates in STEM fields, the industry can take initiatives to collaborate with the universities to organize industrial talks, seminars, industrial visits activities or setting up an incubator centre. These programs not only encourage undergraduates' interest in STEM but also allow them to develop professional and practical skills, encouraging them to apply skills and knowledge acquired through study in a real-life environment. Besides the industries, education sectors such as universities should also responsible to promote students' interest and attitudes toward careers in STEM. To nurture undergraduates' interest in STEM, the universities should redesign the curriculum that have sound pedagogical practices and coherent in the course structure to implement best practices connected to daily life in STEM-related matters. For instance, academics might engage students in hands-on investigations as it will leading to deeper understanding of STEM and, therefore promote undergraduates' interest in pursuing a career in STEM, besides assisting them to adapt in 21<sup>st</sup> century STEM industries. Given parents and friends having great influence over graduates' intention to choose STEM careers, it is encourage that parents and friends to obtain valid and accurate STEM information from reliable sources and shares the information with their children, or peers and friends. It is also hoped that parents and friends give continuous support to their children and friend to pursue interest in STEM.

## 6.0 CONCLUSION

In summary, the findings of the present study provide adequate evidences that parents and friends were significant factors that influence undergraduates' STEM career intention, which is aligned with the proposition of social learning theory. Therefore, parents and friends should believe that they have a greater influence on someone's career choices.

## REFERENCES

- Aina, N., & Zafira, A. (2016, May 23). *Too few STEM students*. Retrieved from <https://www.nst.com.my/news/2016/05/147260/too-few-stem-students>
- Ayodele, T. O. (2018). Career choice of real estate students in Nigeria: The explaining influences in comparative perspective. *Property Management*, 37(1), 154-176.
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.
- Behrend, T. S., Thompson, L. F., Meade, A. W., Grayson, M. S., & Newton, D. A. (2007). Gender differences in career choice influences. (2007, April). Paper presented at the 22nd Annual Meeting of the Society for Industrial and Organizational Psychology, New York. Retrieved from <https://pdfs.semanticscholar.org/7635/bfdf554fc5e9f697637bfe929fc8e46b8849.pdf>
- Bloom, S. (2018). *The Importance Of Parents As Role Models*. Retrieved from <https://www.livestrong.com/article/110276-importance-parents-role-models/>

- Broadbridge, A., & Parsons, E. (2005). Gender and career choice: Experiences of UK charity retailer managers. *Career Development International*, 10(2), 80-97
- Chan, C. C. (2018). The relationship among social support, career self-efficacy, career exploration and career choice of Taiwanese college athletes, *Journal of Hospitality, Leisure, Sport and Tourism*, 22, 105-109.
- Cheng, C. F., Tsai, H. H., & Kao, C. C. (2016). The construction of a career developmental counseling model for taiwanese athletes. *Physical Education Journal*, 49(4), 443-464.
- Faiter, G.M. & Faiter, S.L. (2013). Teachers' influence on students' science career choices. *American International Journal of Social Science*, 2(5), 172-180.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.
- Gokuladas, V. (2010). Technical and non-technical education and the employability of engineering graduates: An Indian case study. *International Journal of Training and Development*, 14(2), 130-143.
- Guan, Y., Wang, Z., Gong, Q., Cai, Z., Xu, S. L., Xiang, Q., Wang, Y., Chen, S. X., Hu, H., & Tian, L. (2018). Parents' career values, adaptability, career-Specific parenting behaviors And undergraduate career adaptability. *The Counseling Psychologist*, 46(7), 922-946.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Thousand Oaks: Sage.
- Henseler J., Dijkstra, T. K., & Sarstedt, M. (2014). Common beliefs and reality about partial least squares: Comments on Ronkko and Evermann (2013). *Organizational Research Methods*, 17(2), 182-209
- Hsieh, T.L. (2019). Gender differences high school learning experiences, motivation, self-efficacy, and career aspirations among Taiwanese STEM college students. *International Journal of Science Education*, 41(13), 1870-1884.
- Hyde, J. S., Canning, E. A., Rozek, C. S., Clarke, E., Hulleman, C. S., & Harackiewicz, J. M. (2016). The role of mothers' communication in promoting motivation for math and science coursetaking in high school. *Journal of Research Adolescence*, 27(1), 49-64
- Katz, I., Cohen, R., Green-Cohen, M., & Morsiano-Davidpur, S. (2018). Parental support for adolescents' autonomy while making a first career decision. *Learning and individual differences*. 65, 12-19
- Knezek, R., & Christensen, G. (2013). Career interest questionnaire. Retrieved from <https://iitl.unt.edu/sites/default/files/Instruments/Career%20Questionnaire%20v20.pdf>
- Lilia, H., Norshariani, A. R., Ria, Z., & Lilia, M. (2018). The roles of parents in cultivating children's interest toward science learning and careers. *Kasetsart Journal of Social Science*, 39, 190-196.
- Lim, S. M. (2018, July 21). *STEM jobs in high demand*. Retrieved from <http://www.focusmalaysia.my/Income/stem-jobs-in-high-demand>
- Markusen, S., & Roed, K. (2017). The gender gap in entrepreneurship-the role of peer effects. *Journal of Economic Behavior and Organization*, 134, 356-373.
- Michele, R., & Francesco, V. (2018). From the cradle to the grave: The influence of family background on the career path of Italian men. *Oxford Bulletin of Economics*, 80(6), 1-27
- Mtemeri, J. (2017). *Factors influencing the choice of career pathways among high school students in Midlands province, Zimbabwe* (Doctoral dissertation, University of South Africa, Africa). Retrieved from <https://core.ac.uk/download/pdf/95521630.pdf>
- Nawabi, S., Javed, M. Q., Shujaulla, S., & Ulfat, H. (2019). Parental influence on career choice of their children: Literature review. *International Journal of Advanced Research*, 7(3), 221-227
- Ogut, J. J. P., Odera, P., & Magaria, S. N. (2017). The effectiveness of peer pressure on students' career decision making in secondary schools Kenya. *Journal of Humanities and Social Science*, 3(3), 16-32.
- Okiror, J. J., & Otabong, D. (2015). Factors influencing career choice among undergraduate Students in an African university context: The Case of agriculture students at Makerere University, Uganda. *Journal of Dynamics in Agricultural Research*, 2(2), 12-20
- Ozbilgin, M., Kusku, F., Erdogmus, N. (2005). Explaining influence on career choice: The case of MBA students in comparative perspectives. *The International Journal of Human Resource Management*, 16(1), 2000-2028
- Riegle-Crumb, C., & Morton, K. (2017). Gendered expectations: Examining how peers shape female students intent to pursue STEM fields. *Frontiers in Psychology*, 8(Article 329), 1-11.

- Robnett, R. (2012). The role of peer support for girls and women in the STEM pipeline: Implications for identity and anticipated retention. *Internal Journal of Gender, Science and Technology*, 5(3), 232-253.
- Robnett, R. D., & Leaper, C. (2013). Friendship groups, personal motivation, and gender in relation to high school students' STEM career interest. *Journal of Research on Adolescence*, 23(4), 652-664.
- Rozana, S. (2018, March 7). *Varsities nurture love of STEM in schools*. Retrieved from <https://www.nst.com.my/education/2018/03/342360/varsities-nurture-love-stem-schools>
- Stritch, J. M., & Christensen, R. K. (2016). Raising the next generation of public servants? Parental influence on volunteering behavior and public service career aspirations. *International Journal of Manpower*, 37(5), 840-858.
- Thangiah, M., Shuib, B., & Dhanapal, D. D. (2019). Analyzing the conceptual model for exploratory testing framework using PLS-SEM. *Advanced in Applied Research Science*, 10(1), 6-11.
- Wong, K. K. (2013). Partial least squares structural equation modelling (PLS-SEM) techniques using SmartPLS, *Marketing Bulletin*, 24(1), 1-32.
- Wong, S. C. K., & Liu, G. J. (2010). Will Parental influences Affect career choice? Evidence from hospitality and tourism management students in China. *International Journal of Contemporary Hospitality Management*, 22(1), 82-102.
- Wong, S. C., and Roziah, M. R. (2019). Influences of career establishment strategies on generation Y's self-directedness career: Can gender make a difference?, *European Journal of Training and Development*, 43(5/6), 435-455.
- Van der Vleuten, M., Steinmetz, S., & van de Werfhorst, H. (2018). Gender norms and STEM: The importance of friends for stopping leakage from the STEM pipeline. *An International Journal on Theory and Practice*, 24(6-7), 417-436.
- Vilorio, D. (2014, January 15). *STEM: Intro to tomorrow's jobs*. Retrieved from <https://www.bls.gov/careeroutlook/2014/spring/art01.pdf> on 23 July 2018
- Zhou, W., Guan, Y., Xin, L., Mak, M. C. K., & Deng, Y. (2016). Career success criteria and locus of control as indicators of adaptive readiness in the career adaptation model. *Journal of Vocational Behavior*, 94, 124-130.

## I am Hé: Creating Cultural Awareness in Teaching Mandarin as a Foreign Language

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### ABSTRACT

*At present, the mere rise of China's economy has made China as an emerging global superpower. The emergence of China's economic growth has pushed the Mandarin language itself to become a global language. In fact, the Mandarin language is the new current trend with nearly a quarter of the world's population speaks Mandarin Chinese as their native language (Hua, 2002). Hence, given the current situations and opportunities, the wide spread use of this language for non-native speakers to learn has arguably never been more important. Although it seems plausible to accept Mandarin as a foreign language, the language however could be very difficult for one to master. Mandarin language is known as one of the most difficult languages to be learned (Hong & Moreira, 2002). There are four main skills in learning Mandarin which are reading, writing, listening and speaking. According to Ellis (1999), in order for one to grasp the language comprehensively, the learner should be fully immersed within the language. The integration of cultures into the curriculum is one of the best ways to structure instruction for a more meaningful learning, which is by connecting the cultures to the learners' lives in the real world (Hill & Mannheim, 1992; Ding & Saunders, 2006). Therefore, this concept paper discusses the role of Chinese culture as the core value in foreign language classroom as language and culture are intertwined. The cultivation of a broader cultural awareness beyond the core content knowledge is crucial among the language educators. The relationship between language teachers' cultural awareness and pedagogical practices are inseparable. It is very vital for the teachers to understand their responsibilities and their dynamic relationship between teaching and learning in producing lifelong learners. Thus through the discussion in the paper, the authors hope to instill the idea of immersions of culture in the curriculum for the betterment of the students in learning Mandarin as a foreign language comprehensively.*

**KEYWORDS:** Mandarin language, foreign language, culture, cultural immersion

### 1.0 INTRODUCTION

"I am Hé". People may mistakenly assumed that Hé is someone's name, whether it belongs to his or her, or even some people might thought it is a surname of a Chinese family. However, in this context, Hé (合) symbolizes many definitions. According to the Modern Chinese Dictionary (Xiàndài hànyǔ cídiǎn) 7<sup>th</sup> Edition (2016), the definitions include 融合 (*rónghé*) which means mix together; fuse; merge, 结合 (*jiéhé*) which defined as combine; unite; integrate, 综合 (*zònghé*) carries the meaning of synthesize; sum up; integrate, 联合 (*liánhé*) is described as unity; combination of, and 配合 (*pèihé*) illustrated the activity of coordinating, cooperating and combining of two or more elements. All of these Hé exhibit the action of combining, uniting, integrating more than one element, in this context represents the action of Mandarin language teachers embracing the Chinese cultures and combine it, unite it, and integrate it within themselves and express it throughout the curriculum.

Becoming a Hé is very crucial for Mandarin teachers as according to a study done by David Graddol (1997), he proposed that the Mandarin language will become one of the world's top languages by 2050 due to the increasing global importance of China economically and culturally. China's rapid economic growth from a poor developing country to a major economic power has been very remarkable. Currently, China is the world's largest source of imports, largest merchandise trading partner of United States and third-largest export market (Morrison, 2011). The emergence of China as one of the world economic powers has been spreading the demand of Mandarin language. The need to converse the language especially in economical fields is extensively necessary for one to compete and survive in the ever changing dynamic world.

Mandarin is the sole official language of the People's Republic of China (Wang & Lemmer, 2013). For the past three decades, the number of Mandarin learners as a second language or foreign language has productively increasing. Based on the statistical data gained from Hanban, as of 2017 there are more than forty million learners of Mandarin as a non-native language (Zhao, 2017). The big tsunami wave made by China pushes Mandarin language to conquer the world aggressively. According to the statistical data on the world's most spoken languages, Mandarin is the most spoken language across the world with more 1.3 billion speakers, leaving behind Spanish, Arabic, and Russian etc. (McCarthy, 2018). Thus, undoubtedly, day by day Mandarin itself is strengthening its world-wide as many people have begun to learn Mandarin language (Goh, 2016).

Therefore, throughout this paper, a newfound passion in becoming a "Hé" will be discussed, especially in instilling the idea of total immersions of Chinese culture in the curriculum. Along with, the work of exploring and envisioning teaching Mandarin that utilizes a more inclusive instructions and pedagogy which is for the betterment of the students in learning and grasping Mandarin as a foreign language comprehensively.

### 1.1 Nature of Mandarin Language

The learning of Mandarin language emphasizes on the development of learners' listening, speaking, reading and writing skills (Spencer, 2015). It is from the linguistic perspectives that viewed these four skill areas as the way to learn Mandarin as a foreign language. Arthur (1973) also point out the language development entails four basic and interactive abilities which are listening, speaking, reading and writing (as cited in Dolan, 1985). Mandarin language system consists of phonological structure and orthographic features. The phonological structure is known as Hanyu Pinyin, while the orthographic features are the Chinese characters (Yun, 2009).

According to the book of "Teaching Chinese as a Foreign Language: Theories and Applications" (2008), the authors emphasized on teaching listening and speaking skills through an interactive approach. The authors also elaborate on the process of how the speaking skill derives from listening, and at the same time enhance the students' ability of reading, and later followed by writing skills. Hanyu Pinyin is the Romanized transliteration of spoken Chinese (Poole, 2015). It functions as guidance to help the learners to pronounce the Chinese characters. Hanyu Pinyin consists of 21 initials, 36 finals, 411 possible combinations of initials and finals, and can up to thousands of syllables when applying the four tones (Xu, 2011). Mandarin also is phonologically different compared to English in terms of syllables (Man, North & Li, 2017). The main difference between Mandarin and English (or any Romanized alphabets) is the usage of tones (Cheng, 1991). Mandarin has four different tones which are high level, rising, falling-rising and falling. In addition to the difficulties to pronounce Hanyu Pinyin with the correct tones, every projection with different tones has different meaning (Jongman, Wang, Moore & Sereno, 2006).

Meanwhile, Chinese writing system is called Chinese character. Chinese characters are logograms (Hollmann & Donicht, 2017). Compared to the Romanized alphabet system, every word in Mandarin language is correspond to a Chinese character. Based on the List of Common Characters in Modern Chinese reported by Chinese State Language Commission and the Chinese State Education Commission (1988), there are more than 3500 characters are commonly being used (Chen, 1999). Meanwhile based on a book "*Chinese: A Linguistic Introduction*" (2006), in modern Chinese there are roughly more than 56 000 simplified Chinese characters. However, only 2400 characters are commonly used, and those 2400 characters only constitute 99 percent of characters used in Chinese publications. For learners whose native language such as English, learning Mandarin can be exceptionally difficult as the Chinese script did not use alphabet like the Romanized system alphabet (Everson, 1998).

## 2.0 THE ESSENCE IN TEACHING MANDARIN AS A FOREIGN LANGUAGE

Mandarin language is known as one of the most difficult languages to be learned (Hong & Moreira, 2002). There are many research regarding Mandarin as a foreign language. In study, it mentioned that one of the most challenging parts in learning Mandarin is reading the Chinese characters (Ye, 2011). It is quite difficult for the Romanized students to grasp this logographic language system as it has thousands of characters to be memorized. Besides that, among major problems in learning Mandarin language for non-native speakers is the difficulties in reading Chinese pinyin (Dong, Tsubota & Danstuji, 2013). Also, tonal errors pose a serious issue to the learners as pronouncing with different tones carries different meaning

from the initial intention (Jongman, Wang, Moore & Sereno, 2006). These condition leads to the unwillingness of the learners to converse the language.

Nonetheless, the learning of Mandarin language is not just about the phonological structure and orthographic feature, but it is beyond these alphabetic phonetic systems (Abro, Zhenfang & Shabbir, 2014). According to Ellis (1999; 2012), in order for one to grasp the second/foreign language comprehensively, the learner should be fully immersed within the language. Owing to the fact that culture is the essence of language, hence the learning process should be oriented in the social framework of the particular culture (Damen, 1987). Nault (2008) also agreed that it is significant for the learners to become familiar with the target cultures in order to grasp the language proficiency completely.

In Mandarin language class setting, students will usually experience Chinese culture once they enter the class. Chinese culture essentially will be embedded throughout the learning, for instance, from the learning of complex tonal language to mystery logographic writing system, from non-verbal actions to Chinese social relation and kinship systems. To such a degree, cultural elements in language learning serve as “hidden curriculum”, notably teaches the values of a community and the socio-cultural expectations of an individual’s roles (Hymes, 1996; Byram & Feng, 2004).

Thus, the integration of Chinese culture into the curriculum (in this context: Mandarin curriculum) is one of the best ways to structure instruction for a more meaningful learning which is by connecting the cultures to the learners’ lives in the real world (Hill and Mannheim, 1992; Ding and Saunders, 2006). Likewise, language is considered as the carrier of culture, while culture is the content of the particular language (Kuang, 2007). Here comes the role of language teachers to deliver cultural elements throughout the curriculum. It is crucial for the teachers to understand their responsibilities, their dynamic relationship between teaching and learning in producing lifelong learners.

## **2.1 Language Teachers’ Cultural Awareness**

Based on the findings of National Standards in Foreign Language Education Project (2006), the role of culture as fundamental part in teaching language in language classrooms (Dema & Moeller, 2012). In fact, according to the Standards for Foreign Language Learning (National Standards in Foreign Language Education Project, 1999), “the true content of the foreign language teaching and learning is not solely focusing on vocabulary and grammar of the language, but it is the cultural elements expressed through the language” (p.43).

Cao (1998) determined two important concepts in teaching foreign language, including teaching Mandarin as foreign language. The concepts are Culture Knowledge and Culture Understanding. Culture Knowledge is defined as having insight on the particular cultural characteristics including its history, beliefs, behaviours and values of the cultural group. Meanwhile, Culture Understanding is conceptualized as the ability and capability to accept and interpret the different value orientations among various cultural groups. At this phase, language teachers bring together the knowledge that they have into the system of assorted behaviours and attitudes, so as to meet the needs of diverse groups.

Hence, to become a “Hé”, a clear definition of what “culture” is truly the first step that language teachers need to understand before figuring out which methodology to use while teaching or even how to assess the cultural element throughout the curriculum (Byrd, 2011; Omaggio, 2001). Language teachers need to get themselves familiarize with multiple aspects of the target cultures, including specifics methods to help students in achieving proficiency in both cultural comprehension and communicative competence.

## **2.2 Language Teachers’ Pedagogical Practices**

Pedagogy is at the heart of teaching and learning. Eventually, learning Mandarin is not something that students need to worry over grammar rules and trying to get it right every time they use the language. It is the fun in learning the language, along with the enjoyment of it and everything will fall perfectly during the process. However, ways to properly integrate culture teaching throughout the learning remains unsolved problem (Wang, 2006; East, 2012).

It is observed that many teachers spend more time on teaching grammatical and lexical components of the language, leaving behind culture as the least focused element in the curriculum (Lafayette, 1988; Seelye, 1997; Moore, 2006). Based on a research done in investigating intercultural awareness among foreign language teachers in China, it is profound that teachers are more comfortable towards grammar-translation approach due to lacking in systematic training and methodology (Li, 2016). This particular



scenario is presumed to have a significant relationship with teachers' experiences, education level, ACTFL membership and school district membership (Asay, 2016).

Thus, it is empirical to provide opportunities for language teachers with teacher education programmes, specifically to enhance their knowledge on the target culture and at the same time able to develop intercultural approach in teaching the language (Atay, 2005). This kind of program is necessary to guide language teacher with knowledge on how to apply the theory and meet the expectations of the students in today's global world (Kahraman, 2016). By doing so, language teachers able to planned the cultural content with clear objectives and present it in the classroom through suitable means for the language learners.

### **3.0 INTEGRATION OF CULTURAL TEACHING IN FOREIGN LANGUAGE CLASSROOM**

Integrating culture of Chinese people in teaching Mandarin is unquestionably important to develop learners' competence in intercultural communication (Emitt & Komesaroff, 2003). According to America's Languages: Investing in Language Education for the 21<sup>st</sup> Century (2017), the American Academy's Commission on Language Learning reported that it is pivotal to improve the nation's language capacity. These includes promoting opportunities for all students to learn languages by experiencing other cultures and in the same time able to immerse themselves in languages.

Language learners will not be able to fully grasp the language without deeper understanding towards its culture and native speakers. The Standards for Foreign Language Learning in the 21<sup>st</sup> Century (2012) describes a set of goals for foreign language learning which are Communication, Cultures, Connections, Comparisons and Communities. Based on the Program Standards for the Preparation of Foreign Language Teachers, Communication is described as the ability to communicate with meaningful content and it is characterized by three communicative mode which are interpersonal mode, interpretive mode and presentational mode (ACTFL, 2013). Meanwhile, Culture reflects the understanding on various perspectives and practices of the languages and cultures learned. Next is regarding Connections. Under this goal, it is aimed to develop insight in the nature of language and culture, which allow the learners to acquire information through the language by means of content-based learning experiences at all levels of instructions. Meanwhile, under the goal of Comparisons, it allow the learners to explore and deeper their understandings towards global awareness and competence. Lastly is Communities. Language learners are aimed to interact and collaborate in multilingual communities, not only within the school curriculum but also in the world community and in lifelong learning. These five main goals articulate the essential skills and knowledge of language learners' needs specifically in achieving language proficiency.

#### **3.1 Up skilling Language Proficiency in Student-Centred Teaching**

Given the consideration of the context discussed above, integrating Chinese cultures throughout the curriculum is certainly critically crucial. Classroom instructions involving activities on real life situation, such as role plays and group projects will help to develop students' communicative competence on the targeted language (Schmidt, 2000). It is imperative for the language teachers to seek innovative ways especially in providing more engaging and constructive learning.

However, there is no correct approach for teaching culture, and not even any shortcuts of methodologies in language classroom. As a matter of fact, culture itself is never static, keeps evolving throughout the times (Savignon & Sysoyev, 2005). There are numbers of pedagogical practices that can be implemented in language classroom. This includes the usage of authentic materials (Omaggio, 1986; 2001; Krasner, 1999), culture cluster (Meade & Morain, 1973; Hughes, 1986), cultural capsules (Taylor & Sorenson, 1961), incorporating proverbs, songs, festivals (Hendon, 1980) and also, study-abroad program or student exchange program.

*Using Authentic Materials.* There are also various interesting and unique cultures that can be shared with the students to upskill their language proficiency. Historically, China is the world's oldest continuous civilization. Tang poems are among the famous Classical Chinese literature (Lee & Wong, 2012). What teachers can do is to allocate 2-3 minutes of total teaching hour for the recitation of Tang poems at beginning of the class. As result of doing this, students are not only able to appreciate what it is like during the Tang Dynasty, but also able to develop students' reading and speaking skills, along with boosting up their confidence level. Besides that, teachers also able provide the opportunity to write the Tang poems by using

Chinese calligraphy brushes. These activities not only will attract the students' interests but at the same time able to enhance their readiness in learning the language.

*Culture Capsule Approach.* Besides that, language teachers can use Mahjong game as one way of innovations in teaching numbers. As mentioned earlier, teaching Chinese characters can be really hard for Romanized language speakers. Therefore, by teaching Chinese characters or numbers through "the game Chinese people played" is an innovative culture capsule approach to attract students' interest and at the same time able to enhance students' readiness in learning Mandarin language (Greene, 2015). Playing Mahjong will help to develop students' ability in terms of reading, speaking and listening comprehension skills students need to be able to read the Chinese characters on the Mahjong tiles, speak out the intended Chinese characters and listen to the other players' instruction while playing the games.

*The Self-Awareness Technique.* Apart from that, language teachers can also use the self-awareness strategy in language classroom planning. This kind of strategy is believed to raise students' consciousness of basic beliefs that govern their values, actions and attitudes (Chastain, 1988; Hussein, 2017). For instance, the role of red color. According to Chinese, red symbolizes luck, prosperous, happiness and power (Huang, 2011). One of the creative ways to inculcate the importance of red color is by asking the students to wear red t-shirts or clothes during the examination day or any related events. By doing so, language students will be able to get the positive aura, the passion and self-empowerment as what the Chinese believes. It is astounding to see on how cultures affect the students' learning.

#### 4.0 TECHNOLOGY IN TEACHING CULTURE

The integration of technology in the curriculum has been a contentious issue. In this 21<sup>st</sup> century, it is important for the educators to prepare the students to understand the globalization and its consequences. This means the entire curriculum should explore the potential of incorporating digital technologies to engage students actively and making the learning become more effective (Gonzalez, 2009). On top of that, technology facilitates the teaching of culture by providing authentic communication in an interactive environment (Lee, 2009). There are several of activities that involves the usage of technology, such as social application (e.g., Facebook, Instagram), blogging (e.g., Twitter), mobile Internet access (e.g., Youtube), just to name a few. Producing a Chinese music video is one of the examples that can be done. Through this activity, it can develop and enhance students' literacy skills, self-expression and self-empowerment, as well as critical thinking ability to assist in using Internet (Blood, 2002; Oravec, 2002; Ducate & Lomicka, 2008; Lee, 2009). All in all, incorporating cultures as one of the innovation in teaching and learning foreign language is something beyond imagination (Nault, 2008). It is like schools without walls; classrooms without boundaries.

#### 5.0 CONCLUSION

Teaching culture in a foreign language classroom may not be a novel issue, as there were many voices urging the need to incorporate cultural element in language classroom since 1980s and these voices has become louder ever since (Blatchford, 1986; Brown, 1986; Atkinson, 1999; Tang, 1999; 2006). Although there are numbers of researches stressing the importance of teaching culture in language classroom, it, however, has remained sporadic and insubstantial in most of the language classroom (Omaggio, 1993, 2001; Dai, 2011; Byrd, et al., 2011).

Needless to say, culture teaching in foreign language classroom is an essential supplement as it will enhance students' pleasure and excitement from language learning. Language teachers' tasks are not only to teach Mandarin language, but also, to teach in such a way to open the door to the understandings on the diversity of life and richness of culture across modern China (Jin, 2014). The success of teaching Mandarin language evolves in tandem with cultural understanding. By being able to master every bit of Chinese culture and in no time, students will be able to achieve native-like mastery of the language itself (Peterson & Coltrane, 2003).

Therefore, it can be concluded that learning Mandarin language is about discovering the beauty of Chinese culture. The relationship between language and culture goes far deeper than we could imagine. Understanding language is understanding culture; the interdependence of language and culture is vital. Although there are a lot of processes and factors which need to come together in being an ultimate Hé, but it is very imperative for language teachers to provide a language-rich environment throughout the teaching

and learning process. Mandarin teachers are required to bring along the students for a full gear of scuba diving, going down immersing through the Chinese cultures, while encourage the students to let the pulse of a new culture run through their veins and bring the language to life for a more meaningful learning.

## REFERENCES

- Abro, M., Zhenfang, L. & Shabbir, R. (2014). Mandarin: Conquering the language classrooms around the world. *American International Journal of Contemporary Research*, 4(3), 48-54.
- American Council on the Teaching of Foreign Languages (ACTFL). (1996). *Standards for foreign language learner for the 21<sup>st</sup> century*. Kansas, USA: Allen Press Inc.
- American Council on the Teaching of Foreign Languages (ACTFL). (2013). *Program Standards for the Preparation of Foreign Language Teachers (Initial Level – Undergraduate & Graduate) For K-12 and Secondary Certification Programs*. Council for Accreditation of Educator Preparation (CAEP). Retrieved from <https://www.actfl.org/sites/default/files/CAEP/ACTFLProgramStandards2013.pdf>
- Asay, D. P. (2016). What, why and how much?: The integration of culture in the secondary foreign language classroom. *All Theses and Dissertations, BYU Scholars Archive*, 6192.
- Atay, D. (2005). Reflections on the cultural dimension of language teaching. *Language and Intercultural Communication*, 5 (3), 222-237.
- Blood, R. (2002). *The weblog handbook: Practical advice on creating and maintaining your blog*. Cambridge, MA: Perseus Publishing.
- Byram, M. & Feng, A. (2004). Culture and language learning: Teaching, research and scholarship. *Language Teaching*, 37 (3), 149-168.
- Byrd, D. R., Hlas, A. C., Watze, J. & Valencia, M. F. M. (2011). An examination of culture knowledge: A study of L2 teachers' and teacher educators' beliefs and practices. *Foreign Language Annals*, 44, 4-39.
- Cao, W. (1998). Approaches to cultural education in language teaching. *Foreign Language Teaching and Research*, 115 (3), 10-14.
- Chastain, K. (1988). *Developing Second Language Skills: Theory and Practice*. Orlando, Florida: Harcourt Brace Janovick Publishers.
- Chen, P. (1999). *Modern Chinese: History and Sociolinguistics*. Cambridge: Cambridge University Press.
- Dai, L. (2011). Practical Techniques for Cultural-based Language Teaching in the EFL Classroom. *Journal of Language Teaching and Research*, 2 (5), 1031-1036.
- Damen, L. (1987). *Culture learning: The fifth dimension in the language classroom*. Reading, MA: Addison-Wesley.
- Dolan, M. W. (1985). Integrating listening, speaking, reading and writing in the classroom. *Language Arts Journal of Michigan*, 1 (1), 7-12.
- Ducate, L. C. & Lomicka, L. L. (2008). Adventures in the blogosphere: From blog readers to blog writers. *Computer Assisted Language Learning*, 21 (1), 9-28.
- East, M. (2012). Addressing the intercultural via task-based language teaching: Possibility or problem? *Language and Intercultural Communication*, 12 (1), 56-73.
- Ellis, R. (2012). *Language teaching research and language pedagogy*. Chichester: Wiley-Blackwell.
- Emitt, M. P. J. & Komesaroff, L. (2003). *Language and Learning*. Oxford: Oxford University Press.
- Everson, M. E. & Yun, X. (2008). *Teaching Chinese as a Foreign Language: Theories and Applications*. Cheng & Tsui Publisher.
- Goh, Y. (2016). *Teaching Chinese as an international language a Singapore perspective*. Cambridge: Cambridge University Press.
- Gonzalez, J. A. (2009). Technology and culture in the language class: Adding another ingredient to the old dilemma...and a taxonomy and a database structure. *Asiacall Online Journal*, 4 (1), 58-66.
- Graddol, D. (1997). The Future of Language. *Science*, 303 (5662).
- Hendon, U. (1980). Introducing culture in the high school foreign language class. *Foreign Language Annals*, 13 (3), 191-199.
- Hollmann, T. O. & Donicht, M. (2017). *Chinese script: History, characters, calligraphy*. New York: Columbia University Press.

- Hong, L. & Moreira, A. (2002). Is Chinese Impossible to Learn? – An Initiation into Chinese. *Intercultural Communication Studies*, XI (3), 105-120.
- Hua, Z. (2002). *Phonological development in specific contexts: Studies of Chinese-speaking children*. Clevedon: Multilingual Matters.
- Huang, Q. (2011). A study on the metaphor of “red” in Chinese culture. *American International Journal of Contemporary Research*, 1 (3), 105-120.
- Hughes, G. H. (1986). An Argument for Culture Analysis. *Language Annals*, 6 (3), 331.
- Hymes, D. (1996). *Ethnography, linguistics, narrative inequality*. Bristol, P. A.: Taylor and Francis.
- Jin, T. (2014). Getting to know you: The development of intercultural competence as an essential element in learning Mandarin. *London Review of Education*, 12 (1), 20-33.
- Jongman, A., Wang, Y., Moore, C. B. & Sereno, J. A. (2006). *Handbook of Chinese Psycholinguistics*. Cambridge: Cambridge University Press.
- Kahraman, A. (2016). Teachers’ and learners’ attitudes towards culture and culture learning in a Turkish context. *Journal of Language and Linguistic Studies*, 12 (2), 113-126.
- Kuang, J. F. (2007). Developing students’ cultural awareness through foreign language teaching. *Sino-US English Teaching*, 4 (12), 74-81.
- Lafayette, R. C. (1978). Teaching Culture: Strategies and techniques. *Language in Education: Theory and Practice*, 11.
- Lee, L. (2009). Promoting intercultural exchanges with blogs and podcasting: A study of Spanish-American telecollaboration. *Computer Assisted Language Learning*, 22 (5), 425-443.
- Lee, J. & Wong, T. (2012). *Glimpses of Ancient China from Classical Chinese Poems*. Paper presented at the COLING, Mumbai. Retrieved from <http://www.aclweb.org/anthology/C12-2061>
- Li, Y. (2016). Intercultural Awareness in Foreign Language Teaching: A Chinese Perspective. *Journal of Language Teaching and Research*, 7 (4), 768-772.
- McCarthy, N. (2018). The World’s Most Spoken Languages. *Statistica*. Retrieved from <https://www.statista.com/chart/12868/the-worlds-most-spoken-languages/>
- Meade, B. & Morrain, G. (1973). The Culture Cluster. *Foreign Language Annals*, 6 (3), 331.
- Morrison, W. M. (2011). *China-U.S. Trade Issues*. Washington, D.C.: Library of Congress, Congressional Research Service.
- National Standards in Foreign Language Education Project (2006). *Standards for foreign language learning in the 21<sup>st</sup> century* (3<sup>rd</sup> Edition). Lawrence, KS: Allen Press.
- National Standards in Foreign Language Education Project (2012). *Standards for foreign language learning in the 21<sup>st</sup> century: including Arabic, Chinese, Classical languages, French, German, Italian, Japanese, Korean, Portuguese, Russian, Scandinavian language and Spanish*. Yonkers, NY.
- Nault, D. (2008). Going global: Rethinking culture teaching in ELT contexts. *Language, culture and curriculum*, 19 (3), 314-328.
- Omaggio-Hadley, A. (2001). *Teaching Language in Context* (3<sup>rd</sup> Edition). Boston, MA: Heinle & Heinle Publishers.
- Oravec, J. A. (2002). Bookmarking the world: Weblog applications in educations. *Journal of Adolescent and Adult Literacy*, 45 (7), 616-621.
- Peterson, E. & Coltrane, B. (2003). Culture in second language teaching. *CAL Digest*, 3 (9), 1-6.
- Poole, F. J. (2015). Teaching Chinese as a Foreign Language: A Foreigner’s Perspective. *All Graduate Plan B and other Reports*, 457 (5), 1-161.
- Savignon, S. J. & Sysoyev, P. V. (2005). Cultures and comparisons: Strategies for learners. *Foreign Language Annals*, 38 (3), 357-365.
- Schmidt, G. (2000). Teaching Culture and Language for Specific Purposes. *Australian Review of Applied Linguistics. Supplement Series*, 14 (1), 135-146.
- Spencer, W. A. (2015). Mandarin Chinese as a Second Language: A Review of Literature. *Honors Research Projects*, 210, 1-47.
- Taylor, H. D. & Sorensen, J. L. (1961). Culture Capsule. *The Modern Language Journal*, 45, 6.
- Tomalin, B. & Stempleski, S. (1993). *Cultural Awareness*. Hong Kong: Oxford University Press.
- Wang, C. (2006). On Chinese culture curriculum planning. *International Education Journal*, 7 (4), 570-579.
- Wang, Y. & Lemmer, E. M. (2013). Teaching Mandarin as a foreign language in higher education institutions in South Africa. *Per Linguam: A Journal for Language Learning*, 29 (1), 33-48.

- Modern Chinese Dictionary (Xiàndài hànyǔ cídiǎn) 7<sup>th</sup> Edition (2016). China: The Commercial Press.
- Xu, K. (2011). *A brief introduction to Chinese Language*. Nanjing: Nanjing Putong Chubanshe.
- Yun, H. (2009). *Learn Chinese Characters by Radicals*. Beijing: Huayu Jiaoxue Chubanshe.
- Zhao Xiaoxia (2017). Chinese becomes an “International language” at a faster speed. *People's Daily Overseas Edition*.

## A Systematic Review of the Implementation of the Blackboard Learning System as E-Learning: Opportunities and Challenges to the Online Learning Environment

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### ABSTRACT

*Blackboard learning has particularly endorsed the use of e-learning operations. Although particular reference has been made to a certain internet application or service, the benefits and difficulties of implementing the blackboard scheme on online education have not been systematically understood. A review of the literature was therefore carried out to define the significant possibilities and challenges of studying the blackboard system to implement it as an e-learning system. The articles were selected from SCOPUS journals using the keywords "blackboard-based learning and interaction" and "blackboard-based learning and computer-based learning as internet learning" and a total of 430 articles were obtained and screened from the referenced databases. Finally, a total of 14 publications were chosen to evaluate information after inclusion and exclusion criteria in order to accomplish the primary goals of this research. The review findings revealed that a set of evidence supporting the use of blackboard learning system is efficient for geographically distant learners. Through this scheme, learners can share their thoughts with each other. Even though blackboard users and non-users have positive intention to implement this system and the system is suitable for enhancing students' academic performance at all levels of education, the system is not presently used for teaching and learning by the big proportions of those who have undergone Blackboard trainings. This article also revealed the main possibilities and difficulties associated with using these systems in the teaching context of Blackboard. The Blackboard Learning System is an efficient way in the field of education to move towards more interactive and innovative internet learning settings.*

**KEYWORDS:** Blackboard learning system, Academic achievement, opportunities, challenges of implementation.

### 1.0 INTRODUCTION

Blackboard is one of the most popular education platforms; it is promoted and applied widely in many colleges and universities worldwide. Blackboard platform is a curriculum-oriented digital teaching platform that integrates multimedia, creates a virtual learning environment, and provides interactive communication. Because of its easy operating interface, powerful teaching functional modules as well as diverse internet curricula and instruments, Blackboard has been the most common learning platform in schools, universities, and other academic organizations in the universe. Blackboard network learning platform focuses on its curriculum and offers educators and learners with a powerful internet virtual learning setting. This system consists of four separate functional components: content and resource management module, online communication module, evaluation management module, and system management module. (Bradford et al.2007).

The Blackboard system is regarded as a kind of E-learning. It is an online application to manage the teaching and learning process. It was designed to help and support both teachers and students to interact in the virtual classes and to learn using the electronic materials online as a kind of integration for the given activities and material face to face on-campus classes. The blackboard also provides teachers with the chance to present the content of the course, make conferences, chat, make discussion, and give assignments or automated tests online on the Internet. Blackboard has been adopted by the Queensland University of Technology as an online learning management system for all students both on-campus and distance learners (Heirdsfield et al 2011). With such rapid growth in the use of these systems, it is important to understand how these technologies are being used and how they impact on users. The effect of learning development schemes has been nothing but that the limits between distance schooling and campus-based experiences have been obscured and are substituted by hybrid or 'distributed learning' methods in which technology-mediated training is the standard (Masi & Winer, 2005). New approaches can alter teachers' way of teaching and learning (DeNeui & Dodge, 2006). Many such structures can change the selection and growth of internet resources, affect traditional learning methods and introduce a fresh layer of complexities in learning systems integration (Coates H, 2007). Blackboard Learning Management System (LMS) operates with

thousands of organizations around the world to assist them to address their instructional difficulties and assist them to drive educational innovation. The first blackboard system that developed between 1971 and 1976 was the HEARSAY-II speech understanding scheme.(Bradford et al 2007). Although Hearsay-II's fundamental characteristics remain in today's blackboard systems, countless developments and improvements have been produced as a consequence of the knowledge acquired in the use of blackboard technologies in extensively varied applications.

Learning how to use learning leadership technologies such as Blackboard has been recognized as the main restriction of these strategies (Bradford, Porciello, Balkon, & Backus,2007). Teachers have no motive or time to become expert online system users, thereby restricting their use of creative differentiated instruction. The obstacles to using innovations are understandable, according to Christie and Garrote Jurado (2009), and educators need to be persuaded of the importance of teaching leadership systems if their potential is to be realized. Rogers (2003) argues that new technology adopters need to move through five phases before innovation becomes a regular component of the experience of the individual. The five phases consequently Knowledge, Persuasion, Decision, Implementation and Confirmation.

The use of Blackboard can benefit both educational employees and students. Potential advantages include enhanced accessibility, fast feedback, enhanced bidirectional interactions, monitoring and skill building such as organization, time management, and communication (Bradford et al., 2006; Bradford et al., ( 2007). In terms of accessibility, customers can access Blackboard online at anytime and anywhere (DeNeui & Dodge, 2006), so learners can view and download course materials and other data as well as submit tasks online once they have completed their course. Another study by Heirdsfield, Davis, Lennox, Walker, and Zhang (2007) shows that learners are most attracted by the enhanced accessibility. Although learners may appreciate comfort, internet learning is usually less satisfied with learners than traditional face-to-face teaching (Pillay, Irving, & Tones, 2007).

Students mentioned factors such as the absence of a teaching atmosphere in Blackboard, decreased possibilities for interaction or discussion with other learners and educators, delayed feedback from instructors and a less effective teaching process with learners needed to devote more time to studying the material as the grounds for their discontent. (Liaw, 2008; Yang & Cornelius, 2004). In specific, the absence of instant clarification can slow down the learning process when learners have questions or issues (Belcheir & Cucek, 2001). Thus, student dissatisfaction with online learning experiences appears to arise from Blackboard locations that contain content for both on-campus and distance learners, and some Blackboard sites do not differentiate between the two research methods. All components created for distant research are supplied completely online at this stage in time. All institutional learners both on-campus and distance students must obtain unit materials such as study guides, unit lectures given on the course materials database (CMD) of the university, communication with employees and other students, and evaluation assignments. Additional research resources are available online, such as presentation and tutorial reports. For all learners, audio and video recordings of lessons are also available online. It may also be anticipated that both on-campus and distance learners will take part in online tutorials, group work, wikis, blogs, chat, and discussion forums.

## **2.0 METHOD**

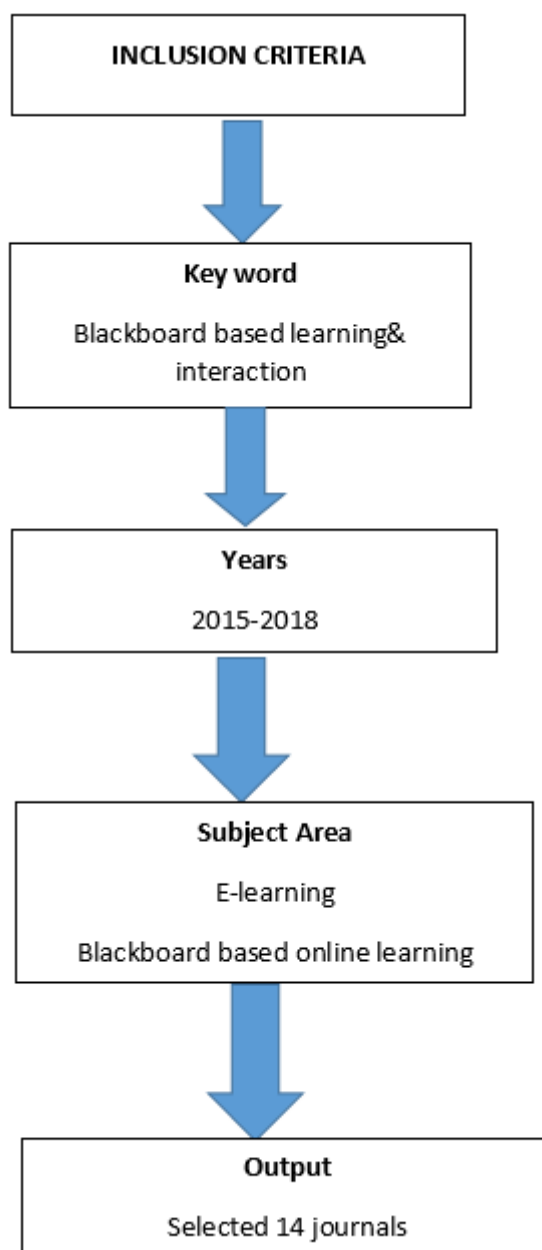
In this study, two research questions were developed: (a) what are the main opportunities and challenges of implementing blackboard based learning in the online education systems? and (b) what are the major causes behind the lack of interest to use this blackboard system among the students? In order to provide an in-depth understanding of these aspects, we explored the literature as the main source for answering these questions.

### **2.1. Searching and screening**

The database search included articles covering the opportunities and shortcoming of using the Blackboard system as E-learning. A number of electronic databases were used to retrieve potential articles such as Cambridge Journals Online, ERIC (Education Resources Information Centre), Emerald, Taylor and Francis Group, and Research Gate). Our search was conducted from 2015 to 2019. We used different keywords when we executed the search, such as “blackboard based learning and communication”, “blackboard based learning and computer-based learning as online learning”. The retrieved articles were then stored and prepared for further screening and selection. Certain inclusion criteria were imposed in

order to exclude studies that are not within the focus of this review. The criteria were as follows, studies are: (a) empirically oriented, (b) using computer-based blackboard learning, (c) focusing on multiple uses of blackboard based learning, and (4) involving university students.

A total of 430 articles from the mentioned databases were retrieved and screened. However, only 209 articles and ten theses were found to meet all inclusion criteria. From these 200, articles that did not use or adequately discuss the role of cloud computing tools in higher education were excluded. The total process of this systematic review has been presented briefly in Figure-1.



**Figure 1. Flow chart of a systematic review**



### 3.0 FINDINGS

The summary report of the selected journals has presented on Table-1. The reviewed findings have been presented following the sequences such as the name of the authors, publication years, journal titles, country, a sample of study and the findings to maintain the purpose of this paper.

Table 1. Summary of selected literature

	Study	Purpose	Outcome
1	Bouznif (2018)	Investigate the student's pursuit intention toward blackboard usage, including the influential role of satisfaction in technology acceptance and use	Satisfaction plays an essential role to predict the continuance intention on the other hand performance expectancy, effort expectancy and superior influence have no effect on continuance intention
2	Liu (2016)	To investigate the effect of blended learning pattern based on blackboard network platform for the course of recruitment and employee management.	This learning pattern extended teaching activities from classroom to outside and met diversified learning demands of students and improve teaching efficiency.
3	Ismail & Salih (2018)	To investigate the impact of Blackboard LMS on teaching Research method course for technology studies among graduate students	Blackboard LMS facilitated research methods candidates learning enhanced their learning outcomes as well as their satisfaction with the learning experiences
4	Al-Mashaqba & Khawaldeh (2016)	Al- To investigate the impact of using E-Learning based on Blackboard applications achievement and skill of solving mathematical problems	The E-learning system through Blackboard applications makes the teaching-learning process easier for female students
5	Moonsamy & Govender (2018)	To investigate the use of a learning management system(LMS), Blackboard among academics at a South African university of technology	Facilitating conditions is the most influential factor explaining the usages if and intention to use LMS among both user and non-users
6	Nyabawa (2016)	To investigate the effect of using Blackboard learn as a learning platform for higher education students	The use of Dynamic Blackboard and integrative Blackboard is quite appropriate for all the courses offered at Botho University.

7	Hussein (2016)	To investigate the effect of Blackboard based instruction on pre-service teachers achievement in the teaching method course	Blackboard based instruction found effective in enhancing the achievement of the students.
8	El-senousy & Alquda (2017)	To investigate the effect of (FCRS) using Blackboard Mash-up tools in enhancing achievement and self-regulated learning skills of university students	The study revealed that FCRS is an effective innovative instructional strategy benefit to enhance achievement and learning experience of the students.
9	Tawalbeh (2018)	To investigate the EFL instructors perceptions of blackboard learning management system	Result revealed that 75% of the instructors have not used Blackboard which affects their effect their perception system and most of the instructor were unfamiliar with the features and functionalities of Blackboard
10	Kuo & Belland (2016)	To investigate the adult learners perceptions of interaction, satisfaction, and performance within an online course using the blackboard platform	Learner-Content interaction and learner instructor interaction were significant predictors for student satisfaction in online settings
11	Al Sholwiy (2016)	To promote EFL learning outside the classroom through the use of Web-based technologies after the adoption of Blackboard in a Saudi University	Results revealed that now web-based learning platform is used to promote learning of English. It also explained the role of web-based technologies(WBTS) in studies learning of English outside the classroom
12	Politis &Politis (2016)	To investigate the relationship between an online synchronous learning environment which is supported by blackboard collaborate and the skills and traits of knowledge acquisition	Easy access of Blackboard collaborate and an effectively designed structure enhanced learners problem understanding and communication
13	Alenezi & Shahi (2015)	Investigate the interactive E-learning through second life with blackboard technology	Blackboard would be the great combination of services toward E-learning because they are many pre-paid formats to assist both Faculty and Students.

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14	Mouakket & Bettayeb (2015)	Investigate the factors influencing continuance usage intention of learning management system through blackboard system by the university students	Perceived usefulness(PU) affected the satisfaction of the Blackboard system. Both PU and satisfaction affected instructors continuance intentions to use Blackboard system.
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## 4.0 DISCUSSION

The objective of this review research was to describe the principal possibilities and difficulties of applying blackboard-based teaching in online education schemes and the primary causes behind the students' absence of interest in using this blackboard system.

### 4.1 Opportunities for Blackboard Learning system

The study revealed that the blackboard-based learning pattern in the internet network platform is the unique advantages of traditional classroom teaching and digital learning. This learning pattern combines a traditional teaching method with e-learning and training of practical skills. Furthermore, blackboard-based learning stimulates students' educational enthusiasm and awareness of collaborative learning, making them a beneficial builder from being a neutral acceptor. In addition, such teaching patterns enhance communication and collaboration between learners and educators and students. The blended teaching model based on the Blackboard network and the subject's features can generate a healthy atmosphere for the innovation capacity of learners (Liu, 2016).

The approach of the Blackboard program provided students with the choice of a suitable place and study time. The system for Blackboard apps considers distinctions between individual learners by making more than one effort for learners to do their duties. The structure of the Blackboard application also provides geographically distributed students the opportunity to enter the university via online courses(Al- Mashaqba, & Al-Khawaldeh, 2016).

In specific, learners viewed Blackboard favorably in respect of affordable characteristics. Accelerated affordability and distribution of resources is a key feature of the valued internet situations of learners. Learners also acknowledged the connections established with other learners and the sharing of ideas made possible by using discussion forums and Add Video chat. Earlier in online discussion forums, the scope for functionality and the opportunity to access a variety of opinions were acknowledged as an important component of Blackboard learning. Students definitely viewed the chance to participate with other learners as an advantage of the online setting and felt that their teaching experience was improved by internet interactions. Likewise, employees recognized Blackboard's integrated characteristics as having the ability to improve the educational experience but generally commented on the time-consuming nature of collaborating with characteristics like wikis, blogs and AV chat (Heirdsfield, Walker, Tambyah, & Beutel, 2011).

Considering the nature and level of challenging lessons provided at Botho University, Dynamic Blackboard and Integrative Blackboard is discovered to be quite suitable for all classes. Based on the information gathered, the use of the various kinds of blackboard has a powerful impact on students' academic performance. The research shows that frequent Blackboard involvement enhances academic achievement for students. For both teachers and learners, the results of this research are very helpful. The results also include the space for teachers to identify the appropriate Blackboard characteristics that are best suited to improving the output of learners in order to obtain the educational outcomes designed. (Nyabawa, 2016).

Based on blackboard training, cooperative and interactive learning instruments are used such as chat rooms, email, virtual classrooms, and conversations. The instrument offers an easy, effective way to send emails to all learners in the group without wasting class time, while the email facility offers opportunities for learners to interact as needed with educators. Optimized internet conversations also enable learners to frequently communicate with each other and the teacher. They also have the benefit of giving students sufficient time to compose their answers carefully before publishing them online. On the other side,

synchronous conversations exist in real space and have a greater feeling of presence on social media, as is obvious in the interactive classroom environment (Malikowski et al., 2007).

Another study revealed that Blackboard-based training also offers more possibilities for university admission to female learners who are denied entry to higher education due to congestion. Moreover, it offers learners the chance to obtain higher education, not residing in one of the main towns where most university campuses are situated. Thus, the change in participation, in particular, the number of female learners in fresh instructional programs and classes, justifies the usefulness for the blackboard-based program that provides them the chance to better manage their home and education. (Hussein, 2016).

The creative area of Blackboard Collaborate motivated learners to become more involved in their process of education emphasize on better knowledge accumulation, communication, and ability to understand problems. Furthermore, simple access to Blackboard Collaborate and intentional structure discovered to motivate learners to become more involved in their learning process leading to enhanced conceptualization, sensitivity and friendliness characteristics of knowledge acquisition. In addition, the Blackboard Collaborate framework encourages the knowledge and communication of the ongoing problem of the learner. The motive of e-learners towards blackboard based learning is the main component in enhancing their knowledge acquisition abilities and characteristics ( Politis, & Politis, 2016).

#### **4.2 Challenges and major causes behind the lack of interest to use this Blackboard system among the students?**

Despite having many possibilities, there are some constraints to blackboard-based teaching. Though any university's educators and professors recognized the opportunities inherent in the more interactive characteristics for human interaction and collaborative learning, they regarded their use more different than the student population did. For teacher education learners, employees still regarded face-to-face interactions and modeling are given in class as the most precious teaching experience. In many respects. Employees were unwilling to encourage lecture video/audio streaming as reasonable options for learners. It has been found from the literature that it is difficult to ensure online learning participation to enhance online learning, we need to enhance. While it is certainly an important aspect of working with remote learners to offer access to learning materials, it is obvious that internet systems sometimes suffered from connection problems that hamper the flow of education (Heirdsfield, Walker, Tambyah, & Beutel, 2011).

As with the fresh technology-based methods, blackboard-based instruction requires more time to infuse into the fields it has lost the popularity to achieve so far. Thus, teachers should recognize the awareness of learners and their ability to use the new technology in their learning practices while preparing educational courses through Blackboard Collaborate. Slower internet connections and older computers may make it tough for students to participate in the planned virtual meetings and acquire the course materials, which may trigger a technologically frustrating issue. This can be solved by informing learners about the appropriate computer requirements, offering them with appropriate technical support and instruction in the use of various software types (Hussein, 2016).

From time to time, learners may experience frequent technical failures. For instance, whether the educational software does not work well with the personal computers or the internet connection fails in the middle of a class, the teacher/learners may waste more time working with the software or repairing the connection than dealing with the teaching material for the goal. The teacher should tell the learner that, since Blackboard-based training is an increasing technology-based strategy, patience is required until its goals are met (Liaw, 2008).

### **5.0 CONCLUSION AND RECOMMENDATION**

The Blackboard-based program evaluation is well placed as it has disclosed enough problems to be addressed. It is essential to review what this review has brought to light before further research are undertaken. Table 1 summarizes all the studies conducted in this industry and the literature has shown its own advantages, weaknesses or problems. Opportunities were described based on general satisfaction on the blackboard learning with digital instruments and intercultural experiences, enhanced understanding of both individual and other cultures. Literature review reveals weaknesses or challenges, most studies tended to report superficial findings without cultural variation, most of which were aimed at measuring the application of Blackboard-based learning tools in the specific university. Despite the growing dependence on internet higher education technologies, especially for distant learners, and the value that learners place

on internet interactions, employees need to view web-based learning management systems like Blackboard as more than just a resource repository. The recommendation is that training courses on instructors' Blackboard-based learning program should concentrate mainly on how technology will help enhance learners' instructional production and achieve customized learning results. It is also suggested that the findings of this research be shared with other greater educational organizations in the nation to persuade them to implement such learning management systems as Blackboard Learn that can benefit them by improving the academic performance of learners and creating a competitive advantage in this worldwide industry. Research on how educational employees perceive the effect of using Blackboard in improving their teaching is also needed, which is not within the scope of this research.

## REFERENCES

- Al-Mashaqba, T., & Al-Khawaldeh, A. (2016). The Impact of Using E-learning Based on Blackboard Applications upon the Achievement and Skill of Solving Mathematical Problems among Preparatory Year Female Students at Najran University. *IOSR Journal of Research & Method in Education*, 6(2), 58-64.
- Al Shlowiy, Ahmed Saad. (2016) "Promoting EFL Learning Outside the Classroom Through the Use of Web-based Technologies After the Adoption of Blackboard in a Saudi University." [http://digitalrepository.unm.edu/educ\\_llss\\_etds/58](http://digitalrepository.unm.edu/educ_llss_etds/58)
- Belcher, M. J., & Cucek, M. (2001). Student perceptions of their distance education courses. Retrieved March 1, 2011.
- Bouzrif, M. M. (2018). Business students' continuance intention toward Blackboard usage: An empirical investigation of the UTAUT model. *International Journal of Business and Management*, 13(1), 120.
- Bradford, P., Porciello, M., Balkon, N., & Backus, D. (2007). The blackboard learning system: The be-all and end-all in educational instruction. *Journal of Educational Technology Systems*, 35(3), 301–314. DOI:10.2190/X137-X73L-5261-5656
- Christie, M. and Garrote-Jurado, R. (2009) Barriers to innovation in online pedagogy, *European Journal of Engineering Education*, Vol. 34, No. 3, pp. 273-279, DOI:10.1080/03043790903038841. Retrieved on 15 October 2016.
- Coates, H. (2007) A Model of Online and General Campus-Based Student Engagement. Assessment and Evaluation in Higher Education. 32 (2), pp. 121–141.
- Deng G.M.(2013).“A comparative study of Moodle, Sakai, Drupal, and Blackboard,” *China Educational Technology*, vol. 11, no. 6, pp. 109-116.
- DeNeui, D. L., & Dodge, T. L. (2006). Asynchronous learning networks and student outcomes: The utility of online learning components in hybrid courses. *Journal of Instructional Psychology*, 33(4).Blackboard Learning System, Blackboard Inc.
- El-Senousy, H., & Alquda, J. (2017). The Effect of Flipped Classroom Strategy Using Blackboard Mash-Up Tools in Enhancing Achievement and Self-Regulated Learning Skills of University Students. *World Journal on Educational Technology: Current Issues*, 9(3), 144-157.
- Heirdsfield, A., Davis, J., Lennox, S., Walker, S. & Zhang, W. (2007). Online Learning Environments: What Early Childhood Teacher Education Students Say. *Journal of Early Childhood Teacher Education*, 28(2), 115-126. Retrieved August 26, 2019, from <https://www.learntechlib.org/p/105369/>.
- Heirdsfield, A., Walker, S., Tambyah, M., & Beutel, D. (2011). Blackboard as an online learning environment: What do teacher education students and staff think? *Australian Journal of Teacher Education (Online)*, 36(7), 1.
- H. P. Nii. (1986). “The blackboard model of problem-solving and the evolution of blackboard architectures. Association for the advancement of artificial intelligence (www.aaai.org),” *AI Magazine*, vol. 7, no. 2, pp. 39-53.
- Hussein, H. E. G. M. (2016). The Effect of Blackboard Collaborate-Based Instruction on Pre-Service Teachers' Achievement in the EFL Teaching Methods Course at Faculties of Education for Girls. *English Language Teaching*, 9(3), 49-67.

- Ismail, A. M. A., & Salih, A. A. (2018). The Impact of Blackboard LMS on Teaching Research Method Course for Technology Studies Graduate Students at the Arabian Gulf University. *International Journal of Information and Education Technology*, 8(2).
- Kuo, Y. C., & Belland, B. R. (2016). An exploratory study of adult learners' perceptions of online learning: Minority students in continuing education. *Educational Technology Research and Development*, 64(4), 661-680.
- Liaw, S. S. (2008). Investigating students' perceived satisfaction, behavioral intention, and effectiveness of e-learning: A case study of the Blackboard system. *Computers & Education*, 51(2), 864-873.
- Liu, H. (2016). An Analysis on Blended Learning Pattern Based on Blackboard Network Platform. *International Journal of Emerging Technologies in Learning*, 11(9).
- Maajoon Alenezi, A., & Kirti Shahi, K. (2015). Interactive e-learning through Second Life with Blackboard Technology. *Procedia-Social and Behavioral Sciences*, 176, 891-897. <https://doi.org/10.1016/j.sbspro.2015.01.555>
- Masi, A. C., & Winer\*, L. R. (2005). A university-wide vision of teaching and learning with information technologies. *Innovations in Education and Teaching International*, 42(2), 147-155.
- Moonsamy, D., & Govender, I. (2018). Use of Blackboard Learning Management System: An Empirical Study of Staff Behavior at a South African University. *EURASIA Journal of Mathematics, Science and Technology Education*, 14(7), 3069-3082
- Market, S., & Bettayeb, A. M. (2015). Investigating the factors influencing continuance usage intention of Learning management systems by university instructors: The Blackboard system case. *International Journal of Web Information Systems*, 11(4), 491-509.
- Nyabawa, R. F. (2016). Technology in Learning: Blackboard usage & its impact on academic performance; A case for Universities in Lesotho. *Int. J. Humanit. Manag. Sci*, 4, 455-461.
- Pillay, H., Irving, K., & Tones, M. (2007). Validation of the diagnostic tool for assessing tertiary students' readiness for online learning. *High Education Research & Development*, 26(2), 217-234.
- Politis, D., & Politis, J. D. (2016). The Relationship Between an Online Synchronous Learning Environment and Knowledge Acquisition Skills and Traits: The Blackboard Collaborate Experience.
- Rogers, E.M. (2003). *Diffusion of innovations (5th ed.)*. New York: Free Press
- Yang, Y., & Cornelius, L. F. (2004). Students' perceptions of the quality of online education: A qualitative approach. Association for Educational Communications and Technology.
- Tawalbeh, T. I. (2018). EFL Instructors' Perceptions of the Blackboard Learning Management System (LMS) at University Level. *English Language Teaching*, 11(1), 1-9.
- Zheng Li., "Study on Blackboard web-based instructional design and teaching evaluation," *Experimental Technology and Management*, vol. 31, no. 6, pp. 175-178, June 2014.

## Why Coding? Why Now? From Coding to Computational Thinking Through Computational Mathematics Problem Based Learning (CM-PBL)

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### ABSTRACT

*4<sup>th</sup> Industrial revolution are spreading around the world, embedding the technology into societies. In the digital revolution, high technological tools and resources are regularly being developed. There has been increased attention on learning coding in education field, in order to nurture sufficient number of young generation to fill in 50 percent of jobs opportunity in science, technology, engineering, and mathematics (STEM) which are computing-related. It is increasingly clear that our new generation need to think critically to solve the ill-structured problems, uncertain and complex real world problems. Computational thinking is beneficial in providing automated or semi-automated solutions in problems solving in combination with critical thinking. Therefore, computational thinking is becoming an important implication in science and mathematics as well as in almost every other fields. This fact is reflected in the recent implementation of computer coding in the Malaysia's school curriculum to nurture 21<sup>st</sup> century skills among students. Computational thinking is one of the conceptual foundations which required combination of data and ideas to solve problems effectively and efficiently. Computational thinking is essential to computing and information science (i.e., algorithmically, with or without the assistance of computers) to solve problems with solutions that are reusable in different contexts. Promoting different kind of skills and abilities among students is important to solve the complexity problem in real world. Thus, it is a challenging task for many instructors to create a learning environment who lack of feasible resources availability and research-based information to redesign their teaching pedagogies. This conceptual framework is aimed at two goals: (1) development of deep learning, connected computational thinking through the mathematical curriculum instructional model which able to enhance students' problem solving abilities and (2) implementation of the designed model to assist teacher in education who has practicing difficulty in elementary classrooms after adopting teacher enactment of problem-based curriculum resources. To achieve these goals, computational mathematics problem based learning (CM-PBL) instructional strategy is developed to promote an active learning environment for classroom management involving problem solving. Rather than emphasizing student learning passively through listening, watching, practicing exercises and imitating isolated skills, the CM-PBL learning framework allowing students to simulate and build their own computational models to support their self-learning and understanding of mathematic concepts. It is also highlights ways that students can evolve from technical skills in using technology to soft engineering skills by using coding knowledge.*

**KEYWORDS:** STEM, Coding, Problem Solving, 21<sup>st</sup> century skills

## **1.0 INTRODUCTION**

Computing enables and drives many technologies that are integrated in today's society. Barr and Stephenson (2011) argued that computing nowadays in principle is heavily influencing every aspect of students' lives and works, from shopping with loyalty cards to conducting scientific researches. Today, majority of the contemporary learners grow up and mastered with internet technologies. Learners spent most of their time on digital music players, videogames, mobiles devices and all other tools from the digital age. Learners possess smartphones and computers which are becoming more sophisticated. But how many of the learners do really understand how these computers, softwares, games and mobile application worked? Through learning basic coding is able to help learners to familiarize with these tech gadgets.

### **1.1 Why integrate computer coding in education?**

Since computer technology evolves rapidly, the science, technology, engineering, and mathematics (STEM) related-jobs have demonstrated unprecedented growth, specifically in computer field. STEM related-jobs are growing three times as fast as non-STEM related-jobs and projected that about 2.4 million STEM related-jobs are unfilled. Approximately half of the STEM related-jobs are in mathematics and computer fields. According to the report from 'Digital Workforce of The Future' conducted by LinkedIn Talent Solutions (2017), digital skills are the top five high demands in Malaysia. In a global market, STEM related-jobs increases innovation and are considered by many to be the most attractive jobs of the future (Langdon, Mckittrick, Beede, Khan, & Doms, 2011).

Computer coding skill which considered as an important skill in these present days plays important roles in STEM. Computer coding is the most crucial element of computing and mutual strategies for developing computational thinking (CT). With the awareness of the importance of computer coding skill, this has caused an increasing approach for introduction of computational coding from an early education of the individual development (Bers, Flannery, Kazakoff, & Sullivan, 2014) until the high education (Allan, Barr, Brylow, & Hambruch, 2010), combining computer coding skill with other competence skills such as writing, reading, and maths. It is believed that utilization of different coding tools in the process of the early curriculum education may be influential on the level of development of various skills such as "behaving like a computer". Computational modelling is an effective approach for learning challenging mathematics concepts (Hambruch, Hoffmann, Korb, Haugan, & Hosking, 2009). Felleisen and Krishnamurthi (2009) agreed that alignment of mathematics with computer coding will bring mathematics to life.

Many countries implemented rapid changes in the primary and secondary school curriculum, in order to incorporate computational thinking (CT) as part of their 21<sup>st</sup> century skills. In the recent years, many countries around the world have integrated computer coding in their primary and secondary education curriculums, such as UK (England), Finland, Belgium, Czech Republic, Malta, France, Austria, Bulgaria, Hungary, Denmark, Estonia, Lithuania, Ireland, Israel, Poland, Spain, Slovakia, Portugal and so on. One of our goals in our vision 2020 is to raise a sufficient number of qualified STEM graduates to establish a scientific and innovative society (Ministry of Education Malaysia, 2013). According to STEM Initiative in Malaysia Education Blueprint 2013-2025 by Ministry of Education Malaysia (2013), national and school based assessments are focused on creative and problem solving skills. Computer coding is able to develop CT, logical reasoning, critical thinking and at the same time helping students to understand the 21<sup>st</sup> century world. Research studies reported that computing education and CT have the potential to develop students' problem solving skills, higher-order of thinking, communication skills and collaboration in ways that can advance learning across the curriculum and empower students to be creative inventors with technology. The fundamental subjects currently taught in school generally introduced reading, writing, and mathematics which are accepted because all these subjects have cross-disciplinary benefits. As quoted by Bill Gates "Learning to write coding stretches your mind, and helps you think better, creates a way of thinking about things that I think is helpful in all domains". Moreover, this approach is able to ensure all students access to the computing education and engage with core content in new and creative ways. Wing (2006) advocated the necessity of computational thinking in the education by stating that, "To reading, writing, and arithmetic, we should add computational thinking to every child's analytical ability"



## 1.2 Do learners really need computational thinking?

“computational thinking is a fundamental skill for everyone,  
not just for computer scientists”.

adapted from Wing (2006)

Wing (2006) emphasized that computational thinking (CT) is one of the daily life skills that everyone needs, rather than just being a programming skill used only by computer scientists. In fact, CT was adopted in our daily life unconsciously. For example, if lost something, we will recall the steps to look for it. CT was first presented by Papert (1987), and since then its definition, teaching, and evaluation have been discussed by various scholars (Grover & Pea, Roy, 2013). Wing (2008) argued that CT complements thinking in mathematics and engineering with a focus on designing systems that helped to solve complex problems that humans encountered (Lu & Fletcher, 2009). Therefore, current educators have to create and promote facilities for learning CT.

CT is a set of pedagogical techniques that have been used to benefit learners across STEM areas, independent of their interests or backgrounds in technology (Grover & Pea, Roy, 2013; Honey, Pearson, & Schweingruber, 2014). In order to achieve this goal, using “computational thinking language” to incorporate computing concepts in core content areas has been proposed. CT approach is useful as learners may develop strong mental models and enables all kind of things to get done in a broader range of disciplines (Barr & Stephenson, 2011). CT is mainly active to foster learners’ problem solving skills and abilities significantly when they begin to think in creative ways. Lu and Fletcher (2009) mentioned that learners need to learn CT as early and often, with an emphasis on understanding of these two concepts: “using computational processes to create virtual artefacts not on their manifestations in particular coding languages” and “skills for abstracting and representing information”. Game design is a popular way to teach computer coding and extensively for fostering CT among learners. According to Resnick et al. (2009), game creation transforms learners into no longer passive consumers of the digital technology. Computational practices, which are problem solving practices, occur in the process of computer coding such as abstracting and modularising, testing and debugging, experimenting and iterating, reusing and mixing. Aho (2012) further argued that CT involves thought processes in formulating problems, so their solutions can be represented as computational steps and algorithms.

CT language is “not a programming language, but rather vocabularies and symbols that can be used to annotate and describe computation, abstraction, and information, besides providing notation around where semantic understanding of computational processes can be hung” (Howard, Barrows & Tamblyn, 1980; Lu & Fletcher, 2009). The prominent features of CT revolve around abstraction, automation and analysis to be useful for understanding how learners can use CT to figure formulation of a problem. Abstraction is referred to identifying and extracting relevant information to define main ideas. In problem solving, abstraction defined as stripping down a problem to what is believed to be its bare essentials. While abstraction implies the process of capturing the generalize characteristics or actions into one set that can be used to represent all specific instances (Wing, 2008). Automation is a labour saving process in which a computer or machines do repetitive tasks express of a solution compared to the processing power of a human. Analysis is a reflective practice that refers to the execution and evaluation of a solution. In summary, CT involves “solving problems, designing systems, and understanding human behaviour, by drawing on the concepts fundamental to computer science” (Wing, 2006).

## 2.0 LITERATURE REVIEW: PROBLEM SOLVING

Polya (1973) who pioneered the problem solving quoted that “solving a problem means finding a way out of a difficulty, a way around an obstacle, attaining an aim that was not immediately understandable.” Green, Alison and Gilhooly (2005) stated that “problem solving in all its manifestations is an activity that structures everyday life in a meaningful way.” Therefore, the kind of problem will dictate the type of cognitive skill necessary to solve the problem; linguistic skills are used to read about a certain problem and debate about it, memory skills are to recall prior knowledge and so on. CT has some relationship to problem solving which also described that CT as problem-solving activity. Wing (2006, 2008) incorporates solving problem skills by using computer science concepts in her definition of CT.

A requirement for a computing device is introduced by Barr and Stephenson (2011) who stated that the essence of CT refers to have using computers with the purpose of solving problems encountered. Computer simulation provides an opportunity for students to learn by doing because students can learn through the interactions with the problem involved in the simulation and the specific task information (Anzai & Simon, 1979). The computer simulations provide an external framework which facilitates learners interacting and visualizing with complication information involved in a problem. Thus, students are more likely to transfer knowledge acquired from computer simulations to other problems (Kumar & Sherwood, 2007). Their study found out that simulations can be helpful in improving the understanding of complex concepts, but students may not know how to interact with sophisticated simulations in order to solve a problem. Thus, to effectively apply computer simulations for education purposes, educators need to provide additional instructional supports. In addition, students need to acquire a certain amount of knowledge so that they can interact with the computer simulations to achieve their learning goal. Through computer simulations, students can gain knowledge and promote their self-confidence, critical thinking and problem solving skills (Jeffries, 2005).

Coding is often considered as a pathway to enhance the learning of problem solving skills as it is associated with the formulation of an explicit computational model of ideas to solve problems (Wenger, Brown, & Greeno, 1987). Such a computational problem solving approach for learning largely relies on Papert's (1972) constructionism who asserting that it is more important to help learners to construct and debug theories through constructing a project rather than to teach them knowledge. Logo, a visual enabled learning applications have been proposed to allow children have active learning experience to manipulate concepts and encouraging them to solve problems by themselves. Many program development environments such as Alice (Dann, Copper, & Pausch, 2008), Scratch (Monroy-Hernández & Resnick, 2008), and the Greenfoot system (Kölling & Henriksen, 2005), provided students with visualization and interaction techniques which enable them to construct simulation games by themselves. Lai and Yang (2011) conducted a study to investigate the effect of visualised programming on the learners' problem solving abilities and logical reasoning skills. Their participant was 6<sup>th</sup> graders who took Scratch programming course over one semester. The researchers found that the effect on problem solving abilities was significant, especially with reason of prediction, whereas there was no significant effect on logical reasoning skills. They concluded that "... integrating visualised learning coding and problem solving strategies can enhance the learner's problem solving skills". Underlining the importance of problem solving ability, the researchers also suggested that the teachers of elementary schools should adopt Scratch programming as part of their computer literacy course. Computational problem solving, which involves the development of computer programs to solve a problem, is considered to be the core competency of computer science education because computer science involves broad problem solving skills, rather than pure technically centred activity (Kay et al., 2000).

## **2.1 Literature Review: Problem Based Learning**

Subject based approach might not be the most effective instructional which prepares for future professionals education, so that with this concern, problem-based learning (PBL) was developed (Boud, 1985). The problem-based learning (PBL) process was pioneered by Barrows and Tamblyn in the 1960. PBL is part of this tradition of meaningful, experiential learning organized around the investigation, justification, and resolution of meaningful problems (Barrows, 2000; Torp & SageSara, 1998). In PBL, students learnt by problems and reflecting on their experiences (Howard, Barrows & Tamblyn, 1980). PBL is well suited to help students becoming active learners because it situates learning in real-world problems and made students to be responsible for their learning.

In PBL, the students' learning is initiated and consequently driven by a need to solve the problems which are authentic problems, ill-structured, real-world problem, rather than well-structured. In PBL, the use of ill-structured problems as the starting point for learning to encourage students to develop their ability to integrate knowledge from foundation disciplines to deal with the complicated problem situations in real world settings (Wilkerson & Gijsselaers, 1996). Hmelo-Silver (2004) described PBL as an instructional strategy in which students learn through facilitated problem solving that focus on a complex problem which does not have a single final solution. PBL instructional encouraged both the integration of prior knowledge and the fundamental skills to lifelong learning.

Learners can construct extensive and flexible knowledge, besides learning the facts of cross-discipline learning for critical competence. Attainment of knowledge is coherently organized around the deep principles in a domain (Chi, Feltovich, & Glaser, 1981). It has a dual emphasis on helping learners to develop strategies and construct knowledge (Collins, Brown, & Newman, 1987; Hmelo & Ferrari, 1997; Kolodner et al., 2003). There are few researchers have been on a general agreement that PBL is an effective instructional in promoting students' problem solving skills and reasoning strategies that are transferable to new problems (Albanese & Mitchell, 1993; Dabbagh & Denisar, 2005; Strobel & van Barneveld, 2009). Patel, Groen, and Norman (1991,1993) observed that PBL learners more likely to use hypothesis-driven reasoning to explain a clinical problem than that of traditional learners. PBL learners have been taught the ways to generate hypothesis through the problem solving process. Hmelo-Silver (2004) noted that PBL students identified what they need to know and learnt in order to solve a problem through integration of their prior knowledge and the new content knowledge to the problem, reflection on what they learned and the effectiveness of the strategies employed. Implementations of PBL typically made the learners to work as effective collaborator in a small group. It is essential that each individual is working productively with others as they need to share information and inform the group's decision-making process in relation to the problem (Schmidt & Moust, 2000). Main advantages of PBL is enhancing intrinsic motivation of learners when responsibility for the solution to the problem, as well as the learning process (Savery & Duffy, 1996). The summarized Barrows's problem based learning cycle is represented in Figure 1.

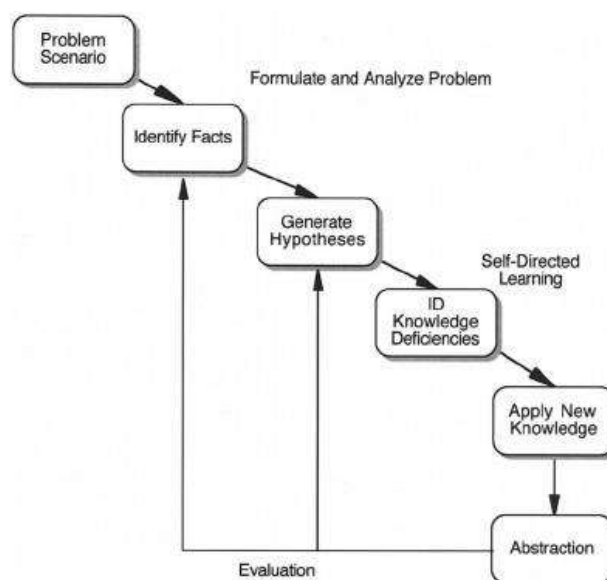


Figure 1 The problem-based learning cycle, adapted from (Barrows, 2000)

Improving problem-solving skills is one of the essential promises of PBL. The results of PBL researches are greatly supported by this assumption. Gallagher, Stepien and Rosenthal (1992) conducted an experiment using an interdisciplinary PBL course named as Science, Society and Future (SSF) on gifted high-school students with a comparison group of high-school students. They found that PBL students showed a significant increase in the use of the problem-finding step from pre-test to post-test, which was a critical problem-solving technique. In contrast, in the post-test, the comparison group tended to skip the problem-finding step and move directly from the fact-finding step to the implementation step. The results suggested that PBL is effective in fostering students' development of appropriate problem-solving processes and skills. Moreover, PBL has shown a positive impact on students' abilities to apply basic science knowledge and transfers problem-solving skills in real-world professional or personal situations. Woods (1996) reported that employers praised McMaster University for producing PBL chemical engineering graduates' who possessed outstanding problem-solving skills and job performances. Compared to other new employees who typically required one to one and a half years on-the-job training, to be able to solve problems independently; the PBL graduated students already can think for themselves and solve problems upon their graduation days.

### **3.0 METHODOLOGY: DESIGN PEDAGOGY BRIDGING COMPUTATION AND MATHEMATICS**

The design of this pedagogy is based on the preferences and capabilities of contemporary learners. Computational mathematics problem based learning (CM-PBL) theoretical framework as summarized in Table 1 defines the problem solving competency as the capacity of an individual to effectively engage mathematical equations (mathematical models) in a computer relation (simulation models); whereby more problem solving strategies attempt to solve a problem by a corresponding software model and gaining new knowledge required to come to a solution, and pooling their prior knowledge and skills to reach that solution. However, it builds more specifically upon the following theories and ideas:

- CT proposed by Wing (2006) that engagement of five cognitive processes are the crucial in the success of solving problems creatively and efficiently which are problem decomposition, problem reformulation, recursion, abstraction and systematic testing.
- Barrows (2000) who promoted problem based learning cycle, enhanced the problem solving skills and social collaboration in mathematics education.
- Robertson and Howells (2008) proposed that rather than playing educational computer games, students learning can be made more effective when they create or redesign computer games.
- Lappan, Philips, Winter, Shroyer and Fitzgerald (1986) designed a transition from show-and-practice to problem-based learning which able to help students developing deep understanding and connected to mathematical understanding.
- Wing (2006) proposed that teaching CT as a formative skill on par with arithmetic, the key points of CT means thinking algorithmically and with the ability to apply mathematical concepts to develop more efficient, fair and secure solutions.
- According to Resnick (2013) who promoted the use of code in addition to learning mathematical and computational ideas, people are also learning strategies for solving problems, designing projects, and communicating ideas. He added that these skills are useful for everyone regardless of 21<sup>st</sup> century competences.

Table 1. Computational Mathematics Problem Based Learning (CM-PBL) Theoretical Framework

	<b>Abstraction</b>	<b>Automation</b>	<b>Analysis</b>
<b>Understand and Identify Problems</b>	Ignore the details and identify the facts and properties by breaking the problems into manageable units	Identify the interaction relationship of rules with a computer underlying the problems	-Are the correct abstraction made? -Are the results prediction of the relationship of prior knowledge of mathematics to the task correct?
<b>Devising a Plan</b>	Generate hypotheses about possible solutions by modelling the core aspects and patterns of problems with the concept and achieving goals	Reframe a problem with heuristic strategies into a solvable using digital and stimulation tools to mechanize problem solutions	Are there any strategies that are not taken into account?
<b>Execute</b>	Identify the deficiency knowledge to the problem and look for new knowledge	Construct a system based on preceding information and the problem solving.	Do the mathematics concepts incorporated into the system make the problems solved?
<b>Review and Reflection</b>	Abstract and repairing new knowledge gained with the problem solving.	Take purposeful action to derive solutions by using a computer	Evaluate and providing feedback that knowledge exerts on the problem solving process.

A technology enhanced learning environment for tertiary mathematics education is therefore proposed. CM-PBL module to teach students to solve the problems and program a videogame of their own design using mathematics concepts. CM-PBL focused on problem solving skills, mathematical concept, coding concepts and a software developments process. CM-PBL is used to foster problem solving skills, according to the literatures about using CT and problem based learning approaches to help students through deep understanding and applying mathematics concepts. CM-PBL promotes the use of computer to enhance learners' problem solving skills by embodying mathematical concept with a sequenced set of problems, affording opportunities for developing conceptual understanding. CM-PBL pedagogy is proposed in this study by combining the theories of CT, mathematical thinking and problem based learning.

### 3.1 Elements of The Proposed Pedagogy

When CM-PBL is proposed across diverse content areas, computational thinking (CT) influences the students approach and solves problems. In providing multiple ways to approach problems, CT helps to ensure success for the problem-solver (Sneider, Stephenson, Schafer, & Flick, 2014). Providing students with the coding tools to find new or unique methods to solve problems will also strengthen students' confidence in their academic abilities. CM-PBL allows learners to create projects including games, animated stories, music videos, science projects, simulations, and tutorials. Learners will experience various solutions of designing their own learning process which is powerful learning experience that supports understanding of contents and knowledge transferring by examining content units with a critical perspective (Strampel & Oliver, 2007). CM-PBL provides learners with new opportunities to learn coding and applying their mathematics concept to program their own game with different coding tools designed. Learning coding is considered as a process encompassing problem solving steps (Gomes & Mendes, 2007). Meanwhile, learning coding steps is able to develop problem solving skills (Antonakos, 2011). It is not enough to know and implement only the programming codes, CT emerges only when a specific problem is perceived. The implementation of CM-PBL affects the ability of students' problem solving skills during problem-solving processes.

CM-PBL pedagogy is seen as key to gaining skills for developing problem solving skills and others also called 21<sup>st</sup> century skills such as critical thinking, creativity, computational thinking, social-intercultural skills, communication and collaboration, productivity, leadership and responsibility (Durak & Güyer, 2018; Lau & Yuen, 2011). In this study, CT is a necessary knowledge, skill and attitudes for problem solving which also considered as an important skill in the learning coding process. CT encompasses understanding and defines the problem, finding suitable solutions, thinking patterns such as reflecting and abstracting (Wing, 2006). This pedagogy is effective in the development of different high level thinking skills and knowledge areas which enables the development of computer skills in learners. CT also includes some other skills such as data analysis, modelling and summarizing data in order to use the computers to formulate the process and problem solving.

#### 4.0 DISCUSSION AND CONCLUSIONS

This study has presented an innovate pedagogy for mathematics learning based on STEM, integrated mathematics and computer coding. Creativity and enjoyment are seen as the key to affective motivation, leading to an attitude change towards mathematics. An integrated computer system and dynamic mathematics environment might be enhanced by creating game realisations which provide a constructionist environment for learning mathematical concepts. However, the idea of CT is to integrate computer coding and approaches into all disciplines requiring problem-solving skills. CT is an important component for future education and it requires our immediate attention. CT curriculum must implement as early as the primary grades, and then continues till higher education. To thoroughly transform CT into one of the four primary skills, there are writing, reading, arithmetic, and CT. This study will be of benefit to instructors who wish to conduct their solving mathematics word problems into computing and empower CT and problem solving skills.

#### REFERENCES

- Aho, A. V. (2012). Computation and computational thinking. *The Computer Journal*, 55(7), 833–835. <https://doi.org/10.1093/comjnl/bxs074>
- Albanese, M. A., & Mitchell, S. (1993). Problem-based learning: a review of literature on its outcomes and implementation issues. *Academic Medicine*, 68(1), 52–81.
- Allan, V., Barr, V., Brylow, D., & Hambrusch, S. (2010). Computational thinking in high school courses. *SIGCSE'10 - Proceedings of the 41st ACM Technical Symposium on Computer Science Education*, 390–391. <https://doi.org/10.1145/1734263.1734395>
- Antonakos, J. L. (2011). *Computer Technology and Computer Programming: Research and Strategies*. Oakville, Canada: Apple Academic Press, Inc.
- Anzai, Y., & Simon, H. A. (1979). The theory of learning by doing. *Psychological Review*, 86(2), 124–140. <https://doi.org/10.1037/0033-295X.86.2.124>
- Barr, V., & Stephenson, C. (2011). Bringing computational thinking to K-12: what is Involved and what is the role of the computer science education community? *ACM Inroads*, 2(1), 48–54. <https://doi.org/10.1145/1929887.1929905>
- Barrows, H.S. (2000). *Problem-Based Learning Applied to Medical Education* (Revised Ed). Springfield: Southern Illinois University, School of Medicine.
- Barrows, Howard S., & Tamblyn, R. M. (1980). *Problem-Based Learning: An Approach to Medical Education*. New York: Springer Publishing Company, Inc.
- Bers, M. U., Flannery, L., Kazakoff, E. R., & Sullivan, A. (2014). Computational thinking and tinkering: Exploration of an early childhood robotics curriculum. *Computers and Education*, 72, 145–157. <https://doi.org/10.1016/j.compedu.2013.10.020>
- Boud, D. (1985). Problem-based learning in perspective. In D. Boud (Ed.), *Problem-based learning in education for the professions* (pp. 13–18). Retrieved from [https://books.google.com.my/books/about/Problem\\_based\\_learning\\_in\\_education\\_for.html?id=mwjuAAAAMAAJ&redir\\_esc=y](https://books.google.com.my/books/about/Problem_based_learning_in_education_for.html?id=mwjuAAAAMAAJ&redir_esc=y)
- Chi, M. T. H., Feltovich, P. J., & Glaser, R. (1981). Categorization and Representation. *Cognitive Science*, 5(2), 121–152. [https://doi.org/10.1207/s15516709cog0502\\_2](https://doi.org/10.1207/s15516709cog0502_2)

- Collins, A., Brown, J. S., & Newman, S. E. (1987). Cognitive Apprenticeship: Teaching the craft of reading, writing, and mathematics. In *Center for the Study of Reading*. Illinois.
- Dabbagh, N., & Denisar, K. (2005). Assessing team-based instructional design problem solutions of hierarchical versus heterarchical web-based hypermedia cases. *Educational Technology Research and Development*, 53(2), 5–22.
- Dann, W. P., Copper, S., & Pausch, R. (2008). *Learning To Program with Alice* (2nd Editio). New Jersey, USA: Prentice Hall Press.
- Durak, H. Y., & Güyer, T. (2018). Design and development of an instructional program for teaching programming processes to gifted students using scratch. In J. Cannaday (Ed.), *Curriculum Development for Gifted Education Programs* (1st ed., pp. 61–99). Hershey, Pennsylvania: IGI Global.
- Felleisen, M., & Krishnamurthi, S. (2009). Viewpoint: Why computer science doesn't matter. *Communications of the ACM*, 52(7), 37–40. <https://doi.org/10.1145/1538788.1538803>
- Gallagher, S. A., Stepien, W. J., & Rosenthal, H. (1992). The Effects of Problem-Based Learning On Problem Solving. *Gifted Child Quarterly*, 36(4), 195–200. <https://doi.org/10.1177/001698629203600405>
- Gomes, A., & Mendes, A. J. (2007). Learning to program - difficulties and solutions. *ICEE 2007-International Conference on Engineering Education*. Retrieved from [https://www.researchgate.net/publication/228328491\\_Learning\\_to\\_program\\_-\\_difficulties\\_and\\_solutions](https://www.researchgate.net/publication/228328491_Learning_to_program_-_difficulties_and_solutions)
- Green, Alison, J. K., & Gilhooly, K. (2005). Problem solving. In N. Braisby & A. Gellatly (Eds.), *Cognitive Psychology* (1st ed., pp. 347–381). New York: Oxford University Press.
- Grover, S., & Pea, Roy, D. (2013). Computational Thinking in K–12: A review of the state of the field. *Educational Researcher*, 42(1), 38–43. <https://doi.org/10.3102/0013189X12463051>
- Hambrusch, S., Hoffmann, C., Korb, J. T., Haugan, M., & Hosking, A. L. (2009). A multidisciplinary approach towards computational thinking for science majors. *Proceedings of the 40th SIGCSE Technical Symposium on Computer Science Education, SIGCSE 2009*, 183–187. <https://doi.org/10.1145/1539024.1508931>
- Hmelo-Silver, C. E. (2004). Problem-Based Learning: What and How Do Students Learn? *Educational Psychology Review*, 16(3), 235–266. <https://doi.org/10.1023/B:EDPR.0000034022.16470.f3>
- Hmelo, C. E., & Ferrari, M. (1997). The problem-based learning tutorial: Cultivating higher order thinking skills. *Journal for the Education of the Gifted*, 20(4), 401–422. <https://doi.org/10.1177/016235329702000405>
- Hoffer, B. M. (2012). Satisfying STEM Education Using the Arduino Microprocessor in C Programming. *ProQuest Dissertations and Theses*, 220. Retrieved from [http://login.proxy.library.vanderbilt.edu/login?url=http://search.proquest.com/docview/1069255002?accountid=14816%5Cnhttp://sfx.library.vanderbilt.edu/vu?url\\_ver=Z39.88-2004&rft\\_val\\_fmt=info:ofi/fmt:kev:mtx:dissertation&genre=dissertations+%26+theses&sid=](http://login.proxy.library.vanderbilt.edu/login?url=http://search.proquest.com/docview/1069255002?accountid=14816%5Cnhttp://sfx.library.vanderbilt.edu/vu?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:dissertation&genre=dissertations+%26+theses&sid=)
- Honey, M., Pearson, G., & Schweingruber, H. (2014). *STEM integration in K-12 education: Status, prospects, and an agenda for research*. Washington, D.C.: National Academies Press.
- Jeffries, P. R. (2005). A Frame Work for Designing, Implementing, and Evaluating Simulations Used as Teaching Strategies in Nursing. *Nursing Education Perspectives*, 26(2), 96–103.
- Kay, J., Barg, M., Fekete, A., Greening, T., Hollands, O., Kingston, J. H., & Crawford, K. (2000). Problem-Based Learning for Foundation Computer Science Courses. *Computer Science Education*, 10(2), 109–128. [https://doi.org/10.1076/0899-3408\(200008\)10:2;1-c;ft109](https://doi.org/10.1076/0899-3408(200008)10:2;1-c;ft109)
- Kölling, M., & Henriksen, P. (2005). Game programming in introductory courses with direct state manipulation. *Proceedings of the 10th Annual SIGCSE Conference on Innovation and Technology in Computer Science Education*, 59–63.
- Kolodner, J. L., Camp, P. J., Crismond, D., Fasse, B., Gray, J., Holbrook, J., ... Ryan, M. (2003). Problem-Based Learning Meets Case-Based Reasoning in the Middle- School Science Classroom : Putting Learning by Design (tm) Into Practice. *Journal of the Learning Sciences*, 12(4), 495–547. [https://doi.org/10.1207/S15327809JLS1204\\_2](https://doi.org/10.1207/S15327809JLS1204_2)
- Kumar, D. D., & Sherwood, R. D. (2007). Effect of a problem based simulation on the conceptual understanding of undergraduate science education students. *Journal of Science Education and Technology*, 16(3), 239–246. <https://doi.org/10.1007/s10956-007-9049-3>

- Lai, A. F., & Yang, S. M. (2011). The learning effect of visualized programming learning on 6th graders' problem solving and logical reasoning abilities. *2011 International Conference on Electrical and Control Engineering, ICECE 2011 - Proceedings*, 6940–6944. <https://doi.org/10.1109/ICECENG.2011.6056908>
- Langdon, D., Mckittrick, G., Beede, D., Khan, B., & Doms, M. (2011). STEM: Good Jobs Now and for the Future. Retrieved August 28, 2019, from [https://www.purdue.edu/hhs/hdfs/fii/wp-content/uploads/2015/07/s\\_iafis04c01.pdf](https://www.purdue.edu/hhs/hdfs/fii/wp-content/uploads/2015/07/s_iafis04c01.pdf)
- Lappan, G., Phillips, E., Winter, M. J., Shroyer, J., & Fitzgerald, W. (1986). *Middle grades mathematics project: Probability*. Menlo Park, California: Addison-Wesley Publishing Company.
- Lau, W. W. F., & Yuen, A. H. K. (2011). Modelling programming performance: Beyond the influence of learner characteristics. *Computers and Education*, 57(1), 1202–1213. <https://doi.org/10.1016/j.compedu.2011.01.002>
- LinkedIn Talent Solutions. (2017). *The digital workforce of the future: Acquire, build and grow tech talent*. Retrieved from [https://business.linkedin.com/content/dam/me/business/en-us/talent-solutions/cx/2017/PDFs/digital\\_workforce\\_future.pdf](https://business.linkedin.com/content/dam/me/business/en-us/talent-solutions/cx/2017/PDFs/digital_workforce_future.pdf)
- Lu, J. J., & Fletcher, G. H. L. (2009). Thinking about computational thinking. *SIGCSE'09-Proceedings of the 40th ACM Technical Symposium on Computer Science Education*, 260–264. Retrieved from <http://www.cs.cmu.edu/>
- Ministry of Education Malaysia. (2013). Malaysia education blueprint 2013-2025: Preschool to post-secondary education. Retrieved from <https://www.moe.gov.my/muat-turun/penerbitan-dan-jurnal/dasar/1207-malaysia-education-blueprint-2013-2025/file>.
- Monroy-Hernández, A., & Resnick, M. (2008). Empowering kids to create and share programmable media. *Interactions*, 15(2), 50–53. <https://doi.org/10.1145/1340961.1340974>
- Papert, S. (1972). Teaching Children Thinking. *Programmed Learning and Educational Technology*, 9(5), 245–255. <https://doi.org/10.1080/1355800720090503>
- Papert, S. (1987). *A critique of technocentrism in thinking about the school of the future* (pp. 1–11). pp. 1–11. Sofia, Bulgaria.
- Patel, V. L., Groen, G. J., & Norman, G. R. (1991). Effects of conventional and problem-based medical curricula on problem solving. *Academic Medicine*, 66(7), 380–389.
- Patel, V. L., Groen, G. J., & Norman, G. R. (1993). Reasoning and Instruction in Medical Curricula. *Cognition and Instruction*, 10(4), 335–378. [https://doi.org/10.1207/s1532690xci1004\\_2](https://doi.org/10.1207/s1532690xci1004_2)
- Polya, G. (1973). *How To Solve It Mathematical Method*. New Jersey: Princeton University Press.
- Resnick, M. (2013). Learn to Code , Code to Learn. Retrieved August 28, 2019, from EdSurge website: <https://www.edsurge.com/n/2013-05-08-learn-to-code-code-to-learn>
- Resnick, M., Maloney, J., Monroy-Hernandez, A., Rusk, N., Eastmond, E., & Brennan, K. (2009). Scratch-Programming for all. *Communications of the ACM*, 52(11), 60–67.
- Robertson, J., & Howells, C. (2008). Computer game design: Opportunities for successful learning. *Computers and Education*, 50(2), 559–578. <https://doi.org/10.1016/j.compedu.2007.09.020>
- Savery, J. R., & Duffy, T. M. (1996). Problem based learning: An instructional model and its constructivist framework. In B. Wilson (Ed.), *Constructivist Learning Environments: Case Studies in Instructional Design* (pp. 135–148). Retrieved from papers3://publication/uuid/EDBDB157-6A28-4CAB-B02B-2D3A29A2847D
- Schmidt, H. G., & Moust, J. H. C. (2000). Factors affecting small-group tutorial learning: A review of research. In D. H. Evenson & C. E. Hmelo (Eds.), *Problem-based learning: A research perspective on learning interactions* (pp. 19–51). Mahwah, New Jersey: Lawrence Erlbaum Associates Publishers.
- Sneider, C., Stephenson, C., Schafer, B., & Flick, L. (2014). Computational Thinking in High School Science Classrooms: Exploring the Science “Framework” and “NGSS.” *Science Teacher*, 81(5), 10–15. <https://doi.org/10.2505/4/tst14>
- Strampel, K., & Oliver, R. (2007). Using technology to foster reflection in higher education. *Proceedings Ascilite Singapore 2007 - ICT:Providing Choices for Learners and Learning*, 973–982. Retrieved from <http://www.ascilite.org.au/conferences/singapore07/procs/strampel.pdf%0A>
- Strobel, J., & van Barneveld, A. (2009). When is PBL More Effective? A Meta-synthesis of Meta-analyses Comparing PBL to Conventional Classrooms. *Interdisciplinary Journal of Problem-Based Learning*, 3(1), 44–58. <https://doi.org/10.7771/1541-5015.1046>



- Torp, L., & SageSara. (1998). *Problems as Possibilities: Problem-Based Learning for K-12 Education* (2nd Editio). Retrieved from <https://www.amazon.com/Problems-Possibilities-Problem-Based-Learning-Education/dp/0871202972>
- Wenger, E., Brown, J. S., & Greeno, J. (1987). *Artificial intelligence and tutoring systems: Computational and cognitive approaches to the communication of knowledge* (E. Wenger, J. S. Brown, & J. Greeno, Eds.). [https://doi.org/10.1016/0950-7051\(88\)90091-3](https://doi.org/10.1016/0950-7051(88)90091-3)
- Wilkerson, L., & Gijsselaers, W. H. (1996). Concluding Comments. *New Directions for Teaching and Learning*, 68, 101–104. <https://doi.org/10.1002/tl.37219966814>
- Wing, J. M. (2006). Computational Thinking. *Communications of the ACM*, 49(3), 33–35.
- Wing, J. M. (2008). Computational thinking and thinking about computing. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 366(1881), 3717–3725. <https://doi.org/10.1098/rsta.2008.0118>
- Woods, D. R. (1996). Problem-based learning for large classes in chemical engineering. *New Directions for Teaching and Learning*, 1996(68), 91–99. <https://doi.org/10.1002/tl.37219966813>

# **INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)**

## The Benefits of Augmented Reality Technology in Higher Education: A Review of the Literature

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### ABSTRACT

*Current development in Educational technology is changing traditional teaching approaches, making learning more interesting and effective. Today augmented reality (AR) technology is regarded as one of the frontiers in educational technology. Its utilization in teaching and learning has brought a revolution in the education sector. The researchers have explored the application of AR technology in different aspects of education. This research is aimed to answer the question: What are the benefits of AR technology at the tertiary education level? The systematic review and qualitative content analysis were utilized to answer the research question and the information gathered for this study are from empirical studies conducted in higher education. The findings of this study show that the application of AR technology in higher education is beneficial to college students' learning performance and boost learning satisfaction and acceptance. Besides, the findings reveal AR technology has a significant effect on their learning motivation, interaction and collaborative learning. The results also point out that AR technology can reinforce content understanding. From the literature review, the researchers found that there are strong reasons to apply AR technology in university classroom. However, although AR technology has positive effect on learning in higher education, more research studies that are exploratory in nature need to be conducted in the future to get a deeper understanding of AR technology's effects in several aspects of education.*

**KEYWORDS:** Augmented reality technology, Higher education, Benefits

### 1.0 INTRODUCTION

Augmented reality (AR) technology as a sort of frontier technology is utilized in education and this technology is bringing revolution in the education area. Augmented reality technology enables the virtual and real objects together in the same space which can interact with each other in real time (Azuma, 1997). Virtual objects are superimposed on the real images to provide users with access to rich and meaningful multimedia content.

The results of the research studies point out that AR technology has advantages in different levels of education (Solak & Cakir, 2015; Hsu, 2017; Hsieh & Lee, 2008). In a study conducted in kindergarten, He, Ren, Zhu, Cai and Chen (2014) claim that AR application providing the virtual pictures, the meaning and pronunciation of English words enhances pre-school students' learning achievement. Another study implemented by Hwang, Wu, Chen and Tu (2016) show that the AR-based gaming approach can improve students' learning attitudes and learning performance in elementary school. Besides, in university, the application of AR technology also provides a better learning experience (Bicen & Bal, 2016). Cheng (2017) implements an AR book reading activity among 153 university students and the results reveal that in general, the students have lesser cognitive load, stronger motivation, and more positive attitudes when they use the AR book. Another study conducted by Chen, Feng, Mo, Cheng, Guo, and Huang (2011) also focuses on university. The findings show the vivid display form of AR technology enables faster comprehension of

complex spatial problems, students can benefit greatly from it during their learning processes. The application of AR technology in higher education is considered as a new direction attributed to the evident advantages of this technology.

## **2.0 RESEARCH QUESTION**

The purpose of this study is to explore the advantages of AR technology in higher education and answer the question: What are the benefits of AR technology at the tertiary education level?

## **3.0 METHODOLOGY**

### **3.1 Background**

A systematic review technique is employed in this study to address the research question by identifying, critically evaluating, and integrating the findings of all relevant studies addressing one or more research questions (Siddaway, 2014). Additionally, this technique can allow the researchers to summarise the existing information about some phenomenon in an unbiased and thorough approach (Kitchenham, 2004). Systematic review is suitable to summarise and present a fair evaluation regarding the benefits and limitations of the existing evidence.

### **3.2 Criteria for considering studies for the review of literature**

In order to answer the research question, researchers collected the articles published in journals indexed in ERIC, Springer and WILEY within the past ten years. Meanwhile, the journal articles which are related to higher education including university, college or vocational college and can access to the full text were selected.

### **3.3 Data analysis**

Kitchenham (2004) points out data extraction is how the information required from each primary study would be obtained. In this research, a qualitative content analysis was utilized to obtain and analyse the content of the articles and this systematic approach of analysing data is beneficial in judging, generalizing and comparing the results (Corbin & Strauss, 1990). Besides, in qualitative content analysis, the material is to be analyzed step by step, namely, coding the text, developing categories to capture the meaning of data portions and using the categories or themes to address the research questions (Schreier, 2012). This approach is suitable for this study to analyse the advantages of AR technology' application in tertiary education.

## **4.0 FINDINGS**

### **4.1 The benefits of Augmented Reality Technology in Higher Education**

Based on the analysis of the literature review, the themes that emerged are AR technology can (i) boost learning satisfaction and acceptance, (ii) promote learning performance, (iii) enhance motivation, interaction and collaborative learning, and (iv) reinforce understanding of learning content.

#### **4.1.1 Boost learning satisfaction and acceptance**

In the research studies regarding the application of AR technology, some researchers focus on the effect of AR technology on college students' acceptance and satisfaction in higher education. The research results show the various virtual display forms of AR technology obtain college students' positive usage attitude and higher satisfaction (Önal, Ibili & Çaliskan, 2017; Chanlin, 2014). In machinery operation learning, Monroy Reyes, Vergara Villegas, Miranda Bojórquez, Cruz Sánchez and Nandayapa (2016) utilize AR technology's natural maker located in the machine, incorporating 3D models, animations, video, text instruction, which provides a combining real and virtual environment to guide unexperienced students to learn how to use machinery. The research results show students have positive attitude and good acceptance about the use of the mobile AR system. Another study conducted by Santos et al. (2016), compared with non-AR application, also yields the similar results. Although AR system is utilized in English vocabulary learning in this study, both studies point out the advantage of connecting the vivid learning content and real environment makes students have higher satisfaction in AR-based learning.

In Özcan, Özkan and Sahin' study (2017), the display form of AR technology such as 3D graphics is utilized in Ottoman Turkish learning. Delello, McWhorter and Camp's research (2015) also utilize the vivid display form of AR technology, but the difference is that AR technology is used in AR platform called Aurasma to learn three different disciplines namely education, human resource development and marketing. Both research results point out participants have positive attitude and better satisfaction on vivid display form of AR technology. Besides, compared with some existing learning approaches, these forms can overcome some teaching difficulties. In Yang, Mei and Yue' study (2018), AR technology's application overcomes the difficulty of demonstrating the dangerous and unstable elements. Students have positive attitude on using AR technology to learn chemical elements, which attributes to the vivid, direct and interactive visualization of invisible elements.

Apart from that, the other characteristics of AR technology also boost learning satisfaction and acceptance. In dental morphology learning, students are highly satisfied with AR system because compared with video learning, AR system is very easy to use and it can reinforce students' learning, which attributed to the advantages that it can be used anywhere and anytime (Juan, Alexandrescu, Folguera & García, 2016). In another study conducted by Borrero and Márquez (2012), compare with other teaching approaches in the remote labs' learning, AR technology with ease of use, interactivity and graphic interface produce positive effect on students' usage attitude.

AR technology as the advanced and cutting-edge technology, its technical characteristics show strong advantages in higher education and obtain good acceptance from college students. Meanwhile, compared with the existing teaching methods, AR technology has also brought the new teaching changes and received higher acceptance and satisfaction, which is crucial for an emerging technology.

#### **4.1.2 Promote learning performance**

The effect of AR technology on learning performance has been focused and explored by most researchers and the research findings show that AR technology can enhance the learning performance in higher education (Richardson, Sammons & Delparte, 2018)

In Cubillo, Martin, Castro and Boticki's study (2015), AR system called UNED ARLE which can add virtual content including videos, sound files, images, 3D objects and animated 3D objects without any programming skills is applied in the learning of the health and safety topics. Students can interact with the system through AR button or gestures. The results show that, compared with non-AR system, college students have better learning achievements with AR system. Another investigation conducted by Sirakaya and Cakmak (2018) also utilize AR system to provide the virtual information as explanation and yield similar results, but differing from using button and gestures, this study uses natural markers located in hardware pieces which can make students directly interact with hardware to learning computer hardware. Both studies point out compared with non-AR approach, the advantages of display form and interaction of AR technology have positive effect on students' achievement.

Besides, location-based AR technology also shows its advantage for learning performance. In local history learning, a research about AR-mobile guidance system is explored by Chang, Hou, Pan, Sung and Chang (2015). Compared with other approaches, the AR-guidance enable students to identify a historical site, viewing the related information provided by the system, which improves the learning achievement about the local history. In another study implemented by McMahon, Cihak and Wright, (2015) also utilize the location-based AR technology as a navigation tool for college students with intellectual disabilities and autism. In this research, the AR application can deliver digital information when students view the physical world, which helps students finish the travel task more effectively and successfully

In other relative difficult courses, undergraduate students use AR technology as the teaching and learning tool also show the advantages on learning performance (Borrero & Márquez, 2012). In an engineering course, using AR technology with vivid multimedia such as movies, images or 3D content can effectively facilitate learning performance in this abstract and difficult subject (Shirazi & Behzadan, 2015). This finding is also verified in science and engineering's remote laboratory. Andujar, Mejías and Márquez (2011) point out utilizing AR technology combining the virtual 3D content and model provides the chance for the disciplines like science and engineering that emphasis on the practical learning to improve the learning outcomes.

According to the current literature, the research findings show AR technology can combine diverse multimedia information to rich learning content and enhance learning performance in different disciplines

of higher education, especially in relative difficult subjects. Besides, the location-based approach also has different advantage to enhance learning performance.

#### **4.1.3 Enhance motivation, interaction and collaborative learning**

The review of literature also exposes AR technology's affordances on different display form and incorporating different virtual content can effectively enhance learning motivation. A study conducted by Liu, Tan and Chu (2010) points out the virtual figures of AR technology and combining 2D barcode to construct a context-aware learning environment make learning more interesting and increase the college students' motivation in English learning. Another study conducted by Solak and Cakir (2015) also verified that AR technology can enhance the motivation in English vocabulary' learning, but it adopts AR technology' different display form which is incorporating vivid animation and the words' pronunciation to learn English vocabulary. In Cheng' research (2017), the form of AR book is utilized to learn on the Hakka culture of Taiwan and the researcher assesses the relationship in cognitive load, the motivational factors and learning performance. The result points out AR technology brings a low level cognitive load but enhance the motivation so that students have more enjoyment in learning the Hakka culture. Besides, the form of AR book is also utilized by Ferrer-Torregrosa, Torralba, Jimenez, García and Barcia (2015), although this research focuses on the learning of anatomy of the lower limb. Its results show that compared with using books and video, AR technology providing visual virtual images can increase undergraduate students' motivation in the learning process.

Moro, Štromberga, Raikos and Stirling' research (2017) also confirm the aforementioned finding that AR technology incorporating different virtual content can facilitate effectively students' enjoyment. The difference is that this study allows students to interact with the model by touching the screen in structural anatomy learning, which enhances students' interactivity at the same time. The similar finding is revealed in another study carried out by Wang (2017), although AR technology is applied in a video editing course, the result also points out, compared with online-based support, the vivid display form and combining touch-sensitive screen of AR technology can increase learning motivation and learning interaction. Another display form of AR technology also show their advantages in enhancing motivation and interaction. In Berry and Board' research, (2014). Students interact with the 3D structure of the proteins by moving the handheld maker also effectively enhance learning motivation and interaction.

Besides, AR technology' enjoyable characteristic create a way of gamification to learn. Students have positive attitude on AR technology's gamification method and suggest AR technology should be utilized in all course with gamification way (Bicen & Bal, 2016). A case study carried out by Xu, Song, Yu and Tavares (2017) also indicates that in personalised learning, the AR technology combining the gamification way enhances enthusiasm in computer science.

Meanwhile, other research studies also provide the evidence to show that using AR technology not only can enhance motivation and interaction, meanwhile, it is able to facilitate collaborative learning (Delello, 2014). In the research of De Lucia, Francese, Passero and Tortora (2012), students who use the mobile AR-ACCampus system share the multimedia information in different location of campus and interact with the system. It finds that AR technology in the course of "computer history" has a significant and effective impact on interaction and collaborative learning. Another study conducted by Wang, Duh, Li, Lin and Tsai (2014) reveals similar finding, although the research context and application of AR technology is different which is using AR-maker and combining 3D virtual cubes. The result points out differing from traditional 2D simulation system, AR simulation system facilitate effectively the students' collaborative inquiry learning in physic class.

According to the analysis above, it is obvious that compared with other learning approaches, the features of AR technology can bring more interest, enhancing the learning motivation, meanwhile, boost interaction and collaborative learning. Besides, the review also shows that interaction and participation are always close to learning interest in AR-based learning environment.

#### **4.1.4 Boost understanding of learning content**

According to the current literature, the characteristics of AR technology show distinguished spatial interpretation ability and can enhance understanding of learning content. Sungkur, Panchoo and Bhoyroo (2016) point out AR technology can easily visualize what is happening about the conception with providing the supplementary information. This result is also verified by Ferrer-Torregrosa et al., (2015). In their study, the instructor utilizes the AR technology to provide the anatomical region and information about the

anatomical structures to improve the students' spatial interpretation. Besides, according to Montoya, Díaz and Moreno (2017), when using AR technology to design the teaching process, static and dynamic content can be utilized in it. It finds that two types both are effective for learning the concepts of the fundamental of electronics course and using the dynamic type like AR technology's 3D animation description content has better the understanding of the concepts. Another study conducted by Reyes-Aviles and Aviles-Cruz (2018) echoes this finding, researchers claim that using the virtual black windows and yellow squares of AR technology to display the analysis results of electrical engineering course also yield similar results, although the discipline and display form is different, the results also point out undergraduate students is satisfied with AR application and think AR system can facilitate the understanding of the learning content about resistive circuits.

Slightly differing from the aforementioned finding, in Vega Garzón, Magrini and Galembeck' research (2017). AR technology's display form which allows students to visualize the 3D molecular structure to learn the basic concepts is revealed that it is able to improve the undergraduate students learning skills such as collaborative learning, visual literacy skills and peer review to facilitate the understanding of the concept of metabolism. Besides, in another study conducted by Martin-Gonzalez, Chi-Poot and Uc-Cetina (2016) in the physics and mathematics not only uses viral objects like 3D visualization but also allows students interact with three different basic operations of vectors. The findings indicate that AR technology enhances the understanding of the concepts that are not easy to explain in the traditional approach. Similarly, in mechanism learning, Wang, Ong and Nee (2018) also point out interacting with the AR-based animation and information can improve theory learning.

According to the result of the review above, it can be found that in the application of AR technology, the way that supplying the extra information or the 3D structure to enhance understanding of content is always utilized and effective. Besides, the interaction between students and supplementary material is also beneficial to boost understanding of learning content.

## 5.0 CONCLUSION AND RECOMMENDATIONS

According to the analysis above, the related research studies have revealed that compared with existing learning approaches, the application of AR technology acquires better satisfaction and acceptance. Besides, AR technology also shows more advantages to enhance learning performance, especially in relative difficulty courses. In AR-based learning environment, its excellent characteristics boost learning motivation, collaborate learning and interaction. Meanwhile, it also shows the advantage in the understanding of learning content, visualization and spatial interpretation ability. According to the review, the application of AR technology in higher education has positive effect on learning process and result. However, few studies concern on formation process of effects and the reasons or principles behind the effects, which is crucial for exploring novel AR technology and need to be studied deeply in the future.

## REFERENCES

- Andujar, J. M., Mejías, A., & Márquez, M. A. (2011). Augmented reality for the improvement of remote laboratories: an augmented remote laboratory. *IEEE transactions on education*, 54(3), 492-500.
- Azuma, R. T. (1997). A survey of augmented reality. *Presence: Teleoperators & Virtual Environments*, 6(4), 355-385.
- Berry, C., & Board, J. (2014). A Protein in the palm of your hand through augmented reality. *Biochemistry and Molecular Biology Education*, 42(5), 446-449.
- Bicen, H., & Bal, E. (2016). Determination of Student Opinions in Augmented Reality. *World Journal on Educational Technology: Current Issues*, 8(3), 205-209.
- Borrero, A. M., & Márquez, J. A. (2012). A pilot study of the effectiveness of augmented reality to enhance the use of remote labs in electrical engineering education. *Journal of science education and technology*, 21(5), 540-557.
- Chang, Y. L., Hou, H. T., Pan, C. Y., Sung, Y. T., & Chang, K. E. (2015). Apply an augmented reality in a mobile guidance to increase sense of place for heritage places. *Journal of Educational Technology & Society*, 18(2).

- Chen, H., Feng, K., Mo, C., Cheng, S., Guo, Z., & Huang, Y. (2011). Application of augmented reality in engineering graphics education. *2011 IEEE International Symposium on IT in Medicine and Education 2*, 362-365.
- Cheng, K. H. (2017). Reading an augmented reality book: An exploration of learners' cognitive load, motivation, and attitudes. *Australasian Journal of Educational Technology*, 33(4).
- Cubillo, J., Martin, S., Castro, M., & Boticki, I. (2015). Preparing augmented reality learning content should be easy: UNED ARLE—an authoring tool for augmented reality learning environments. *Computer Applications in Engineering Education*, 23(5), 778-789.
- Corbin, J. M., & Strauss, A. (1990). Grounded theory research: Procedures, canons, and evaluative criteria. *Qualitative sociology*, 13(1), 3-21.
- De Lucia, A., Francese, R., Passero, I., & Tortora, G. (2012). A collaborative augmented campus based on location-aware mobile technology. *International Journal of Distance Education Technologies (IJDET)*, 10(1), 55-73.
- Delello, J. A. (2014). Insights from pre-service teachers using science-based augmented reality. *Journal of computers in education*, 1(4), 295-311.
- Delello, J. A., McWhoRteR, R. R., & Camp, K. M. (2015). Integrating augmented reality in higher education: A multidisciplinary study of student perceptions. *Journal of Educational Multimedia and Hypermedia*, 24(3), 209-233.
- Ferrer-Torregrosa, J., Torralba, J., Jimenez, M. A., García, S., & Barcia, J. M. (2015). ARBOOK: development and assessment of a tool based on augmented reality for anatomy. *Journal of Science Education and Technology*, 24(1), 119-124.
- He, J., Ren, J., Zhu, G., Cai, S., & Chen, G. (2014). Mobile-based AR application helps to promote EFL children's vocabulary study. *2014 IEEE 14th International Conference on Advanced Learning Technologies*, 431-433.
- Hsieh, M. C., & Lee, J. S. (2008). AR marker capacity increasing for kindergarten English learning. In *International Multi Conference of Engineers and Computer Scientists*, 1, 663-666.
- Hsu, T. C. (2017). Learning English with augmented reality: Do learning styles matter?. *Computers & Education*, 106, 137-149.
- Hwang, G. J., Wu, P. H., Chen, C. C., & Tu, N. T. (2016). Effects of an augmented reality-based educational game on students' learning achievements and attitudes in real-world observations. *Interactive Learning Environments*, 24(8), 1895-1906.
- Juan, M. C., Alexandrescu, L., Folguera, F., & García, I. G. (2016). A Mobile Augmented Reality system for the learning of dental morphology. *Digital Education Review*, (30), 234-247.
- Kitchenham, B. (2004). Procedures for performing systematic reviews. *Keele University*, 33(2004), 1-26.
- Liu, T. Y., Tan, T. H., & Chu, Y. L. (2010). QR code and augmented reality-supported mobile English learning system. In *Mobile multimedia processing*, 7-52.
- Martin-Gonzalez, A., Chi-Poot, A., & Uc-Cetina, V. (2016). Usability evaluation of an augmented reality system for teaching Euclidean vectors. *Innovations in Education and Teaching International*, 53(6), 627-636.
- McMahon, D., Cihak, D. F., & Wright, R. (2015). Augmented reality as a navigation tool to employment opportunities for postsecondary education students with intellectual disabilities and autism. *Journal of Research on Technology in Education*, 47(3), 157-172.
- Monroy Reyes, A., Vergara Villegas, O. O., Miranda Bojórquez, E., Cruz Sánchez, V. G., & Nandayapa, M. (2016). A mobile augmented reality system to support machinery operations in scholar environments. *Computer Applications in Engineering Education*, 24(6), 967-981.
- Montoya, M. H., Díaz, C. A., & Moreno, G. A. (2017). Evaluating the effect on user perception and performance of static and dynamic contents deployed in augmented reality based learning application. *Eurasia Journal of Mathematics, Science & Technology Education*, 13(2), 301-317.
- Moro, C., Štromberga, Z., Raikos, A., & Stirling, A. (2017). The effectiveness of virtual and augmented reality in health sciences and medical anatomy. *Anatomical sciences education*, 10(6), 549-559.
- Önal, N., İbili, E., & Çaliskan, E. (2017). Does Teaching Geometry with Augmented Reality Affect the Technology Acceptance of Elementary School Mathematics Teacher Candidates?. *Online Submission*, 8(19), 151-163.



- Özcan, M. F., Özkan, Â., & Sahin, N. (2017). The Influence of the Augmented Reality Application on Students' Performances in Ottoman Turkish Readings. *Universal Journal of Educational Research*, 5(n12B), 27-33.
- Reyes-Aviles, F., & Aviles-Cruz, C. (2018). Handheld augmented reality system for resistive electric circuits understanding for undergraduate students. *Computer Applications in Engineering Education*, 26(3), 602-616.
- Richardson, R., Sammons, D., & Delparte, D. (2018). Augmented Affordances Support Learning: Comparing the Instructional Effects of the Augmented Reality Sandbox and Conventional Maps to Teach Topographic Map Skills. *Journal of Interactive Learning Research*, 29(2), 231-248.
- Santos, M. E. C., Taketomi, T., Yamamoto, G., Rodrigo, M. M. T., Sandor, C., & Kato, H. (2016). Augmented reality as multimedia: the case for situated vocabulary learning. *Research and Practice in Technology Enhanced Learning*, 11(1), 4.
- Schreier, M. (2012). *Qualitative content analysis in practice*. Sage Publications.
- Shirazi, A., & Behzadan, A. H. (2015). Content Delivery Using Augmented Reality to Enhance Students' Performance in a Building Design and Assembly Project. *Advances in Engineering Education*, 4(3), 3.
- Siddaway, A. (2014). What is a systematic literature review and how do I do one. *University of Stirling*, (I), 1.
- Sirakaya, M., & Kilic Cakmak, E. (2018). Effects of augmented reality on student achievement and self-efficacy in vocational education and training. *International Journal for Research in Vocational Education and Training*, 5(1), 1-18.
- Solak, E., & Cakir, R. (2015). Exploring the Effect of Materials Designed with Augmented Reality on Language Learners' Vocabulary Learning. *Journal of Educators Online*, 12(2), 50-72.
- Sungkur, R. K., Panchoo, A., & Bhoyroo, N. K. (2016). Augmented reality, the future of contextual mobile learning. *Interactive Technology and Smart Education*, 13(2), 123-146.
- Vega Garzón, J. C., Magrini, M. L., & Galembeck, E. (2017). Using augmented reality to teach and learn biochemistry. *Biochemistry and Molecular Biology Education*, 45(5), 417-420.
- Wang, H. Y., Duh, H. B. L., Li, N., Lin, T. J., & Tsai, C. C. (2014). An investigation of university students' collaborative inquiry learning behaviors in an augmented reality simulation and a traditional simulation. *Journal of Science Education and Technology*, 23(5), 682-691.
- Wang, Y. H. (2017). Using augmented reality to support a software editing course for college students. *Journal of Computer Assisted Learning*, 33(5), 532-546.
- Wang, Y., Ong, S. K., & Nee, A. Y. C. (2018). Enhancing mechanisms education through interaction with augmented reality simulation. *Computer Applications in Engineering Education*, 26(5), 1552-1564.
- Xu, H., Song, D., Yu, T., & Tavares, A. (2017). An Enjoyable Learning Experience in Personalising Learning Based on Knowledge Management: A Case Study. *Eurasia J. Math. Sci. Technol. Educ*, 13, 3001-3018.
- Yang, S., Mei, B., & Yue, X. (2018). Mobile Augmented Reality Assisted Chemical Education: Insights from Elements 4D. *Journal of Chemical Education*, 1060-1062.

## The Key Characteristics of Mobile Learning for Employee's Development in Kuwait Workplace: A Literature Review

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### ABSTRACT

*The literature on mobile learning focusing on characteristics for employee's development in the workplace usually differentiates between user experience, motivation, individuality, usability, flexibility and connectivity. Scholars highlight operationalisation, implementation, technical support and the evaluation of mobile learning environments. As stated by some authors, successful workplace learning, and mobile learning have become significant priorities in government ministries and organisations. However, the characteristics of mobile learning for employee's development also requires an established framework that is systemic. Within the perspective of workplace learning in Kuwait, insight on the impact of adopting mobile learning can be gained from Kuwait government policies and incentives in the employee's development. Employee training, in particular, aims at the of dissemination technological and professional abilities throughout the workplace, facilitating the continued and incremental adaptation of using mobile learning for employee's development. The literature on Mobile learning characteristics has focused predominantly on user and technology, underestimating the effects of the traditional learning process in the workplace. Understanding the key characteristics of mobile learning is essential in supporting the employee's development in the workplace as the adoption of mobile learning encourages innovation in the workplace environment. Based on these considerations, this paper is purposed determine the key characteristics of mobile learning for employee's development in Kuwait workplace. To achieve this, the study conducts a review of existing studies that have analysed the characteristics of mobile learning to support employee's development. Methodical studies and proper summaries of the literature are employed to identify and categorise the results of all primary studies on the key characteristics of mobile learning for employee's development. Considering the various variables that impact the employee's development process, theoretical contributions were explored and categorised into four study streams: mobile learning, mobile learning characteristics, workplace learning, and the Kuwait context. Our review reveals that only a few publications have focused significantly on studying the function of mobile learning in workplace learning. It also highlights the fact that the research on the employee's development through mobile learning remain few and fragmented.*

**KEYWORDS:** Mobile learning characteristics, Workplace learning, Literature review, Employee's development, Conceptual framework

### 1.0 INTRODUCTION

The appearance of a new way of learning needs to be applied to training, which is also the future study focus on educational technology. Mobile learning has the following characteristics such as flexibility, timely, virtual and trans-time-space, popularisation and personalisation, Interactivity and universality (Cheng, 2015; Jiugen, & Ruonan, 2016). Further, mobile learning has different characteristics. The main characteristic of mobile learning is the ubiquitous, private, interactive, collaborative, blended, portable size of mobile tools and instant information (Ozdamli, & Cavus, 2011).

Because of the development of communications technology, the Internet and information, eLearning has become a notable place to advance human resource development (HRD) practice and study. Also, both eLearning and workplace learning (WPL) have become significant priority areas (Toh-Heng, 2016; Ng, & Lam, 2018). Therefore, one of HRD's main objectives in organisations is to adjust the changing requirements of WPL and employee's performance. Also, several organisations have used eLearning as delivery systems for their training (Moe, & Blodgett, 2000), which provides more opportunities for enhancing problem-solving abilities, improving higher-level thinking skills, and achieving learning efficiency (Chen, Lee, & Chen, 2005; Liaw, 2004).

In addition, In the domain of WPL and mobile learning, Pimmer and Pachler (2014) defined the processes of reaching to know, and of being possible to work successfully in, and across, new and always changing contexts, including learning for, at and across work, by methods of mobile technologies. Therefore, many of today's mobile learning "solutions" tend to offer eLearning content on mobile technologies (Swanson, 2008).

However, mobile learning is one of the subjects that has been criticised for concentrating on the study of the utilise of mobile technologies rather than learning problems (Reeves, & Reeves, 2015a; Reeves, & Reeves, 2015b) that would enhance learning and achieve trainees aims.

Therefore, the aim of this study to combining both concerns (workplace learning and mobile learning), this study reviews the literature of key characteristic of mobile learning for employees' development in Kuwait workplace based on the essential characteristic of mobile learning and how can be adapted in training by mobile learning technologies from the concept of eLearning. In this study, the researchers review the accomplishments of numerous studies on mobile learning characteristics and mobile learning workplace learning, systematise the studies of mobile learning characteristics learning workplace learning in employee's development from the literature into a cohesive taxonomy.

## **2.0 RESEARCH QUESTION**

This study aims to answer the question 'what is the key characteristic of mobile learning for employee's development in Kuwait workplace?'

## **3.0 METHOD**

The area of this study is covered by the essential keywords, specifically, 'mobile learning', 'characteristics' and 'workplace learning'. The following databases were chosen to search for scientific papers such as the ScienceDirect, the IEEE Xplore digital database of scholarly and technical literature, the Education Resources Information Centre (ERIC) database, the Emerald Publishing, the SpringerLink and Google Scholar. These databases cover training in the workplace and technical literature and offer extensive understandings into researchers' work in a wide yet related to the field of disciplines.

Studies were chosen by searching literature sources; then filtering were performed in three repetitions. In the first repetition, duplicate articles were removed, and only articles published in the past five years (2015– 2019) were collected. In the second repetition, the articles were removed according to their titles and abstracts, and articles outside of the area of our field were eliminated. In the third repetition, the articles were removed by reading the full text and excluding articles beyond the area of our field and which do not fulfil our criteria, as shown in A mix of keywords in several forms were utilized, such as 'mobile learning', 'm-learning', 'hand-held', 'tablets', 'iPad', 'ubiquitous learning', 'digital learning', 'mobile device', 'digital technology', 'workplace learning', 'work-based learning', 'training', 'transfer learning' and 'on the job training', combined with the 'OR', 'AND' and 'NOT' operators. We did not exclude journals and conference articles because we deemed these two views to be the most likely to contain up-to-date and suitable scientific works relevant to our survey.

### **3.1 Eligibility Criteria**

The articles that fulfilled our criteria were contained in our work. The initial purpose was to map the research area into a general and taxonomy that contains two categories acquired from a previous study of the literature with no constraints. After deleting duplicate articles among databases, we excluded the papers through three repetitions of filtering and screening when the papers did not fulfil our eligibility criteria. Papers were excluded if they focus on a specific aspect of mobile learning in education, and their target is

general educational technology. Our work focuses on mobile learning characteristics, workplace learning, employee's development, Kuwait context.

### **3.2 Data collection and analysis process**

For the simplification of the liquidation process, all included papers were read, analysed and summarised according to their initial categories. A systematic literature review was used; thereby, the data taken from the journal articles were analysed. The research performed a full-text reading on all papers. Several highlights and notes on the reviewed works and a running classification of all the papers enabled us to produce the proposed taxonomy. In order to have an excellent comprehension of the content, the articles were read and re-read at least twice before the coding and method memo proceedings were started. A thematic analysis was conducted to arrange the data into categories and to create connections between them.

## **4.0 FINDING**

### **4.1 Mobile Learning Kuwait Context**

Kuwait is moving to become an information-based community, with advanced learning technology-based systems being driven to the foreground to create a culture of knowledge development. However, despite this possible, Kuwait is delayed behind in conditions of their learning systems, and it continues to face several challenges regarding eLearning, specifically mobile learning adoption (Khan et al., 2015). Mobile learning may further extend the flexibility of eLearning irrespective of learners' location utilising mobile technologies with wireless technologies (Cheng, 2015). In Kuwait, however, mobile learning is still a rather new concept and term.

This paper investigated the existing literature relating to mobile learning, especially in the Kuwaiti context. The research needs the existing literature to understand mobile learning in Kuwait to situate this article within the context of broader mobile learning research by the method of taxonomy. The paper also examines the main mobile learning key characteristics, mobile learning workplace learning and employee's development in Kuwait, which the current paper takes place.

The results of the initial query search of (25) articles in mobile learning in Kuwait context from 2010 to 2019, after a full scan of the titles and abstracts of the papers. Moreover, after the final full-text reading, all articles were in the field of education and from this taxonomy, we found there may no articles yet in workplace learning in Kuwaiti context.

The researchers collect the purposes of each article to clear the aim of this paper after the taxonomy and categories. In the studies of (Alajmi, & Al-Hadih, 2017); (Al Behairi, 2016); (Aldhafeeri, & Alajmi, 2016); (Al-Furaih, & Al-Awidi, 2018); (AlHajri, Al-Sharhan, & Al-Hunaiyyan, 2017); (Al-Hunaiyyan et al., 2017); (Al-Hunaiyyan & Al-Hajri, 2018); (Al-Hunaiyyan, Alhajri, & Al-Sharhan, 2018); (Al-Hunaiyyan, Alhajri, & Al-Sharhan, 2017); (Al-Hunaiyyan, Al-Sharhan, & Alhajri, 2017); (Alkhezzi, & Al-Dousari, 2016); (Al-Menayes, 2014); (Alraqqas, & Al-Salamin, 2016); (Dashti, & Aldashti, 2015); (Dashti, & Dashti, 2017); (Dashti, & Yateem, 2018); (Sulaiman, & Dashti, 2018); (Mostafa et al., 2018); (Safar, 2018) it was clear that the primary purposes of the authors interest were about writing in the field of schools, language, social media and higher education.

Based on previous literature it seems that mobile learning in Kuwait context needs to expand the fields, not just for the school environment and higher education, but there is another field needs to develop and enhance the technology with such as training in the workplace because of the advantages of mobile learning for e-training in the job. In the next sections will discuss the literature from previous papers about the characteristics of mobile learning and mobile learning workplace learning for employee's development.

### **4.2 Key Characteristic of Mobile Learning**

#### **4.2.1 Technological Factors**

Mobile technologies are part of daily activities and utilised at participants' judgment; allowed individuals to fluidically move between multiple communities, both physical and network (Grant, 2019). For instance, Attenborough and Abbott (2018) explain their learners' successful and challenging utilises of mobile technologies for their coursework. As well as, mobile learning applications need to be quick and easy to set up and install in any system or device, reconfigurable without any issues and difficulties, all its

components may be replaceable, fast and easy to upgrade and revise which drives to availability in any environment (Sarrab, Al-Shihi, & Al-Manthari, 2015). Also, Kaliisa, Palmer and Miller (2019) indicated that learners utilised mobile technologies such as mobile devices mainly for informal learning and designers of mobile applications, content and learning management systems needs to devise user-friendly technologies and platforms to guarantee consistency and ease of usage (Biddix et al., 2016). The main characteristic in previous articles was about the flexibility that makes the users comfortable with mobile technologies.

Mobile learning considered the range to which learning content is variable or flexible, also, learning content may vary, adapt and often been applied by adapting founded on context and the learner (Grant, 2019). For instances where this kind of adaptivity has taken is in place-based or location-based learning, where learning objectives and contents are tied to a specific geographic site (Jarvis et al., 2016). Furthermore, Grant (2019) stated that other potential adaptation could include navigation, assessment, control, feedback, support, learning activities. Furthermore, mobile learning environments need to continuum based on time mobility among the instructor and the learner which able to achieve temporal mobility with asynchronous communications, such as email, SMS text messaging and social media and synchronous access to an instructor may occur when the instructor and the learner are together at the same time (Grant, 2019).

Moreover, the case study of Sarrab, Al-Shihi and Al-Manthari (2015) focused on analysing the characteristic of mobile learning tools such as the availability of mobile learning applications is involved with the processing and response time which is relevant to the time percentage of the application use. Also, Cochrane et al. (2017) reported the application of mobile virtual reality simulations deployment to mobile devices. Naturally, data services and networks may also be always available, affording consistent network access and allowing participants to use many of the other characteristics, such as accessing sounds, images, and videos through fieldwork (Jarvis et al. 2016). However, Sarrab, Al-Shihi and Al-Manthari (2015) stated that one of the main issues of the mobile learning performance is the energy utilisation, mobile technologies should not exhaust much energy, using a suitable storage management machine, utilised the existing input and output devices to the most significant potential extent. To provide and enhance the quality of the displayed photos and the transmitted audio pack. The characteristic in previous articles was about mobile tools that make the mobile technologies more friendly to the users.

Grant (2019) states that mobile data networks such as WIFI, cellular, Bluetooth and Near Field Communication (NFC) have connected learners to devices or services, devices and services to other devices and services, and learners to other individuals. Also, Hsu et al. (2015) stated that the personalised context-aware recommendation (PCAR) mobile learning system offers personalised learning content anytime and anywhere according to a participant's learning-log and according to their site and environment through a 3G, 4G, or wireless network which records the learning behaviours of individual participants. Virtual -time-space can be the characteristic of the previous paper that makes the participants feel free and mobility the learning.

#### **4.2.2 Nontechnological Factors**

Grant (2019) demonstrated the mobile learning provides learner independence and requires self-direction that is learning throughout times and location, needs self-regulation; however, standards for informal self-direction learning has not been persistent (Bartholomew et al. 2017). To boost learners' use intention through their external motivators and internal motivator of mobile learning, mobile learning suppliers should reduce learners' time stress and site restrictions within the mobile learning environments to cause more learners to pleasantly relish interactive experiences in mobile learning (Cheng, 2015). Further, mobile learning obliterates the lines of formal and informal learning, or at the very least, connections informal learning to formal learning, mentioned as semi-formal learning; this kind of education and learning considered both formal components and informal components for mobile learning, stated as semi-formal learning (Grant, 2019). Bano et al.'s (2018) used of semi-formal learning as out-of-classroom settings defined primarily as locations. The previous articles characteristic was interactive between the users and learning methods.

The learner can be able to move about while employing the device, access data and networks, or utilise content fixed within an application, the location of the participant, the device, or the content cannot influence learning (Grant, 2019). Further, participants have appropriated mobile technologies, data services, and applications for their social practice (Bar et al., 2016). Sarrab, Al-Shihi and Al-Manthari (2015)

reported that the learners should be able to use and access mobile learning applications regardless of their age, ability, condition; Also, mobile learning application employed protocols need to be understandable, usable and uncomplicated to learn. As well as, mobile technology provides more opportunities into education (Alhassan 2016; Sun, & Looi 2017). For instance, communication, interactive management activities, and co-work online interactions may be carried into a class anytime and anywhere (Zhang, 2019). The previous papers are characteristic of the personalisation.

The functionality of the mobile learning application needs to be useful and suitable adequate for using the application among participant to participant, the participant to device, synchronous or asynchronous to meet various learning and educational goals, tutors and learners' requirements and the situation (Sarrab, Al-Shihi, & Al-Manthari, 2015). Bower (2017) reported that new technology may be an accelerator for instructors to advance their educational thinking and approaches and the capability to facilitate more genuine learning, encourage multimedia creativity, provide to individual needs, arrange new sorts of learning, and possibly most of all increase the motivation and engagement of learners, offer instructors and institutions with attractive incentives for instructors. The previous articles characteristic was collaborative between the users and others.

### **4.3 Mobile Learning in Workplace**

The increasing tendency of mobile technology utilises for academic learning (Chen et al., 2015) is slowly determination its path into WPL as well. Trede et al. (2016) findings indicate to existing cultural obstacles and different degrees of uptake of mobile technology in workplaces; they state that there is a need to develop a higher awareness of the stress that pervades disciplines, workplaces and individuals around the utilise of personal mobile devices (PMDs). For instance, hospitals are a highly controlled workplace and offer a very various context for the utilise of PMDs than that of an advertising company.

In the study of Kuciapski (2017) discussed that the employees expected great independence from mobile technologies through knowledge transfer and at least the same abilities as a comparison with alternative solutions such as traditional training, printed materials, eLearning. Also, Kuciapski stated the level of supported offered for the employ of mobile technologies very strongly affect the effort, as perceived by employees, needed to utilise mobile technologies and software for the transfer of knowledge, further. He explained that mobile solutions need to be available for different platforms, allow them to personalise them accordingly to individual requirements, allow for high participant autonomy, usage of mobile applications in various environments, such as offline, also, need to be considered when selecting or designing solutions (Kuciapski, 2017). The study of Chee, Saudi and Lee (2018) confirmed that the relationship within mobile learning contextual elements, precisely, self-directed learning, training design, and job environment and efficient organisational learning, are indirect and mediated by training transfer. Further, the understanding of the ease of achievement of the mobile learning program is wholly reliant on how participants distinguished themselves as competent in utilising new technology and their intention to transfer what they have acquired in mobile learning (Nik et al., 2016; Imran et al., 2015).

Alawani and Singh (2017) paper discussed a model for the design of mobile content in the professional development of in-service instructors were enhanced by integrating appropriate informed practices appropriate to mobile technology such as micro-content and easily navigable interfaces inclusive positive support and personalisation. Also, Dar and Bhat (2016) study had an experiment on IT trainers employed was conducted on the mobile learning environments determined by using mobile learning technologies in organisational training processes, convincingly contribute to increased learning performances of employees. Their findings demonstrate the there is a significant level of development in employees who learn by via mobile technologies while continuing on work in their organisations.

Ng and Lam (2018) study indicated that the high cost being spent on the upgrading and maintenance of hardware and newer versions of the software of mobile technologies. Moreover, they state that the contents of learning resources need to be renewed to meet industry requirements. Also, they indicate that there is a deficiency of professionals for content development such as programmers, instructional designers and animators; further, they show that the acceptance, readiness and mindset change of instructors, workplace mentors and learners are hurdles to utilising mobile and flexible technologies for learning; finally. They discuss that instructors and workplace mentors can find the new technologies inapplicable because of its heavy focus on hands-on skills.

Pejoska-Laajola et al. (2017) research have examined mobile augmented communication for distant collaboration and considered how video calls augmented with Social Augmented Reality (SoAR) might

change collaboration and communication practices for informal learning in the physical work context. Also, they stated that users did not think they need to adapt SoAR to their functions; it may be inferred that the application is sufficiently generic to be utilised in other channels of physical work. They indicated SoAR and similar technologies could enable alternative training chance for distant users, such as machine operator learners and others, that improves the sharing of knowledge gained by individual workers and mitigate variances in employees' professional backgrounds.

Fahlman (2017) shows that mobile technologies become the standard and to be considered proper learning tools for work-based mobile learning (WBML) for Canadian registered nurses (RNs), leadership strategies are needed that promote an organisational culture that assists innovation and learning. He reported the factors that influence informal work-based learning by using mobile technologies as creating learning possibilities that activate learning; serving as developers (trainers and advisers). Offering explicit support for learning and production space for learning to unfold; encouraging risk and modelling behaviour; instilling the value of sharing knowledge and improving others and giving positive feedback and acknowledge including helping as role models.

Catenazzi et al. (2016) study discussed that C95-Challenge Erasmus project, mobile learning technologies are adopted and examined for bus and truck drivers training. They reported various kinds of training contents were developed and delivered mostly in the form of interactive slides and hyper-video. Further, they examined interactive quizzes were created, and various games and applications identified and considered to learn particular topics. They indicated the result after the testing, most of the learners declared to have developed their knowledge and to be interested in utilising this approach in the future.

The study of Gu (2016) pointed out that mobile web 2.0 technology has offered new opportunities for self-directed learning (SDL) in workplaces and can have changed participants' behaviours consequently. He conducted from the viewpoints of individual employees, with their learning requirements taken into consideration in developing an efficient mobile Web 2.0 learning environment. Also, he reported that the SDL in the context of mobile Web 2.0 had identified extraordinary personal attributes, which not only allow better learning experiences but may also motivate future designs of mobile learning.

Zhang et al. (2016) reported primary context-aware mobile learning system devoted to professionals' work-based learning (WoBaLearn). They stated that WoBaLearn might offer professionals with just-in-time learning helps tailored to their learning demands, personal characteristics, device capabilities and also specific circumstances. Further, in this article, they focused on the design and application of WoBaLearn system, including the online survey findings of work-based learning, the design of learning activities, the design of system construction, the system application and the system functionalities; WoBaLearn system may provide professionals with an acceptable learning experience and support their work activities.

Tawadrous, Antiado and Castillo (2016) indicate the utilise of the mobile platform as the communication average is already in the workplace through all age groups, years of job experiences and positions at all grades. They stated that as the changing type of the workplace, the highest management perceived the usage of text messaging (SMS) as the fastest path to relay messages or quickest knowledge sharing instrument to its entire employees. Moreover, the research study of Tawadrous, Antiado and Castillo create significant contributions in HR practices and ICT such as information, communications and technology areas as good cooperation through disciplines and empowers both short- and long-term development objectives of the company.

## **5.0 CONCLUSION**

There are many characteristics of mobile learning that need to be considered when designing good mobile learning in the workplace learning program. This study purpose to blending both issues workplace learning and mobile learning to development employees in Kuwait workplace. This study reviewed the literature of the key characteristic of mobile learning in the workplace. The characteristics were flexibility, timely, virtual and trans-time-space, popularisation and personalisation, Interactivity and universality, furthermore, the other characteristics ubiquitous, private, interactive, collaborative, blended, portable size of mobile tools and instant information. In this research, the researchers review the achievements of several studies on mobile learning characteristics and mobile learning in workplace learning. Systematise the research of mobile learning characteristics learning workplace learning in employee's development from the literature into a coherent taxonomy. However, more studies require to be conducted in Kuwait context

on mobile learning in workplace learning where limited prevalent studies and practices might influence the adopted of mobile learning in job training, because of rarely find of an expert in the field in Kuwait ministries.

## REFERENCES

- Alawani, A., & Singh, A. (2017). A Smart Mobile Learning Conceptual Framework for Professional Development of UAE In-Service Teachers. *International Journal Of Management And Applied Research*, 4(3), 146-165.
- Alajmi, M. M., & Al-Hadih, H. A. (2017). Effectiveness of Using the iPad in Learning to Acquire the Mental and Performance Skills in Teaching Social Studies Curriculum. *Journal of Curriculum and Teaching*, 6(1), 1-13.
- Alawani, A., & Singh, A. (2017). A Smart Mobile Learning Conceptual Framework for Professional Development of UAE In-Service Teachers. *International Journal Of Management And Applied Research*, 4(3), 146-165.
- Al Behairi, N. H. (2016). Mobile Learning: Taking Education to a New Level. *Sino-US English Teaching*, 13(7), 505-514.
- Al-Furaih, S. A., & Al-Awidi, H. M. (2018). Teachers' Change Readiness for the Adoption of Smartphone Technology: Personal Concerns and Technological Competency. *Technology, Knowledge and Learning*, 1-24.
- Al-Menayes, J. (2014). The relationship between mobile social media use and academic performance in university students. *New Media and Mass Communication*, 25, 23-29.
- Aldhafeeri, F. M., & Alajmi, M. R. (2016). Towards excelled mobile learning implementation in Kuwait university: Aspects and obstacles of use and non-use. *Proceedings BESSH*, 173(20), 5-19.
- Alhassan, R. (2016). Mobile Learning as a Method of Ubiquitous Learning: Students' Attitudes, Readiness, and Possible Barriers to Implementation in Higher Education. *Journal of Education and Learning*, 5(1), 176-189.
- Al-Hunaiyyan, A. & Al-Hajri, R. (2018). Usage and Perceptions of Mobile Devices and Applications among HE Instructors. *International Journal of Information and Education Technology*.
- Al-Hunaiyyan, A., Al-Sharhan, S., & Alhajri, R. (2017). A New Mobile Learning Model in the Context of Smart Classroom Environment: A Holistic Approach. *International Journal of Interactive Mobile Technologies*, 11(3).
- Al-Hunaiyyan, A., Alhajri, R., & Al-Sharhan, S. (2017). Instructors Age and Gender Differences in the Acceptance of Mobile Learning. *International Journal of Interactive Mobile Technologies*, 11(4).
- Alhajri, R., Al-Sharhan, S., & Al-Hunaiyyan, A. (2017). Students' perceptions of mobile learning: Case study of Kuwait. *World Academy of Science, Engineering and Technology, International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*, 11(2), 352-355.
- Al-Hunaiyyan, A., Alhajri, R., & Al-Sharhan, S. (2017). Prospects and challenges of mobile learning implementation: Kuwait HE case study. *International Arab Journal of e-Technology*, 4(3), 143-150.
- Al-Hunaiyyan, A., Alhajri, R. A., & Al-Sharhan, S. (2018). Perceptions and challenges of mobile learning in Kuwait. *Journal of King Saud University-Computer and Information Sciences*, 30(2), 279-289.
- Al-Hunaiyyan, A., Bimba, A. T., Idris, N., & Al-Sharhan, S. (2017). A Cognitive Knowledge-Based Framework for Social and Metacognitive Support in Mobile Learning. *Interdisciplinary Journal of Information, Knowledge & Management*, 12.
- Alkhezzi, F., & Al-Dousari, W. (2016). The Impact of Mobile Learning on ESP Learners' Performance. *Journal of Educators Online*, 13(2), 73-101.
- Alraqqas, B. M., & Al-Salamin, Z. H. (2016). The Impact of Using Mobile Applications on Students' Knowledge Retention in Higher Education Institutions. *مجلة كلية التجارة للبحوث العلمية*, 53(2).
- Attenborough, J. A., & Abbott, S. (2018). Leave them to their own devices: Healthcare students' experiences of using a range of mobile devices for learning. *International Journal for the Scholarship of Teaching & Learning*, 12(2), 1-9.
- Bar, F., Weber, M. S., & Pisani, F. (2016). Mobile technology appropriation in a distant mirror: Baroquization, creolization, and cannibalism. *New Media & Society*, 18(4), 617-636. <https://doi.org/10.1177/1461444816629474>.



- Bartholomew, S. R., Reeve, E., Veon, R., Goodridge, W., Lee, V., & Nadelson, L. (2017). Relationships between access to mobile devices, student self-directed learning, and achievement. *Journal of Technology Education*, 29(1), 2–24.
- Bano, M., Zowghi, D., Kearney, M., Schuck, S., & Aubusson, P. (2018). Mobile learning for science and mathematics school education: A systematic review of empirical evidence. *Computers & Education*, 121, 30–58.
- Biddix, J. P., Chung, C. J., & Park, H. W. (2016). Faculty use and perception of mobile Information and communication technology (m-ICT) for teaching practices. *Innovations in Education and Teaching International*, 53, 375–387.
- Catenazzi, N., Sommaruga, L., De Angelis, K., & Gabbianelli, G. (2016). The Adoption of Mobile Learning in a Traditional Training Environment: The C95-Challenge Project Experience. *International Association for Development of the Information Society*.
- Chee, S. W., Saudi, M. H. M., & Lee, C. A. (2018). The Effects of Mobile Learning Factors and Training Transfer on the Effective Organisational Learning in Malaysian Oil and Gas Industry. *Asian Journal of Innovation & Policy*, 7(2).
- Chen B, Seilhamer R, Bennet L, Bauer S (2015) Students' mobile learning practices in higher education: A multi-year study. *Educause Review*.
- Chen, C. M., Lee, H. M., & Chen, Y. H. (2005). Personalised eLearning system using item response theory. *Computers & Education*, 44, 237–255.
- Chen, B., & Denoyelles, A. (2013). Exploring students' mobile learning practices in higher education. *Educause Review*, 7.
- Cheng, Y. M. (2015). Towards an understanding of the factors affecting m-learning acceptance: Roles of technological characteristics and compatibility. *Asia Pacific Management Review*, 20(3), 109-119.
- Cochrane, T., Cook, S., Aiello, S., Christie, D., Sinfeld, D., Steagall, M., et al. (2017). A DBR framework for designing mobile virtual reality learning environments. *Australasian Journal of Educational Technology (AJET)*, 33(6), 54–68.
- Dar, M. A., & Bhat, S. A. (2016, September). Evaluation of mobile learning in workplace training. In *2016 International Conference on Advances in Computing, Communications and Informatics (ICACCI)* (pp. 1468-1473). IEEE.
- Dashti, F. A., & Aldashti, A. A. (2015). EFL College Students' Attitudes towards Mobile Learning. *International Education Studies*, 8(8), 13-20.
- Dashti, F., & Dashti, A. A. (2017). Morphological Adaptation of English Loanwords in Twitter: Educational Implications. *International Journal of Higher Education*, 6(3), 231-248.
- Dashti, F. A., & Yateem, A. K. (2018). Use of mobile devices: A case study with children from Kuwait and the United States. *International Journal of Early Childhood*, 50(1), 121-134.
- Dixon-Woods, M., Agarwal, S., Jones, D., Young, B., & Sutton, A. (2005). Synthesising qualitative and quantitative evidence: a review of possible methods. *Journal of health services research & policy*, 10(1), 45-53.
- Fahlman, D. W. (2017). Reflections on distributive leadership for work-based mobile learning of Canadian registered nurses. *International Journal of Mobile and Blended Learning (IJMBL)*, 9(3), 1-11.
- Grant, M. M. (2019). Difficulties in defining mobile learning: Analysis, design characteristics, and implications. *Educational Technology Research and Development*, 67(2), 361-388.
- Gu, J. (2016). Understanding self-directed learning in the context of mobile Web 2.0—case study with workplace learners. *Interactive Learning Environments*, 24(2), 306-316.
- Hsu, T. Y., Chiou, C. K., Tseng, J. C., & Hwang, G. J. (2015). Development and evaluation of an active learning support system for context-aware ubiquitous learning. *IEEE Transactions on Learning Technologies*, 9(1), 37-45.
- Imran, K., Sabiya, M. and Nazir, A.N. (2015) Transfer of training: a reorganized review on work environment and motivation to transfer. *International Journal of Management, Knowledge and Learning*. 4(2), 197-219.
- Jarvis, C., Tate, N., Dickie, J., & Brown, G. (2016). Mobile learning in a human geography field course. *Journal of Geography*, 115(2), 61–71.
- Jiugen, Y., & Ruonan, X. (2016). Mobile terminal based mobile learning system design. In *2016 11th International Conference on Computer Science & Education (ICCSE)* (pp. 699-703). IEEE.

- Kaliisa, R., Palmer, E., & Miller, J. (2019). Mobile learning in higher education: A comparative analysis of developed and developing country contexts. *British Journal of Educational Technology*, 50(2), 546-561.
- Khan, A. I., Al-Shihi, H., Al-Khanjari, Z. A., and Sarrab, M. (2015). Mobile learning (m-learning) adoption in the middle east: Lessons learned from the educationally advanced countries. *Telematics and Informatics*, 32(4):909{920.
- Khan, I., Mufti, S., & Nazir, N. A. (2015). Transfer of training: A reorganized review on work environment and motivation to transfer. *International Journal of Management, Knowledge and Learning*, 4(2), 197-219.
- Kuciapski, M. (2017). A model of mobile technologies acceptance for knowledge transfer by employees. *Journal of Knowledge Management*, 21(5), 1053-1076.
- Liaw, S. S. (2004). Considerations for developing constructivist web-based learning. *International Journal of Instructional Media*, 31, 309–321.
- Mostafa, M. M., Moghrabi, I. A., El-Galfy, A. M., & Benameur, K. B. (2018). Factors influencing the utilization of Mobile-based technologies: An empirical analysis in Kuwait. *Journal of Applied Business and Economics*, 20(5).
- Ng, R. Y. K., & Lam, R. Y. S. (2018). Using mobile and flexible technologies to enhance workplace learning in vocational education and training (VET). In *Innovations in open and flexible education* (pp. 85-95). Springer, Singapore.
- NikSarina, N.M.S., WanAbd, A.W.M.A. and Ibrahim, M. (2016) How do employee readiness, training design and work environment relate to transfer of training in public sector?, *Journal of Applied Environment and Biological Science*, 6(10S), 20- 27.
- Ozdamli, F., & Cavus, N. (2011). Basic elements and characteristics of mobile learning. *Procedia-Social and Behavioral Sciences*, 28, 937-942.
- Pejoska-Laajola, J., Reponen, S., Virnes, M., & Leinonen, T. (2017). Mobile augmented communication for remote collaboration in a physical work context. *Australasian Journal of Educational Technology*, 33(6).
- Pimmer, C. & Pachler, N. (2014). Mobile Learning in the Workplace: Unlocking the Value of Mobile Technology for Work-based Education. *Increasing access through mobile learning*.
- Reeves, T. C., & Reeves, P. M. (2015a). Educational technology research in a VUCA world. *Educational Technology*, 55(2), 26–30.
- Reeves, T. C., & Reeves, P. M. (2015b). Reorienting educational technology research from things to problems. *Learning: Research and Practice*, 1(1), 91–93.
- Safar, A. H. (2018). BYOD in Higher Education: A Case Study of Kuwait University. *Journal of Educators Online*, 15(2), n2.
- Salem, A. A. M. (2013). The impact of technology (BBM and WhatsApp applications) on English linguistics in Kuwait. *International Journal of Applied Linguistics and English Literature*, 2(4), 65-69.
- Salleh, N. S. N. M., Amin, W. A. A. W. M., Mamat, I., Jusoh, M. S., Kelantan, U. T. M., & Abidin, P. S. M. Z. (2016). How Do Employee Readiness, Training Design and Work Environment Relate to Transfer of Training in Public Sector? a Conceptual Framework. In *AND TOURISM RESEARCH CONFERENCE 20-22 APRIL 2016* (p. 108).
- Sarrab, M., Al-Shihi, H., & Al-Manthari, B. (2015). System Quality Characteristics for Selecting Mobile Learning Applications. *Turkish Online Journal of Distance Education*, 16(4), 18-27.
- Sulaiman, A., & Dashti, A. (2018). Students' satisfaction and factors in using Mobile learning among college students in Kuwait. *EURASIA Journal of Mathematics, Science and Technology Education*, 14(7), 3181-3189.
- Sun, D., and C.K. Looi. 2017. Focusing a mobile science learning process: Difference in activity participation. *Research and Practice in Technology Enhanced Learning* 12: 3.
- Swanson, K. (2008). Merrill Lynch: Bullish on Mobile Learning (case study). *Chief Learning Officer Magazine*.
- Tawadrous, M. I., Antiado, D. F., & Castillo, F. G. (2016). Mobile platform in the workplace: The next generation practice in human resource. *Procedia-Social and Behavioral Sciences*, 219, 152-158.
- Toh-Heng, H. L. (2016). Using Cloud Drive for Collaborative Learning in Adult Training. *Mobile Learning Futures–Sustaining Quality Research and Practice in Mobile Learning*, 233.

- Trede, F., Goodyear, P., Macfarlane, S., Markauskaite, L., McEwen, C., & Tayebjee, F. (2016). Enhancing workplace learning through mobile technology: Barriers and opportunities to the use of mobile devices on placement in the healthcare and education fields. *Mobile Learning Futures—Sustaining Quality Research and Practice in Mobile Learning*, 250.
- Zhang, B., Yin, C., David, B., Xiong, Z., & Niu, W. (2016). Facilitating professionals' work-based learning with context-aware mobile system. *Science of Computer Programming*, 129, 3-19.

## Evaluating Technology Attitude Scale for Pre-service Mathematics Teachers: Factor and Rasch Analysis

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### ABSTRACT

*The purposes of this study were to evaluate Technology Attitude Scale for pre-service mathematics teachers using Factor Analysis and Rasch measurement and to investigate the different results based on the analysis. This study applied a cross-sectional quantitative research design. Data were obtained from 106 pre-service mathematics teachers from public and private universities in Yogyakarta, Indonesia. The instrument used in this study was Technology Attitude Scale (TAS) contained 20 items with the four-point Likert scale. The data were analysed using SPSS25, AMOS Graphics, and Winsteps software to ascertain the validity and reliability of the instrument. Based on Principal Component Analysis (PCA), Technology Attitude Scale has four subscales. Confirmatory Factor Analysis (CFA) reveals that the alternative model which fits the data best is the 4-factors hierarchical model with acceptable goodness of fit index with the value of Chi-Square ( $\chi^2=1.637$ ), GFI, AGFI, TLI, and CFI (0.810,0.761,0.857,0.874) and RMSEA (0.078). Therefore, all of the items were kept for further analysis. The second validation uses Rasch measurement. Person fit analysis indicates 5 outliers, consequently, they should be eliminated. Thereafter item fit test is conducted and it shows that two items (item19 & item20) have the extreme value of difficulty index and it could not be retained. Differential Item Functioning (DIF) analysis shows that four items (item5, item6, item9, and item11) are classified to function differently for participants with diverse year level and type of university. In summary, factor analysis retains all of the items, whereas Rasch analysis suggests revising or removing six items (item5, item6, item9, item11, item19, item20). Item19 ( $\lambda = 0.884$ ) and item5 ( $\lambda = 0.727$ ) have very high factor loading, differently the other four items have the lower loadings ranging from 0.423 to 0.540. Revising or removing items is also needed due to the result of Rasch analysis which indicated that the instruments could not measure persons who have high ability. In future research, it is better to recollect pilot study data to ensure that the instrument revision is appropriate. It is also important to start thinking of another theoretical construct rather than only attitude towards technology because teachers have many aspects to deal with.*

**KEYWORDS:** factor analysis; pre-service mathematics teachers: rasch analysis; technology attitude scale; validation

### 1.0 INTRODUCTION

A theory proposed by Ajzen (1991) predicted planned behaviour and it was found to be well supported by empirical evidence based on the presence of certain factors. The theory explained that intention to perform behaviours can be predicted accurately by attitudes towards the behaviour, subjective norms, and perceived behavioural control. The intention jointly with perception of behavioural control provides a reason for variance in actual behaviour. Intention is considered as a motivational factor which affects a behaviour to indicate people's effort to perform the behaviour. The general rule is the stronger the intention, the more likely the person is to perform the behaviour.

Integrating ICT in teaching is considered as an outcome or expected behaviour with several theoretical frameworks which is necessary for technology integration in their teaching. The expected behaviour could possibly be influenced by attitudes and beliefs (Richardson, 1996). Therefore, pre-service mathematics teachers with a good attitude towards technology would likely integrate technology into their class instruction in the future. Analysing their attitude towards technology can give the consideration to teacher education institutions in designing their curriculum in developing pre-service teachers' technology readiness. This study used Technology Attitude Scale that was constructed by McFarlane, Hoffman, & Green (1997). The Technology Attitude Scale was created differently from the prior instruments since it assessed teachers' attitude towards various technology generally instead of only computers, film, and video. Besides, it included educational utility items which were essential to teachers' attitude. In the context of

Indonesian pre-service mathematics teachers, the TAS was adapted according to the conditions. To accurately measure the attitude towards technology, the instrument should be valid and reliable. The quality of the instrument can be proven by several types of evidence. In this study Confirmatory Factor Analysis (CFA) and Rasch Analysis were chosen to provide the evidence of construct validity.

Confirmatory Factor Analysis (CFA) refers to a type of structural equation modelling (SEM) which deals with measurement models, or the relationship between observed variables and the latent variables. Unlike exploratory factor analysis (EFA), CFA requires the researcher to pre-specify all aspects of the model. Therefore, the researcher must have a strong theoretical framework. CFA has greater emphasis on theory and hypothesis testing and also many other possibilities that are not available in EFA such as evaluation of method effects. Moreover, CFA should be conducted prior to the SEM because it can be used to investigate the psychometric evaluation of test instruments, construct validation, methods effects, and measurement invariance evaluation, therefore it can confirm the theory which has been used in this study (Brown, 2014).

Another type of validation for an instrument named Rasch Model is one-parameter Item Response Theory (IRT) model, which can overcome classical test theory (CTT) problem by producing items and person statistics independent (Fan, 1998). The analysis of Rasch is a psychometric technique that was established to improve the accuracy with which researchers create instruments, monitor instrument quality, and compute respondents' performances (Boone, 2016). Bond & Fox (12) stated that the Rasch model focuses on a person who has ability to encounter an item which has the level of difficulty and the likelihood of the person gets the items correct. Probability of success depends on the difference between the ability of the person and the difficulty of the item. Using Rasch model, several properties represent validity analysis such as unidimensionality, rating scale diagnostics, fit statistics, precision, and accuracy.

Based on the review above, it can be derived that validating Technology Attitude Scale for pre-service mathematics teachers is reasonably promising, particularly in the Indonesian context with no prior research regarding it, to be more specific in both CFA and Rasch analysis. Therefore, this study aimed to evaluate Technology Attitude Scale for pre-service mathematics teachers using Factor Analysis and Rasch measurement and to investigate the different results based on the analysis. The results of the study could be the considerations for the researcher to create new instrument's items or revise the existed instrument regarding the technological attitude of pre-service mathematics teachers. The study would also give empirical evidence to support the theoretical framework, which has been established in the previous study.

## **2.0 METHODOLOGY**

This study aimed to evaluate Technology Attitude Scale for pre-service mathematics teachers using Factor Analysis and Rasch measurement and to investigate the different results based on the analysis. This study applied a cross-sectional quantitative research design. Data were obtained from 106 pre-service mathematics teachers from public and private universities in Yogyakarta, Indonesia. The instrument used in this study was Technology Attitude Scale (TAS) developed by McFarlane (McFarlane et al., 1997) contained 20 items with the four-point Likert scale. When they were invited to participate in this research, they had to have completed at least one of the Information and Communication Technology-related course. Nine items were recoded due to the original coding and the direction of tendency, as shown in table 1. The data were analysed using SPSS25, AMOS Graphics, and Winsteps software to ascertain the validity and reliability of the instrument from the Confirmatory Factor Analysis and Rasch analysis.

In factor analysis, a number of criteria can be used to guide in the conclusion of the number of factors to keep such as Kaiser's Criterion (eigenvalue of 1.0), scree test (break in the plot), and parallel analysis, then interpret the factors using the rotation (Pallant, 2013). Meanwhile, Rasch measurement indicated misfitting person and item, and the data were cleaned from them. The person and item fit evaluation were based on three criteria; (1) Outfit mean square (MNSQ) value, (2) Outfit Z-standard (ZSTD) value, and (3) Point Measure Correlation value. The acceptable range of outfit MNSQ is  $0.5 < \text{MNSQ} < 1.5$ , that of outfit ZSTD is  $-2.0 < \text{ZSTD} < +2.0$ , and that of point measure correlation is  $0.4 < \text{Pt. Measure Correlation} < 0.85$  (Boone, Staver, & Yale, 2013; Sumintono & Widhiarso, 2014). Later, the clean responses were examined based on unidimensionality, rating scale diagnostics, fit statistics, precision, and accuracy. Unidimensionality was identified by raw variances explained which should be more than 40% and unexplained variance that did not exceed 15%. Rating scale must be in the range of 1.4 to 5.0 and the standard error of measurement was not more than 1.0.

Table 1. Recoded items of the research questionnaire

Latent Variable	Observed Variable	Item	Initial Coding	Final Coding
Technology	item4	Working with ICT makes me nervous	1 = Disagree a lot	1 = Agree a lot
Attitude	item7	ICT makes me feel stupid	2 = Disagree a little	2 = Agree a little
Scale	item9	I don't expect to use ICT much at work	3 = Agree a little	3 = Disagree a little
	item10	I am not the type to do well with ICT	4 = Agree a lot	4 = Disagree a lot
	item11	I feel uncomfortable using most ICT tools		
	item12	Working with ICT is boring		
	item17	I think using ICT will be difficult for me		
	item18	ICT makes me feel uneasy		
	item19	I get confused when using ICT		

### 3.0 RESULT AND DISCUSSION

#### 3.1. Confirmatory Factor Analysis (CFA)

Principle Component Analysis (PCA) and Confirmatory Factor Analysis (CFA) using IBM SPSS 24 and AMOS Graphic were conducted to analyse the 20 items of Technology Attitude Scale (n = 106). In this study, Technology Attitude Scale was also interpreted as Attitude towards ICT (AICT) construct. The investigation of correlation was used to inspect the relationship among the 20 items, ranging from -0.124 to 0.646. The value of Kaiser-Meyer-Olkin was 0.832, exceeding the recommended value of 0.6 (Pallant, 2013) and Bartlett's test of sphericity indicated the statistical significance, supporting the factorability of the correlation matrix. The scree plot showed a clear break after the fourth component, which demonstrated the presence of four components with eigenvalues exceeding 1, explaining 35.3%, 10.4%, 6.6%, and 6.3% of the variance respectively. The varimax orthogonal method was used to analyse with the assumption that no factors correlated since it was easier to interpret and the items correlation were low. Hence, using Cattell (1966) scree test, it was decided to retain four factors for further investigation.

Table 2. Questionnaire Items of Attitudes toward ICT construct

Factor	Common Theme	Item
F1	Negative feelings and attitudes of using ICT	item19 I get confused when using ICT
		item 10 I am not the type to do well with ICT
		item 4 Working with ICT makes me nervous
		item 17 I think using ICT will be difficult for me
		item 18 ICT makes me feel uneasy
		item 9 I don't expect to use ICT much at work
		item 12 Working with ICT is boring
		item 7 ICT makes me feel stupid
F2	Confidence in using ICT	item 11 I feel uncomfortable using most ICT tools
		item 2 I like using ICT tools in my teaching
		item 3 I feel confident in my ability to learn about ICT
		item 5 I now use my knowledge of ICT in many ways as a teacher
F3	Awareness of the ICT's importance	item 16 I am able to do as well working with ICT as my fellow teachers
		item 14 It is important to know how to use ICT in order to get a teaching position
		item 15 I know that if I work hard to learn about ICT, I will do well
F4	Positive expectation of using ICT	item 13 Learning about ICT is a worthwhile and necessary subject for all prospective teachers
		item 1 Knowing how to use various ICT tools is a necessary skill for me
		item 20 Once I start using ICT, I will find it hard to stop
		item 6 I wish I could use ICT tools more frequently
		item 8 A job using ICT would be very interesting

Four factors within Technology Attitude Scale (TAS) were found after conducting PCA. The 20 items of TAS were grouped with the common theme among them which represented their relationships,

that is, negative feelings and attitudes of using ICT (F1), confidence in using ICT (F2), awareness of the ICT's importance (F3), and positive expectation of using ICT (F4).

Table 3. Goodness-of-Fit Indicators for Technology Attitude Scale (TAS) (n = 106)

Model	CMIN	df	CMIN/df	GFI	AGFI	TLI	CFI	RMSEA
1-Factor Model	403.802	170	2.375	0.7	0.629	0.691	0.724	0.114
4-Orthogonal Factors Model	385.008	171	2.252	0.735	0.675	0.719	0.747	0.109
4-Correlated Factors Model	267.619	165	1.622	0.815	0.764	0.860	0.879	0.077
4-Factors Hierarchical Model	273.457	167	1.637	0.810	0.761	0.857	0.874	0.078

To obtain the best model for Technology Attitude Scale (TAS), four alternative models were proposed such as the one-factor model, the 4-orthogonal factors model, the 4-correlated factors model, and the 4-factors hierarchical model. The alternative models were sought since the half of standard errors of regression were between 0.20 to 0.40. The model fit indices for the alternative models were compared in table 3. The expected values for the good fit model are greater than 0.95 (Schreiber, Nora, Stage, Barlow, & King, 2006) or at least 0.90 (Hooper, Coughlan, & Mullen, 2008) for GFI, AGFI, TLI, and CFI and less than or between 0.06 until 0.08 for RMSEA (Schreiber et al., 2006). It can be seen that the 4-factors hierarchical model has a low value of Chi-Square ( $\chi^2=1.637$ ), high values of GFI, AGFI, TLI, and CFI (0.810, 0.761, 0.857, 0.874) and a low value of RMSEA (0.078), which means that the values are very close to the model-fit indices of the 4-correlated factors model. Although the expected values are not satisfied by the model fit indexes of Technology Attitude Scale (TAS), it is still acceptable, since the indexes are very close to the expected values (Hooper et al., 2008). Nevertheless, the alternative model which fits the data best is the 4-factors hierarchical model which is modelled in figure 1.

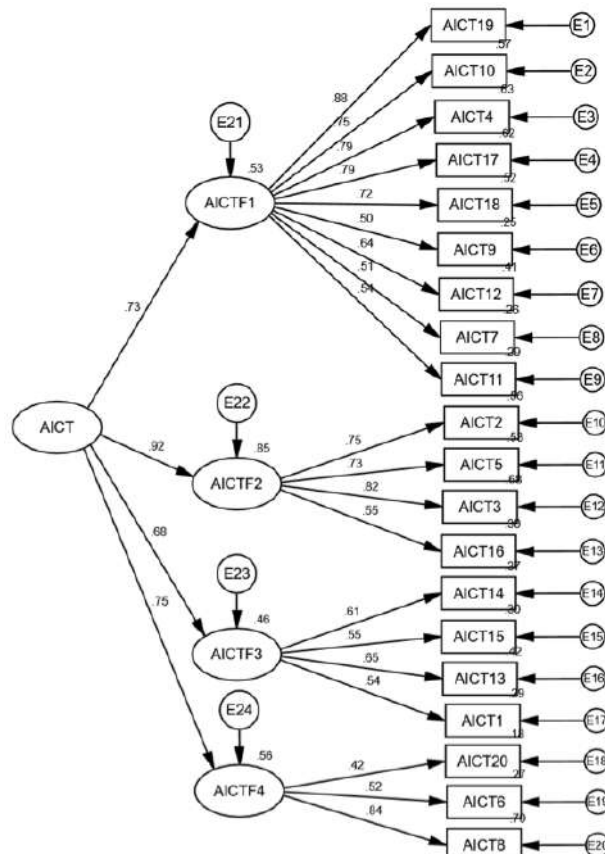


Figure 1. CFA model for Technology Attitude Scale (TAS) or attitudes towards ICT

Table 4. Standardised CFA Factor Loadings and Average Variance Extracted for Technology Attitude Scale (TAS) (n = 106) (4-Factors Hierarchical Model)

Scale (TAS) (n = 188) (4-Factors Hierarchical Model)						
Observed Variable			Latent Variable			
Item	Factor Loading	Squared Multiple Correlation	Factor	Std. Structure Coefficient	Squared Multiple Correlation	Average Variance Extracted
item9	0.504	0.254	F1	0.729	0.531	48.1%
item 12	0.638	0.407				
item 7	0.514	0.264				
item 11	0.540	0.292				
item 18	0.720	0.518				
item 17	0.786	0.618				
item 4	0.791	0.626				
item 10	0.754	0.569				
item 19	0.884	0.781				
item 16	0.547	0.299	F2	0.921	0.848	51.6%
item 3	0.823	0.677				
item 5	0.727	0.529				
item 2	0.748	0.560	F3	0.675	0.456	34.8%
item 1	0.543	0.295				
item 13	0.649	0.421				
item 15	0.552	0.305				
item 14	0.609	0.371	F4	0.745	0.555	38.4%
item 8	0.835	0.697				
item 6	0.524	0.275				
item 20	0.423	0.179				
TAS						59.8%

Table 4 shows the factor loadings, Squared Multiple Correlations (SMC), and Average Variance Extracted (AVE) for Technology Attitude Scale (TAS). As seen from the table, the factor loadings are moderate and high, ranging from 0.423 to 0.884, which means that the evidence of the observed variables represent the underlying construct or latent variables (Doll, Xia, & Torkzadeh, 1994). The Squared Multiple Correlations (SMC) indicate that the lower bound reliability of the measure is also moderate and high; item19 (0.781) and item20 (0.179) as the highest and the lowest, respectively. Therefore, all of the items were kept because they satisfied the expected values (Hair et al., 2014).

Technology Attitude Scale (TAS) also has high standardised structure coefficients. Awareness of the ICT's importance (F3) has the lowest standardised structure coefficients (0.675) with lower bound reliability 0.456. Whereas confidence in using ICT (F2) has the highest coefficients (0.921) and the highest lower bound reliability (0.848). The variance explained by the TAS factors and TAS; F1 (48.1%), F2 (48.6%), F3 (34.8%), F4 (38.4%), TAS (59.8%), was moderate and adequate which means that on the average, variance was sufficiently explained by the latent construct structure imposed on the factors. Hence, four factors reflecting Technology Attitude Scale (TAS) were kept for further analysis.

### 3.2. Rasch Analysis

In this study, Rasch Analysis was conducted by running WINSTEP software and interpreting the output. The outliers from person and item were removed from the data then the clean responses were examined based on unidimensionality, rating scale diagnostics, fit statistics, precision, and accuracy.

#### 3.2.1. Eliminating Misfitting Person and Item

The analysis was begun by examining the unexpected responses by the misfitting person and item then evaluating the person and item fit. Unexpected responses were identified by having z-residual of 2 or higher and more negative than -2, resulting the deletion of 38 responses. The person and item fit evaluation were based on three criteria; (1) Outfit mean square (MNSQ) value, (2) Outfit Z-standard (ZSTD) value, and (3) Point Measure Correlation value. The acceptable range of outfit MNSQ is  $0.5 < \text{MNSQ} < 1.5$ , that of outfit ZSTD is  $-2.0 < \text{ZSTD} < +2.0$ , and that of point measure correlation is  $0.4 < \text{Pt. Measure Correlation}$



< 0.85 (Boone et al., 2013; Sumintono & Widhiarso, 2014). The finding identifies five persons who do not meet the criteria and categorised as underfitting, then they should be eliminated from the data. Underfit persons tend to mislead the measurement (Boone et al., 2013), therefore, in order to obtain suitable data to the Rasch model, those should be removed. Although overfit persons could cause redundancy, they could be retained because the more strict rule should only be applied to the item (Boone et al., 2013).

The item fit analysis focuses on how well the items work. It has infit MNSQ mean of 0.99 and a standard deviation of 0.21. The finding is shown in Table 5, which indicates that item 20 and item 19 do not fall within the acceptable range. The outfit MNSQ and ZSTD of item20 is categorised as underfitting that means it does not appropriately reflect the construct. Item 19 has a deficient level of outfit MNSQ and ZSTD, and it could not satisfy the requirement of objective measurement. Therefore, item 19 is identified as a redundant item. Linacre and Boone (Boone et al., 2013; Linacre, 1994) stated that items should be behaving better than the person. In accordance with that, both the underfit and overfit item should be eliminated.

Table 5. Item Fit Analysis

INPUT: 101 Person 20 Item REPORTED: 101 Person 20 Item 4 CATS WINSTEPS 3.73

Person: REAL SEP.: 3.10 REL.: .91 ... Item: REAL SEP.: 6.62 REL.: .98

Item STATISTICS: MISFIT ORDER

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFI MNSQ	ZSTD	OUTFI MNSQ	ZSTD	PT-MEASU CORR.	EXP.	EXACT OBS%	MATCH EXP%	Item
20	204	94	4.36	.20	1.57	3.4	1.58	3.4	A .34	.67	60.2	65.9	Item20
14	339	100	-.48	.21	1.25	1.7	1.35	1.6	B .49	.60	63.6	71.0	Item14
9	317	99	.28	.21	1.14	1.0	1.27	1.5	C .59	.66	69.4	70.1	Item9
6	331	99	-.33	.21	1.24	1.6	1.19	1.0	D .54	.64	65.3	71.0	Item6
16	305	100	.91	.20	1.10	.7	1.08	.6	E .59	.67	67.7	68.2	Item16
10	287	98	1.35	.20	1.09	.7	1.08	.6	F .71	.68	64.9	66.5	Item10
3	302	101	1.15	.20	1.08	.6	1.04	.3	G .72	.67	65.0	67.5	Item3
7	363	98	-2.20	.25	1.07	.5	.83	-.3	H .54	.54	76.3	77.8	Item7
12	356	101	-1.19	.22	1.01	.1	.86	-.4	I .63	.60	74.0	72.3	Item12
4	317	100	.38	.20	1.01	.1	.99	.0	J .72	.66	73.0	69.4	Item4
11	318	98	.08	.21	.99	.0	.92	-.4	j .69	.65	70.1	70.5	Item11
5	293	101	1.49	.20	.92	-.5	.93	-.4	i .68	.68	69.0	66.6	Item5
1	362	99	-1.83	.24	.93	-.5	.82	-.4	h .53	.52	73.5	75.2	Item1
17	325	100	.09	.21	.89	-.8	.89	-.6	g .71	.65	73.7	70.4	Item17
15	354	97	-1.82	.24	.82	-1.3	.88	-.2	f .53	.51	81.3	74.7	Item15
2	313	100	.61	.20	.84	-1.1	.81	-1.2	e .67	.66	73.7	69.4	Item2
13	365	99	-1.99	.25	.81	-1.3	.68	-.8	d .58	.51	83.7	76.5	Item13
8	348	101	-.81	.22	.76	-1.8	.76	-1.1	c .64	.62	81.0	71.3	Item8
18	344	101	-.62	.21	.71	-2.2	.63	-1.9	b .74	.63	80.0	71.2	Item18
19	316	101	.58	.20	.62	-3.0	.59	-2.9	a .80	.67	79.0	69.3	Item19
MEAN	323.0	99.4	.00	.21	.99	-.1	.96	-.1			72.2	70.7	
S.D.	35.8	1.7	1.49	.02	.21	1.5	.24	1.3			6.5	3.2	

### 3.2.2. Differential Item Functioning Analysis

Differential Item Functioning (DIF) analysis was also performed to investigate bias in participants' response based on their different background. The biased items were indicated by the probability less than 0.05 (Boone et al., 2013). In term of gender, there was no bias item which means that the items could be understood appropriately by each group of pre-service teachers. In terms of year level, one item (item9) was classified to have significant differences in accordance with the pre-service mathematics teachers' year level group. In terms of university, three items (item5, item6, item11) were functioning differently between public and private university. The finding yields the consideration of revising or deleting those items due to their bias.

### 3.2.3. Final Parameter Estimation using Rasch Analysis

The final parameter estimation was conducted with 101 persons and 14 items that were good and indicated the sufficient fit to Rasch model for practical measurement purposes. The findings indicated that pre-service mathematics teachers had a positive attitude towards technology as the mean score of +3.24 logit (SD = 2.07) was higher than zero digit. Reliability of the instruments was identified by the value of reliability which should be more than 0.67 and separation index that could not be less than 3 (Boone et al., 2013). Table 7 shows that the reliability of person, item, and Alpha Cronbach were utterly high. However,

the person separation did not reach 3-point which means the instrument was not sufficiently representative for assessing various level of ability.

Table 6. Differential Item Functioning

Background	Person Classes		Probability > 0.05	Item
	Number	Type		
Gender	2	Male	-	-
		Female		
Year Level	4	Year 1	0.0060	Item9
		Year 2		
		Year 3		
		Year 4		
University	2	Public	0.0237	Item5
		Private	0.0278	Item6
			0.0481	Item11

Table 7. Measure and Reliability

	Logit Mean (SD)	Separation	Reliability	Alpha Cronbach
Person	3.34 (2.07)	2.44	0.86	0.93
Item	0.00 (1.27)	5.37	0.97	

Table 8. Construct Validity Criteria Analysed by Rasch Model

Criteria	Evidence	
Unidimensionality	Raw Variances Explained	52.1%
	Unexplained Variance	7.7%
Rating Scale Diagnostics	Andrich Threshold	None
		-3.04
		-0.56
		3.59
Fit Statistics	Item Difficulty/ Item logit Value	-1.86 to 1.92
Precision	Standard Error of Measurement	0.20 to 0.26
Accuracy	Outfit MNSQ	0.73 to 1.57
	Outfit ZSTD	-1.6 to 2.8

Construct validity of the instruments was proven by providing several arguments based on the criteria given by Rasch analysis such as unidimensionality, rating scale diagnostics, fit statistics, precision, and accuracy according to the acceptable values (Bond & Fox, 2015; Boone et al., 2013; Sumintono & Widhiarso, 2014). Raw variance explained by the instruments was 52.1% and the unexplained variance was 7.7% demonstrated that the instruments measured one variable comprehensively. Rating scale diagnostics showed that the participants had a sufficient understanding in differentiating four-point Likert scale. The precision represented by standard error of measurement which was quite low, indicated the instrument had the adequate item discrimination. The instrument's accuracy showed acceptable range of value. Besides, some other properties of the Rasch model should be used as consideration in developing the instruments. Wright Maps is a graph representing the relationship between the measures of persons and items (Boone et al., 2013). The Wright maps of this study is presented in figure 2. Many participants readily agree almost all of the items indicated by the higher level of mean than the items. There is also a little gap between several items. The analysis also suggests some changes in the consecutive form of instruments. Item 1 and item 15 appear to measure identical part of the attribute, and therefore, from measurement view, are redundant. There will be only little measurement loss when those individual items are deleted.

INPUT: 101 Person 14 Item REPORTED: 101 Person 14 Item 4 CATS WINSTEPS 3.73



Figure 2. Wright maps of Technology Attitude Scale (TAS) or attitudes towards ICT

### 3.3. Comparing Final Items based on Confirmatory Factor Analysis and Rasch Analysis

This study satisfied the minimum sample size for applying Confirmatory Factor Analysis and Rasch model. Based on Principal Component Analysis (PCA), Technology Attitude Scale has four subscales such as (1) negative feelings and attitude towards ICT, (2) confidence using ICT, (3) awareness of the ICT's importance, (4) positive expectation using ICT. Confirmatory Factor Analysis (CFA) reveals that the alternative model which fits the data best is the 4-factors hierarchical model with acceptable goodness of fit index. All of the items were kept because they satisfied the expected values of factor loadings, Squared Multiple Correlations (SMC), and Average Variance Extracted (AVE) which means that the evidence of the observed variables represent the underlying construct variables and the average variance is sufficiently explained by the latent construct structure imposed on the factors.

The second validation uses Rasch measurement. The first analysis yields removing 38-unexpected responses. Person fit analysis indicates 5 outliers, consequently, they should be eliminated. Thereafter item fit test is conducted and it shows that two items (item19 & item20) did not satisfy the acceptable values and it could not be retained. Differential Item Functioning (DIF) analysis shows that four items (item5, item6, item9, and item11) are classified to function differently for participants with diverse year level and type of university. The raw variance explained by measures indicates adequate evidence of unidimensionality, and unexplained variances are very low.

In summary, factor analysis retains all of the items, whereas Rasch analysis suggests revising or removing six items (item5, item6, item9, item11, item19, item20). Item19 ( $\lambda = 0.884$ ) and item5 ( $\lambda = 0.727$ ) have very high factor loading, differently the other four items have the lower loadings ranging from 0.423 to 0.540. Revising or removing items is also needed due to the result of Rasch analysis which

indicated that the instruments could not measure persons who have high ability. This case is probably related to the term in the instrument which is quite old (with the word “technology”) whereas the teaching learning technology tools has been evolved rapidly.

#### 4.0 CONCLUSION

Based on Principal Component Analysis (PCA), Technology Attitude Scale has four subscales. All of the items were kept because they satisfied the expected values of factor loadings, Squared Multiple Correlations (SMC), and Average Variance Extracted (AVE) which means that the evidence of the observed variables represent the underlying construct variables and the average variance is sufficiently explained by the latent construct structure imposed on the factors.

Rasch analysis indicates 5 outliers in term of person. Item fit test was conducted and it shows that two items (item19 & item20) have the extreme value of difficulty index and it could not be retained. Differential Item Functioning (DIF) analysis shows that four items (item5, item6, item9, and item11) are classified to function differently for participants with diverse year level and type of university. Revising or removing items is needed due to the result of Rasch analysis which indicated that the instruments could not measure persons who have high ability. In future research, it is better to recollect pilot study data to ensure that the instrument revision is appropriate. It is also important to start thinking of another theoretical construct rather than only attitude towards technology because teachers have many aspects to deal with.

#### REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Bond, T., & Fox, C. M. (2015). *Applying the Rasch Model: Fundamental Measurement in the Human Sciences, Third Edition*. Routledge.
- Boone, W. J. (2016). Rasch Analysis for Instrument Development: Why, When, and How? *CBE Life Sciences Education*, 15(4). <https://doi.org/10.1187/cbe.16-04-0148>
- Boone, W. J., Staver, J. R., & Yale, M. S. (2013). *Rasch Analysis in the Human Sciences*. Retrieved from <https://link.springer.com/book/10.1007%2F978-94-007-6857-4>
- Brown, T. A. (2014). *Confirmatory Factor Analysis for Applied Research, Second Edition*. Guilford Publications.
- Cattell, R. B. (1966). The Scree Test For The Number Of Factors. *Multivariate Behavioral Research*, 1(2), 245–276. [https://doi.org/10.1207/s15327906mbr0102\\_10](https://doi.org/10.1207/s15327906mbr0102_10)
- Doll, W. J., Xia, W., & Torkzadeh, G. (1994). A Confirmatory Factor Analysis of the End-User Computing Satisfaction Instrument. *MIS Quarterly*, 18(4), 453–461.
- Fan, X. (1998). Item Response Theory and Classical Test Theory: An Empirical Comparison of their Item/Person Statistics. *Educational and Psychological Measurement*, 58(3), 357–381. <https://doi.org/10.1177/0013164498058003001>
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., Tatham, R. L., & others. (2014). *Multivariate data analysis* (Vol. 5). Retrieved from <https://pdfs.semanticscholar.org/6885/bb9a29e8a5804a71bf5b6e813f2f966269bc.pdf>
- Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit. *Articles*, 2.
- Linacre, J. M. (1994). Sample size and item calibration stability. *Rasch Measurement Transactions*, 7(4), 328.
- McFarlane, T. A., Hoffman, E. R., & Green, K. E. (1997). *Teachers' Attitudes toward Technology: Psychometric Evaluation of the Technology Attitude Survey*. Retrieved from <https://eric.ed.gov/?id=ED411279>
- Pallant, J. (2013). *SPSS SURVIVAL MANUAL: A step by step guide to data analysis using SPSS* (5th ed.). Sydney: Allen & Unwin.
- Richardson, V. (1996). The role of attitudes and beliefs in learning to teach. *Handbook of Research on Teacher Education*, 2, 102–119.

- Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting Structural Equation Modeling and Confirmatory Factor Analysis Results: A Review. *The Journal of Educational Research*, 99(6), 323–338. <https://doi.org/10.3200/JOER.99.6.323-338>
- Sumintono, B., & Widhiarso, W. (2014). *Aplikasi model Rasch untuk penelitian ilmu-ilmu sosial (edisi revisi)*. Cimahi, Indonesia: Trim Komunikata Publishing House.

## The Rise of Artificial Intelligence in Banking Sector

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### ABSTRACT

*Technological development is ruling the world and artificial intelligence is one of the fastest evolving technologies across the globe. Industries are adopting artificial intelligence for various applications and banking sector is one among them. Artificial intelligence is the future of banking as it brings the power of complex data analytics to combat fraudulent transactions and improve compliance. AI will not replace the humans but it will help to enhance their work by making them more efficient and would help people to solve calculations in much quick and easy form that would be difficult to perform manually. Artificial Intelligence also helps the banking sector to alleviate risk and increases the revenue by improving the customer satisfaction. Now days, it is crucial for all the banks to adopt artificial intelligence into their strategy as there is high competition and innovation accelerates in the banking sector as well. Therefore, in this paper researcher has analyzed the application of artificial intelligence in the banking sector, how Artificial Intelligence is improving business results, implementation of AI in the banking sector and the impact of AI on Indian Banks. The methodology of this paper involves usage of primary and secondary data. An interview of 50 bank experts has been conducted by the researcher to know the impact of AI in Indian Banks. The present study is descriptive in nature and considered the first of its kind conducted on artificial intelligence with special reference to banking sector focusing Indian banks and foreign banks.*

**Keywords:** Technology, Artificial Intelligence, Banking sector

### 1.0 INTRODUCTION

In today's era, world is in process of transformation in terms of technology. IT development has driven various sectors towards technological change. With this a need of artificial intelligence is seen in different sectors. To start with, let us understand the concept of artificial intelligence. (Latimore, 2018) "the ability to copy from something that is natural, in terms of acquiring and applying knowledge and skills. Now this ability of copying is done by a machine or a computer. So, when a machine mimics a human mind by thinking for itself, it is known as Artificial Intelligence". Now days, the banking sector is also chasing artificial intelligence as this would help the sector to have competitive advantage. The adoption of AI in Indian banking sector is gradual when compared with the other sectors because the reason could be the banking sector requires human involvement. A constant need of AI is seen as it helps banking sector to retain their customers, digital documentation and enabling virtual assistance to offer real time solutions. Moreover, banks are adopting AI based anti-money laundering, anti-fraud and credit-underwriting in their operations. As said by **Latimore (2018)** "Banking artificial intelligence is technology that makes inferences and decisions that used to require direct human involvement." An online survey was conducted on 112 respondents on artificial intelligence and **National Business Research Institute** during the period of April-May 2016 analyzed that 32 percent respondents confirmed using AI technologies, whereas 12 percent groups were not using AI as they felt that this technology is too new and not sure about the security of it. The report also highlighted that the adoption of cognitive system in the industry would generate revenues approximately \$47 billion in 2020 with banking named on top. **Maskey (2018)** founder of Fusemachines wrote a post on how artificial intelligence is helping financial institutions, published on the website of **Forbes**. The article mentioned that artificial intelligence is helping financial institutions to grow and it has been estimated that AI would save banking industry more than \$1 trillion by 2030. The article also

highlighted that banking industry has started using artificial intelligence for various traditional banking problems. For example, bank of America has already developed a chatbot, Erica, an AI developed tool that provides financial guidance for the banks clients through voice and text messages. This service is accessible 24/7 for the customers and it can also perform day-to-day transactions.

## 2.0 LITERATURE REVIEW

Banks are considered as the life blood of an economy as it handles cash, credit and financial transactions. 'It is mind boggling to know that the entire banking system is so well connected that each and every transaction can be tracked and any exchange of information can be done from any part of the world just by connecting to these networks. This smooth operation of the banking world that is done through computers and networks is possible only because banks use Artificial intelligence'. Moreover, there is also a rapid growth of e-commerce in the country and due to this there is a constant increase in the use of credit cards for online purchasing. But on the other hand it is also causing credit card fraud activities. **Raj & Portia (2011)** analyzed that artificial intelligence is one of the various techniques to be used for detecting credit card fraud explosions. Along with detecting credit card fraud explosions, artificial intelligence is also been used to operate effectively. To cut down the operating expenses and to improve the efficiency, banking sector is adopting updated technologies like AI, cloud and block-chain. Moreover, digitalization is also rapidly growing and influencing banks to adopt new technologies for better customer service. Even technological changes are been adopted by the banks to control cybercrimes **Jewandah (2018)**. AI is also helping banking industry by detecting fraud, assess individual creditworthiness and offer personalized services. But one of the biggest challenges in front of banks is cyber security threats and vulnerabilities **Vijai (2019)**. As there are many challenges while adopting AI, approximately only 10 percent of organizations are using AI to compete in the market **Frankel (2018)**. Despite of increasing adoption of AI in banking sector the technology is still at the stage of infancy. This is because there are few threats in front of banking sector like infrastructure, increased technical complexity, attrition of manpower and similar. Regardless of the threats, innovative techniques like chatbots and artificial intelligence have been adopted by banking industry for improving customer satisfaction **Vedapradha and Hariharan (2018)**. AI is also been used in the banking sector in other forms like application of AI in auditing impacts in internal control effectiveness as well as it is cost effective **Omoteso K. (2012)**. Moreover, AI technique along with operational research was also used to evaluate the performance of banks **Fethi, M.D. & Pasiouras F. (2010)**.

From the above literature it has been observed that as artificial intelligence is at its early stage, banking sector is taking initiative to implement the innovative technology. Few studies have examined about the benefits, challenges and threats of AI in banking industry, the use of artificial intelligence in fraud detecting activities and evaluating performance of banks as well. The literature studied by the researcher also found that there are very few studies which have been conducted on artificial intelligence with reference to banking industry. Majority of the studies and reports has been conducted and published internationally and very few studies have been conducted in Indian context. Therefore, the current study has focused on the application of artificial intelligence in banking sector and how AI can improve the business results of banking sector. The study also focused on the implementation of AI and the impact of AI in the banking industry.

## 4.0 OBJECTIVES OF THE STUDY

1. To study the application of artificial intelligence in the banking sector.
2. To understand how AI improves the business results of banking industry.
3. To study the implementation of AI in the banking sector.
4. To analyze the impact of AI on Indian Banks.

## 5.0 METHODOLOGY

The topic for the research study is *the rise of artificial intelligence in banking sector* and the nature of study is theoretical and descriptive. The sources of data collection are both primary and secondary based. Primary data has been collected by conducting an interview. Open ended questions were asked by 50 banking experts to analyze the impact of artificial intelligence on the Indian banking sector. The other form of source for data collection has been secondary based. The data and the information have been extracted from authenticated websites, books, journals, articles, business magazine and brochure. Through the secondary data, researcher has analyzed the different applications of artificial intelligence in the banking sector and how AI is helping banks to improve their results.

In this study, researcher has analyzed various aspects of AI and hence, the period of study is of 10 years i.e. from 2010-2019. The scope of study is to analyze the different applications of AI in banks and in what ways AI could help Indian banks to improve their performance.

## 6.0 FINDINGS

### 6.1 Application of AI in the Banking Sector

- **Data Analytics**

Now a days, data analytics are been used to predict the future outcomes and trends. Data analytics is of great assistance to the banks, as, pattern of customer behavior can be observed by quick processing of data and banks can predict the future outcomes. Hence, banks can contact the customer at the right time with the right product. For example, when the customer did last visited the bank, when the customer performed its transactions and what websites a customer is surfing. All this information collectively could help banks in creating unique relationship with the customer. Therefore, with the data analytics the future trend can be observed and it would help banks to up-sell and cross-sell successfully.

- **Chatbots**

As said by **Dan Latimore** “A chatbot is a technology service powered by algorithms that interacts with a customer in a natural (human-like) manner, either by voice or text”. In other words it’s a system that replicates human chats without any human interventions. For example, if a customer is texting, the chatbot would identify the context and emotions of the customer and would reply with the most appropriate answer. This indicates that technology is analyzing the behavior and habits of the user. Therefore, chatbot helps in understanding the customer and responding in a correct manner. Few banks have already implemented this technology as it help banks to save time, cost and in improving efficiency. This results in customer relationship management. Chatbot used in Bank of America is named as “Erica” announced by president of retail banking **Thong Nguyen**. Erica uses AI to make suggestions over mobile phones for their customers. (Article published by **CNBC, October 2016**)

- **Robotic Process Automation (RPA)**

“Robotic Process Automation uses a number of techniques to mimic routine human activities automatically, repeatedly, faster, and more accurately” quoted by **Dan Latimore**. RPA is being accepted in banking industry and it is growing at a high pace. According to **RPA trends and forecast reports 2017** published by Forrester Research, U.S. it has been projected that by 2021 RPA industry would be of \$2.9 billion from \$250 million in 2016. This indicates that there is an emerging trend of RPA.

Know a day’s RPA is acting as a tool for the banking industry. Due to high competition in the industry, every bank needs to maintain their position by maximizing their efficiency along with minimum costs. On the other hand maintaining the security level is also a challenge with the banks. Hence, for all the questions the only answer is RPA. Few examples of the banks those who have implemented RPA are: ICICI bank was the first bank in India to implement RPA on a large scale. In the year 2016 bank deployed 200 software robotics programs which have increased to 750 software robots handling 20 lakhs transactions daily (Published on official website of **ICICI Bank on 8 September 2016**). Another example is of Yes Bank who has also adopted RPA for corporate to bring ease in the businesses of export and imports. They have launched robotics based ‘Digital Export and Import’ payments solution (Published on official website



of **Yes Bank on 15 March 2018**). Similarly other banks are in the pipeline to implement RPA like Axis Bank and Deutsche Banks. Therefore, with the implementation of RPA one could save labor costs and gain operational efficiency.

## 6.2 How AI improves the business results

Artificial Intelligence is of the great importance to banking sector. AI helps banks to work in an efficient and effective manner. By adopting new technology in analytics, bots, RPA and report generation, banks can reduce their cost and can allay risk and moreover can increase their revenue generation. By implementing artificial intelligence various benefits can be enjoyed by banking sector like it helps in increasing the revenue, helps in mitigating risk, brings customer satisfaction and many more. Few of the points are explained below:

- **Reduce Cost**

Artificial Intelligence is helping the banking industry in reducing the cost. As AI is helping customers in performing their own activities, speed-up response time, handling the data with accuracy, keep humans apprised of latest changes and many more. All such activities help the banks to reduce cost.

- **Mitigate Risk**

Risk is fatal if not given proper attention. With digitalization there is an increasing percentage of cybercrimes which is a huge risk for both the company and the customers. After the PNB (Punjab National Bank) scam was exposed, banking sector faced huge risk and shook. Therefore, in such cases AI can play an important role. AI can monitor such threats and can help banks to install fraud detection systems. Moreover, AI can also be used to maintain cyber security, safeguarding personal data and detecting insider trading that could lead to market violence. Many banks are using AI to protect themselves and their customers from such kind of risks. For example: Citibank has invested \$11 million in an anti-money laundering structure (**Annual Report 2018 of Citibank**), an article written by **Alyssa Schroer** in BuiltIn 2019 it was highlighted that Bank of America is using KENSHO software to predict the future data and similarly many more banks are exposed to AI.

- **Increase Revenue**

With the implementation of Artificial Intelligence, banking sector can earn more revenue. Revenues can be increased by employee's effectiveness. With the use of AI in banks, employees can work generate results faster and the process would speed-up with the help of RPA. This would result in higher productivity.

- **Customer Satisfaction**

Artificial Intelligence in banking sector also enhances customer experiences. Banks deal with multiple queries everyday ranging from account information to application status to balance information. It becomes difficult for banks to respond to queries with low turnaround time. RPA can automate such rule based process. With the help of AI, Robotic Process Automation can resolve queries which needs decision making. Chatbot can understand the natural language to chat with customer and respond like human.

- **Credit Decisions**

According to an article published in **Finextra in January 2019**, 500 capital market executives were surveyed and out of which 14% believed that AI has already surpassed human-based systems. "The research revealed a division in the industry about the impact of using such data on the quality of decision-making. While a third (30%) of respondents believes that using a broader range of data reduces subjectivity, a fifth (18%) thinks AI exacerbates existing prejudices in the credit decision-making process." For example, ZestFinance is using AI to develop credit score for individuals and also help lenders in determining creditworthiness of the customer. Moreover, digital banks and loan-issuing app are using AI to evaluate loan eligibility and provide personalized options.

- **Fraud Detection**

Everyday thousands of transactions takes place, few pay their bills online, transfer money, pay cheques, stock trading etc. Therefore, there is a huge requirement of artificial intelligence need to be adopted in banking sector to detect fraud activities. Cyber security is a necessity for every financial institution as well as for any bank. Many banks have already implemented AI for fraud detection, for example, top banks in US is using Shape Security software which curbs credit application fraud, credential stuffing and gift card cracking by pinpointing fake users.

### **6.3 Implementation of AI in Indian Banks and Foreign Banks**

According to **Pwc FinTech Trends Report (India) 2017**, global investments in artificial intelligence touched \$5.1 billion, up from \$4.0 billion in 2015. In India, implementation of AI is taking at large pace but still it has to go far beyond the current scenario. AI is been implemented at back office and front office places for better services. Few banks in India which have already implemented AI are as follows:

#### **6.3.1 Indian Banks**

- **State Bank of India**

SBI, which is India's largest public-sector bank with 420 million customers, is embarking on its AI journey from the point of view of both employees and customers. To fuel its AI mission, in 2019, SBI launched Code for Bank, for developers, startups and students to come up with innovative ideas and solutions for the banking sector, focusing on technologies such as predictive analytics, fintech/blockchain, digital payments, IoT, AI, machine learning, BOTS and robotic process automation.

SBI is currently using an AI-based solution developed by Chapdex. From a customer chatbot perspective, SBI has launched **SIA**, an AI-powered chat assistant that addresses customer enquiries instantly and helps them with everyday banking tasks just like a bank representative. SIA is setup to handle nearly 10,000 enquiries per second or 864 million in a day. That is nearly 25% of the queries processed by Google every day. Deployment of this size is arguably the first of its kind in India and even across the world. SBI claims that SIA continuously learns with each interaction and gets better over time. Currently, SAI can address enquiries on banking products and services. It is trained with a large set of past customer questions and is said to aptly handle frequently asked questions. (Article published in **livemint** on **25 September 2017**)

- **HDFC Bank**

"HDFC Bank has developed an AI-based chatbot, **EVA**. Since its launch, Eva (which stands Electronic Virtual Assistant) has addressed over 2.7 million customer queries, interacted with over 530,000 unique users, and held 1.2 million conversations. Eva can assimilate knowledge from thousands of sources and provide simple answers in less than 0.4 seconds, the bank said. Within the first few days of its launch, Eva has answered more than 100,000 queries from thousands of customers from 17 countries across the globe. With the launch of Eva, the bank's customers can get information on its products and services instantaneously. It removes the need to search, browse or call. Eva also becomes smarter as it learns through its customer interactions. Going forward, Eva would be able to handle real banking transactions as well, which would enable HDFC Bank to offer the true power of conversational banking to its customers." (Article published in **Financial Express** on **6 September 2017**)

- **ICICI Bank**

ICICI bank, the second largest private sector bank in India has implemented software robotics. The technology adopted by the bank 'emulates human actions to automate and perform repetitive, high-volume and time-consuming tasks'. More than 1 million transactions per day take place in ICICI bank with the help of AI. According to a report by **Baruah, A. 2019**, "At ICICI bank, software robots have reduced the response time to customers by up to 60% and increased accuracy to 100% which resulted in improving bank's productivity and efficiency. It also enabled the bank's employees to focus on value-added and customer-related functions". The software robots are configured to interpret information from systems, recognize the patterns and run business process across multiple applications to execute activities. Moreover,

in February 2019, ICICI bank has launched AI based chatbot named **iPal**. The services offered by iPal are of three categories i.e. it involves FAQs, financial transactions and helping people in discovering new features. Since it is been launched, the chatbot has interacted with 3.1 million customers with 90% accuracy rate.

- **Axis Bank**

Axis Bank has launched an AI and NLP enabled app in 2019. This app is introduced to help customers with financial and non-financial transactions, answer FAQs and get in touch with bank for loan and other products. (News published on **Fintech News 5 September 2018**)

- **Canara Bank**

Humanoid robot named **Mitra** and **Candi** were introduced in Canara Bank in 2017. Mitra was programmed to navigate customer's at large premises. Basically, it is performing the function of a receptionist. (News published in **Hindustan Times 22 September 2017**)

### 6.3.2 Foreign Banks

- **Malaysian Banks**

According to a research conducted by **OmniPoll** in **2017**, Malaysian bank customers are ready to clinch on artificial intelligence and automation in digital banking. With long bank queues the customers are frustrated. The survey revealed that 47% of respondents were annoyed from long queues, 20% were annoyed because they have to repeat themselves and only 12% were annoyed by being unable to complete an "online" service online.

Another report published by **FinTech Malaysia** reveals that as chatbot are been implemented in many banks, now is the time to go beyond chatbot and think about AI in a broader aspect. There are many aspects like cyber security which is required to be handled wisely and for that purpose AI can be implemented by Malaysian banks. For this banks are increasingly warming up the idea of collaborating with both local and international FinTech companies.

- **US Banks**

JPMorgan Chase invested in technology and introduced a **Contract Intelligence (COiN)** chatbot designed to analyze legal documents and extract important data points and clauses in 2017. JPMorgan Chase upped its technology budget to \$11.4 billion in 2019 (Article published by **Kumba Sennar 2019** in Emerj). Another example is of US Bank which launched Expense Wizard in collaboration with vendor Chrome River. Expense Wizard is an artificial intelligence-based expense management mobile app that allows users to charge businesses for travel expenses without having to pay up-front themselves first (News published on the official website of **US Bank on 9 May 2019**).

Bank of America is using **Erica** as a chatbot which enables to alert customers if they are spending too much remind customers to recurring payments and lock and unlock customers debit card on request. Hence many banks in US have implemented AI for better customer experience.

### 6.4 Threats Posed by Artificial Intelligence

- **Job Loss:** Banks face the risk of backlash from their employees due to the potential automation of tasks, which can lead to job loss and job reassignments. AI, in the garb of increasing enterprise productivity, will reshape the way the employees perform their jobs. This could lead to possible dissatisfaction among employees, resulting in resignations or employees being fired due to inefficiency. AI can replace a teller, customer service executive, loan processing officer, compliance officer, and even finance managers.
- **Reduction in customer Loyalty:** As the direct interaction between the customer and the bank representative reduces, this sometimes leads to reduction in customer loyalty. In India, banks have

a special emotional value with their customers as they help in fulfilling the dreams of buying a house or a car. So due to the loss of human touch and high implementation of AI in the banking sector, loyalty of customer towards their particular bank can reduce.

- **Leakage and Misuse of Data:** Cyber, physical and political threats arise with growth in AI. As complete transparency while venturing into new AI projects could lead to leakage of data and misuse of the information.

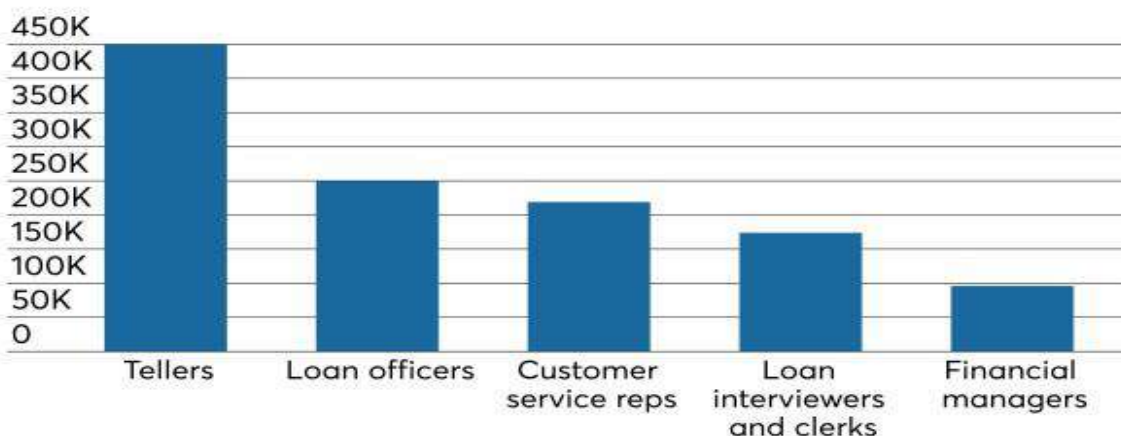
## 6.5 Impact of AI on Indian Banks

Artificial Intelligence is leading in the banking industry. Every bank in India is chasing for AI and implementing the same. Therefore, to study the impact of AI on banking sector, an interview was conducted by the researcher with 50 different bankers. According to Vipin Chopra, AGM, State Bank of India, Artificial Intelligence is helping the banking industry by reducing the big queues in the branches. Before reaching the branches, customers are having voice assistance with the AI but there is also a big threat to the employees of banking sector. There could be job loss in the banking sector as AI will replace human beings. In this context, (Crosman 2018) analyzed that in banking, 485,000 tellers, 219,000 customer service representatives and 174,000 loan interviewers will be replaced by Chatbots, voice assistants and automated authentication and biometric technology.

Figure 1: Impact of AI in Banking Sector in terms of Job Loss

### Losing their jobs to bots

Autonomous Research estimates that 1.2 million people working in banking and lending will be replaced by artificial intelligence software by 2030



Source: Crosman, P. (2018). *How Artificial Intelligence is reshaping jobs in banking*. American Banker

Another view of the banker Dinesh Dang, Senior Chief Manager and IT expert, State Bank of India, pointed out that Consumers are comfortable with banks using AI in monitoring threats such as fraud. Similarly, Vishal Singhla, Senior Chief Manager ICICI Bank says that ICICI bank is using AI based chatbot iPal which involves FAQs, financial transactions and helping people in discovering new features. These features are becoming popular among the customers and it is increasing customer satisfaction. He said that iPal can chat and even respond like a human. Likewise, other banking experts put their views and discussed about positives as well as negative aspects of AI in banking sector. Few bankers considered AI a support system in the banking sector, on the other hand few bankers considered it as a threat to employees, as AI can perform at a high speed and with more accuracy than humans. But according to **Crosman 2018**, using AI has saved banks 70% in conversion costs. Hence, it can be concluded that AI has a great impact and a huge scope in the Indian Banking sector.

## 6.6 Conclusion

Here we can conclude that today “AI is not yet ready to replace humans; instead it will augment them, letting them move into more value-adding activities, freeing them from rote actions, making them more efficient, and performing calculations that would be physically impossible for a single person. We take an optimistic view of AI in banking — for those who embrace it, AI will over time provide a better experience for customers and employees while delivering real business value on every dimension”. In other words we can say that artificial intelligence is changing the banking sector in many ways like: Blockchain, Personalization, Digitalization, Digital wallets, Voice Assistance and customer support. AI is playing a very crucial role in banking sector in reducing cost, mitigating risk, detecting fraud and increasing customer satisfaction but on the other hand many precautions should be taken while implementing it, as there is always a threat of leakage of data which could incur a huge loss to the banks. Artificial Intelligence is already been implemented in many banks across the world like Erica implemented by Bank of America, HDFC bank deployed Eva, State Bank of India has launched SIA and similarly other banks in India, Malaysia, USA are further implementing AI in banking sector to target customer satisfaction. Hence we can conclude that AI is an emerging tool in banking sector.

## REFERENCES

- Baruah, A. (2019). *AI Applications in the Top 4 Indian Banks*. Boston: Emerj.
- Clair, C. L. (2017). *The RPA Market Will Reach \$2.9 Billion By 2021*. Cambridge, U.S.: Forrester Research, Inc.
- Crosman, P. (2018). *How Artificial Intelligence is reshaping jobs in banking*. American Banker.
- Eletter, S. F., Yaseen, S. G., & Elrefae, G. A. (2010). Neuro-based artificial intelligence model for loan decisions. *American Journal of Economics and Business Administration*, 2(1), 27.
- Faraz, A. (2017). *FinTech Trends Report India*. India: FinTech.
- Fethi, M. D., & Pasiouras, F. (2010). Assessing bank efficiency and performance with operational research and artificial intelligence techniques: A survey. *European journal of operational research*, 204(2), 189-198.
- Frankel, S. (2018). *The Rise of AI in Financial Services*. Chicago: Narrative Science.
- Jewandah, S. (2018). How Artificial Intelligence Is Changing The Banking Sector –A Case Study of top four Commercial Indian Banks. *International Journal of Management, Technology And Engineering*, 8 (7), 525-530.
- Latimore, D. (2018). *Artificial Intelligence in Banking*. USA: Oliver Wayman, Celent.
- (2017). *Malaysian Bank Customers Ready to Embrace Artificial Intelligence and Automation in Digital Banking - Unisys Banking Insights Survey*. Unisys.
- Maskey, S. (2018). *How Artificial Intelligence Is Helping Financial Institutions*. New York City: Forbes Technology Council.
- Padhi, U. (2019). *Future Of Artificial Intelligence In The Banking Sector*. Business and Economy, Sci-Tech.
- R Vedapradha, R. H. (2018). Application of Artificial Intelligence in Investment Banks. *Review of Economic and Business Studies*, 11 (2), 131-136.
- Schroer, A. (2019). *AI And The Bottom Line: 15 Examples Of Artificial Intelligence In Finance*. Chicago: Built In.
- Vijai, D. C. (2019). Artificial Intelligence in Indian Banking Sector: Challenges and Opportunities. *International Journal of Advanced Research*, 7 (5), 1581-1587.

## Links

- <https://builtin.com/artificial-intelligence/ai-finance-banking-applications-companies> accessed on 5 July 2019
- <https://www.youthkiawaaz.com/2019/07/future-of-artificial-intelligence-in-banks/>
- <https://www.cio.in/news/after-success-rpa-icici-bank-guns-ai-pie> accessed on 12 July 2019

<https://economictimes.indiatimes.com/industry/banking/finance/banking/sbi-other-banks-using-ai-big-time-to-improve-efficiency-cut-costs/articleshow/64814370.cms> accessed on 12 July 2019

<https://tech.economictimes.indiatimes.com/news/corporate/rpa-in-india-the-time-is-now/64299080> accessed on 12 July 2019

<https://www.yesbank.in/media/press-releases/yes-bank-becomes-the-1st-bank-in-india-to-launch-robotics-based-digital-export-and-import-payment-solutions-for-corporates> accessed on 12 July 2019

<https://automationedge.com/robotic-process-automation-rpa-in-banking-industry/> accessed on 12 July 2019

<https://www.analyticsvidhya.com/blog/2017/04/5-ai-applications-in-banking-to-look-out-for-in-next-5-years/>

<https://emerj.com/ai-sector-overviews/ai-applications-in-the-top-4-indian-banks/> accessed on 20 July 2019

<https://www.enterprisedges.com/artificial-intelligence-banking-industry> accessed on 5 July 2019

<https://cdn2.hubspot.net/hubfs/2392451/Marketing%20Assets/Artificial%20Intelligence%20in%20Banking%20-%20Where%20to%20Start.pdf> accessed on 5 August 2019

<http://www.idc.com/getdoc.jsp?containerId=prUS41878616> accessed on 5 August 2019

<https://www.forbes.com/sites/forbestechcouncil/2018/12/05/how-artificial-intelligence-is-helping-financial-institutions/#37c5ca0460a4> accessed on 5 August 2019

<https://www.cnbc.com/2016/10/24/bank-of-america-launches-ai-chatbot-erica--heres-what-it-does.html> accessed on 5 July 2019

<https://www.icicibank.com/aboutus/article.page?identifier=news-icici-bank-introduces-software-robotics-to-power-banking-operations-20160809103646464> accessed on 5 August 2019

<https://www.yesbank.in/media/press-releases/yes-bank-becomes-the-1st-bank-in-india-to-launch-robotics-based-digital-export-and-import-payment-solutions-for-corporates> accessed on 5 July 2019

<https://www.livemint.com/Industry/68ipadKiLQwxGUKTxXd3pL/SBI-launches-chatbot-to-help-customers-in-banking-services.html> accessed on 20 August 2019

<https://www.fintechnews.org/artificial-intelligence-comes-to-the-rescue-of-banks-banks-trusting-machines-more-than-humans/> accessed on 5 July 2019

<https://www.hindustantimes.com/india-news/meet-mitra-and-candi-robots-taking-care-of-customers-at-canara-bank-in-bengaluru/story-RFEeYogMs2nRu5dFKc7gOI.html> accessed on 20 August 2019

<https://emerj.com/ai-sector-overviews/ai-in-banking-analysis/> accessed on 26 August 2019

<https://www.usbank.com/newsroom/news/us-bank-and-chrome-river-launch-expense-wizard.html> accessed on 30 September 2019

<https://www.finextra.com/pressarticle/77005/ai-to-outperform-human-credit-decisions-by-2024---survey> accessed on 30 September 2019

## Conditions that Influence Teachers' ICT Integration in Teaching: Reflections from Technology Investment Management

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### ABSTRACT

*The purpose of this critical review is to determine the conditions that influence in integration of information and communication technology (ICT) by teachers in their teaching. Teachers are the main implementers of ICT integration in teaching and therefore can claim a large stake in the success of the process. We engaged in a systematic search strategy to determine the themes pertaining to the conditions that influence teachers' integrating ICT in their teaching. We then applied a set of criteria to decide whether to include or exclude each study derived. Results from the critical review were then incorporated, analysed, and critiqued inductively using Corbin and Strauss's (2008) constant comparative technique advocated by the grounded theory approach for constructing themes. Based on the first-second-order barriers proposed by (Ertmer, 1999), the analysis uncovered the following eight themes of conditions that influence the integration of ICT by teachers in their teaching: (1) belief, motivation, and attitudes; (2) school's preparedness on ICT resources, (3) incorporation of technology in evaluations and curricular plans; (4) availability of time; (5) support from administration and technical team; (6) professional development; (7) local leadership; and (8) school's ICT policy, planning, and strategies. This review provides valuable information for the research community interested in the integration of ICT by teachers; the results provide some insights into the conditions that influence the integration of ICT by teachers in teaching. The findings can inform the strategies for successful integration of ICT in schools especially for developing countries in the Asia-Pacific region.*

**KEYWORDS:** Critical review, Teachers' ICT integration, successful IC integration strategies

### 1.0 INTRODUCTION

According to a report by United Nations Educational, Scientific and Cultural Organisation (UNESCO), the high investment in bringing technology to schools is still inconclusive as long as the organisation of a school remains stagnant (Bannayan et al., 2012). High investment in technology in schools does not guarantee that the teachers will use information and communication technology (ICT) effectively for teaching purposes. Previous studies which were conducted mainly in advanced economies, have portrayed how the roles, rules, and activities within a school's sociocultural context reflect how an organisation must change for successful ICT integration, which in turn, will affect the teachers' integrating the technology in their teaching. Scholars have revealed the link between the lack of schools' organisational change and technological investment (Divaharan & Lim, 2010; Lim, Zhao, Tondeur, Chai, & Tsai, 2013). For example, Lim et al. (2013) found that after comparing the outcomes achieved through investment in technology with sectors outside education, the gains in terms of reduced costs and increased productivity achieved by schools were significantly smaller. Another study has proposed that schools instigate organisational change by focusing on an over-arching ICT strategy to provide a clear direction to the key players, particularly teachers who would eventually shape the ICT culture of a school (Razak, Jalil, Krauss, & Ahmad, 2018). Due to the literature on successful ICT integration among teachers is limited and



fragmented, a systematic search strategy for critical review method was used to identify and analyse relevant studies to create a more comprehensive representation of the strategies for teachers' successful ICT integration. Therefore, the purpose of this critical review is to determine the conditions that influence teachers' integrating ICT into their teaching, as reported in the available literature.

The cost incurring from operating a school can have negative impact on its investment in technology, particularly in the form of barriers in implementation of ICT integration (Divaharan & Lim, 2010; Laferriere et al., 2013; Lim, 2007; Rabah, 2015). In developed and developing countries, two types of barriers to ICT integration exist: the first-order barriers and the second-order barriers. These barriers have hindered teachers from integrating ICT in their teaching thus resulting in minimal ICT integration implementation in schools (for first-order barriers, see Divaharan & Lim, 2010; Laferriere et al., 2013; Lim, 2007; Rabah, 2015; and for second-order barriers, see Al-zaidiyeen & Mei, 2010; Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur, & Sendurur, 2012; Giavrimis, Giossi, & Papastamatis, 2011; Teo, 2011). According to Ertmer et al. (2012), the first-order barriers are "external to the teacher," such as technology resources, training, and support; whereas the second-order barriers are "internal to the teacher," such as "teachers' confidence, beliefs about how students learned, as well as the perceived value of technology to the teaching/learning process" (p. 423). This article reviews both barriers to critically appraise the relevant studies that have framed the emerging themes into meaningful and comparable categories to establish the conditions that influence teachers' integrating ICT in their teaching.

Teachers need be the primary participants of a study on ICT integration because they are the implementers who can claim a large stake in the success of the ICT integration process in schools. As explained by Martin (2000), teachers play an important role in successful ICT integration in schools in that "without the input and acceptance of teachers, the developments of useful educational technology projects are hindered." Martin also mentioned that "not only teachers are the gatekeepers of the classroom, but they are also the greatest source of information about curriculum design and educational content" (p.8). To facilitate understanding of the success of teachers' integrating ICT in teaching, this review intends to address the following question: what are the conditions that influence teachers' integrating ICT in their teaching? We hope that by determining the conditions, we can inform educational technologists and academic players on the successful strategies for the integration of ICT in teaching especially for developing countries in the Asia-Pacific region due to lack of awareness on successful ICT integration in schools.

We present our method of critical review inquiry for analysis in line with the purpose and the research question. In the subsequent sections, we explain the themes that emerged from this critical review within the first-second-order barriers proposed by (Ertmer, 1999), particularly on the conditions that influence teachers' integrating ICT in teaching. Finally, we summarise the findings and discuss possible implications for the research community to consider in regard to successful integration of ICT in teaching.

## 2.0 METHODOLOGY

### 2.1 Data Collection

We conducted a structured search strategy to obtain peer-reviewed articles from electronic databases including Emerald collection, Springer collection, ScienceDirect collection, EBSCO host and the ERIC collection connected via the UPM's library. The search was not confined to any parameter in terms of year of publications as we wanted to include as many works as possible in order to identify the patterns of publications over the years. Two inclusions criteria were applied in articles to be included for the review: (a) all articles that report studies conducted in an educational setting and those that focus on ICT integration into teaching (the sample of informants in the study can be those in primary and secondary schools); and (b) research papers or original papers that went through a peer-reviewed process prior to publication to enable us to compare findings across studies and obtain higher-order thematic categories. The following three exclusion criteria were applied in selecting the articles for the review: (a) articles that did not go through a peer-reviewed process because it is essential that the review derive findings obtained from valid and reliable studies; (b) articles that do not report any explicit method of data collection; and (c) articles that concern the study of students and specific technologies, such as iPad and interactive whiteboard, the reason being the need for us to focus on the integration of ICT by teachers.

Based on inclusion and exclusion criteria, we derived 28 studies published between 2000 and 2016. These articles published in various journals are *International Journal of Technology and Design Education*, *Computers and Education*, *Australasian Journal of Educational Technology*, *Computer Assisted Learning*,



*Irish Educational Studies, International Journal of Education and Development using Information and Communication Technology, International Education Studies, European Journal of Teacher Education, The International Journal of Information and Learning Technology, Malaysian Online Journal of Educational Technology, Quality Assurance in Education, and International Journal of Instruction.* Because we employed a constant comparative technique, we searched for published studies whose findings are comparable. We searched using the command “AND” and “OR” operators for a combination of the following words: “ICT integration,” “primary schools,” “secondary schools,” “ICT in education,” and “technology.” We searched until reaching the point of saturation (i.e., locating the same articles using different combinations of search terms). Finally, we searched for the works cited in the identified articles.

## **2.2 Data Analysis**

We employed Mayring's (2014) qualitative content analysis by means of “inductive category formation technique” to navigate each published work on the integration of ICT by teachers into teaching in primary and secondary education. We wrote the idea in a margin note on the paper for the data attributed to the particular codes for coding at that time. We continue the same process for the rest of the research papers in this study and compares the segments of the data for the research question and coded them.

For constructing the themes, the data of research papers in this study were compared using Corbin and Strauss's (2008) constant comparative technique advocated by the GT approach to address the research question. This technique was employed to look for similarities and differences, typicality and diversity between data of the research papers in this study. We constructed the theme at the end of the coding procedure of the first research paper. We grouped the codes that seemed similar and repeated the same process of analysis for the next research paper's data. We noticed the words or phrases used in different research papers that were similar to express the same ideas. These common repeating of ideas became a theme.

## **3.0 RESULTS AND DISCUSSIONS**

This section reports the findings from the critical reviewed in terms of the conditions that influence teachers' ICT integration in teaching.

### **3.1 Conditions that influence the integration of ICT by teachers in teaching**

Most of the studies conducted in the Western and Asian countries have revealed the various conditions for successful integration of ICT by teachers in teaching. It is understood that if these conditions are not met, the overall process would be hampered by barriers or tensions that impede the integration of ICT by teachers in teaching, either as the teacher's external (first-order) barrier or internal (second-order) barrier (Ertmer, 1999). Based on the critical review, it can be concluded that the conditions for successful ICT integration by teachers can be categorised into eight themes: (1) belief, motivation, and attitudes; (2) school's preparedness of ICT resources; (3) incorporation of technology in evaluations and curricular plans; (4) availability of time; (5) support from administration and technical team; (6) professional development; (7) local leadership; and (8) school's ICT policy, planning and strategies.

#### **3.1.1 Belief, motivation, and attitudes towards ICT integration**

Teachers' beliefs towards ICT integration can influence students' learning, which in turn, would influence the integration of ICT by teachers in their teaching. Beliefs is defined as “suppositions, commitments, and ideologies” and knowledge is referred to as “factual propositions and understandings” (Calderhead 1996, p. 715). Beliefs is also classified as a second-order barrier or teachers' intrinsic factors that facilitate ICT integration among teachers (Ertmer, 1999). For example, one study conducted in Australian primary schools revealed that teachers' ICT beliefs led to their best practices in ICT adoption. The outcome was achieved when the teachers acknowledged the role of ICT as a knowledge construction tool through collaborative activities, the relevance of ICT to society and future employability, and the orientation towards authentic problem-based approaches in teaching and learning (T&L) (Prestridge, 2012). Another qualitative case studies among primary and secondary school teachers in the USA found that the teachers' belief on ICT integration managed to shift their teaching from being teacher-centered to being student-centered (Ertmer et al., 2012). The student-centered teaching is the authenticity, student choice, and collaboration that students can get when teacher ICT integration implemented in teaching (Ertmer et al.,

2012; Snape & Fox-Turnbull, 2013). Another survey conducted by Sang et al. (2011) revealed that teachers' belief about ICT can facilitate their understanding of the learning process hence the development of effective teaching models. Other studies in developing countries including those conducted in Malaysia found that the highest teachers' belief could lead to the highest levels of ICT use (Al-zaidiyeen & Mei, 2010; Hamzah, Embi, & Ismail, 2010; Mukti, 2000).

Teachers' level of motivation to use ICT would increase as they believe that ICT would benefit their students' learning (Sang et al., 2011). Motivation refers to the process in which a goal-directed behaviour is instigated and sustained (Schunk, 1990). In other words, motivational factors are considered to be part of a teacher's goal structures and beliefs about what is important and would benefit his or her students' learning (Ames, 1992). Other scholars emphasised the benefits of ICT to support and enhance a teaching processes, such as the use of computers for demonstration purpose, drill and practice activities, modelling, representation of complex knowledge components, discussions, collaborations and project work (Sang et al., 2011). In Sang et al.'s quantitative study, they attempted to uncover the constructivist belief among the teachers in Chinese primary schools and found that the teachers' motivation gave direct effect towards the use of ICT in classroom (Sang et al., 2011). They also found that instead of having belief towards ICT integration, the teachers attained their motivation to use ICT in teaching when their schools are fully equipped with ICT facilities and provide sufficient support from the technical and administration teams (Drent & Meelissen, 2008). This view is supported by Mirzajani, Mahmud, Ayub, and Wong (2016) who conducted a study among Iranian secondary school teachers and found that adequate administrative and technical support, appropriate ICT skills and knowledge, as well as adequate resources had influenced the teachers' utilising ICT in classroom (Mirzajani et al., 2016).

The empirical studies on ICT integration conducted in the past decade appear to focus on attitude as one of the factors contributing to successful adoption of ICT by teachers. The results generally showed that the teachers were more eager to integrate ICT into their teaching when they have positive attitude towards the use of ICT in education. Fishbein and Ajzen (1975) defined attitude as a "learned predisposition to respond in a consistently favourable and unfavourable manner with respect to a given object" (p.6). Without a positive attitude, it would be difficult to cultivate ICT competencies among teachers, and it would be almost impossible to have teachers engage in innovative pedagogical approaches, which are the necessary conditions for effective integration of ICT in education (Hadjerrouit, 2008). Hadjerrouit further urges that teachers' attitudes towards ICT integration be a key to triggering their action to integrate ICT into teaching. This view is supported by Ertmer et al. (2012), who as a Western scholar, contended that the strongest barrier preventing teachers from using ICT was their existing attitude towards ICT integration. This factor was found to have the biggest impact on teachers' success in ICT integration. Likewise, previous studies in the field of ICT integration in developing countries appear to share the same focus as those conducted in developed countries; found that attitudes are the key factors influencing teachers' acceptance of ICT as a teaching tool (Zyad, 2016). This view is supported by Al-zaidiyeen and Mei (2010) who conducted a quantitative study in Jordan and found that (1) the teachers held positive attitudes towards the use of ICT and that (2) the teachers' level of ICT use was positive correlated to their attitudes towards ICT.

Overall, there seems to be some evidence that indicates that teachers' internal factors facilitate successful ICT integration. These factors are belief, motivation, and attitudes. Beliefs and motivation are implicit, unobservable and complex in relation to what one knows and what one actually believes and motivates them to do action. Even though the teachers' attitudes can be explicit, they are observable when the teachers' actions reflect their attitudes. However, attitudes are still difficult to measure because attitudes can change as a belief changes. The definition of teacher's belief, motivation, and attitudes used in the literature are diverse and difficult to define. However, specific ideas from a substantive body of knowledge about teachers' belief, motivation, and attitudes are evident to help us understand and deal effectively with the complexity of belief, motivation, and attitudes towards ICT integration among teachers in teaching.

### **3.1.2 School's preparedness on ICT resources**

Over a decade, there has been an increasing number of published works on the link between school's preparedness of ICT resources and successful ICT integration in schools (Demiraslan & Usluel, 2008; Mukti, 2000). In recent years, the issue of school preparedness has still been debated by researchers around the world (Ghavifekr, Kunjappan, Ramasamy, & Anthony, 2016; Goktas, Gedik, & Baydas, 2013; Judge, 2013; Rabah, 2015). For almost a decade, scholars in the Western and Asian regions have concluded that one of the important factors for successful integration of ICT in schools is a facility fully equipped with

hardware, connectivity, and software (Ali, Nor, Hamzah, & Alwi, 2009; Goktas et al., 2013; Nikian, Nor, & Aziz, 2013). In fact, in recent years, this issue has still debatable by researchers over the world (Ghavifekr et al., 2016; Goktas et al., 2013; Judge, 2013; Rabah, 2015). For example, the failure ICT integration in schools can be due several reasons, such as (i) the ICT facilities being available only in a limited number of classrooms; (ii) only a few computer labs being available for ICT-integrated lessons to be held in each school; (iii) frequent technical problems with the computer networks; or (iv) poor Internet connection speed (Rabah, 2015). Rabah used a qualitative approach to investigate the challenges of ICT integration in Quebec English Schools in Canada. Another quantitative study in Malaysian public secondary schools revealed that outdated technological resources and the availability of the ICT facilities had brought about the failure of ICT integration in schools (Ghavifekr et al., 2016). These studies showed that school's preparedness of ICT resources is a key factor to the success of ICT integration in schools.

The preparedness of ICT resources refers to a school's allocation of budget for ICT resources. A large volume of published studies have emphasised the role of funding for ICT resources in providing the basic infrastructure of ICT facilities. In one qualitative study in Canada, Rabah (2015) found that the investments focus on purchasing new equipment and software, but some classrooms were not designed to incorporate ICT when they were initially built (Rabah, 2015). She therefore recommended that a school's investments focus on developing its infrastructure, such as by installing WIFI, adapting classroom settings and refurbishing and maintaining existing ICT equipment.

In another study in rural schools in Canada, Laferriere et al. (2013) found that government's funding were confirmed late, which created tension (Laferriere et al., 2013). They also found that the tension was more critical when decisions regarding technology infrastructure, long-term loans of personal laptops to participating teachers were delayed. This view is supported by Goktas et al. (2013), who claimed that the primary schools in Turkey lack hardware and appropriate or high-quality teaching software materials due to limited budget allocation for ICT resources. As a result, the barriers to adopting ICT between 2005 and 2011 are presently inconclusive. This gap points to the need for better management of technological facilities and more provision of equal access to technology resources. In fact, budget allocation by schools is an important factor contributing to the success ICT integration for T&L purpose.

### **3.1.3 Incorporation of technology in curricular plans and students' assessments**

Over a decade, a relationship was found to exist between successful ICT integration into teaching and incorporation of technology in curricular plans (Demiraslan & Usluel, 2008; Divaharan & Lim, 2010; Lim & Chai, 2004). In order to encourage teachers to integrate ICT in their teaching, schools need a curriculum focused, over-arching ICT goal in order to provide clear directions for the teachers (Divaharan & Lim, 2010). Divaharan and Lim particularly studied three types of secondary schools in an attempt to understand how the teachers in Singapore used different types of ICT integration. The incorporation of technology in curricular plans is supported by Lim and Chai (2004) who asserted that curriculum gives constraints to the planning and organisation of the students learning. Lim and Chai also conducted two case studies by means of observations, focus group discussions with students, and face-to-face interviews with teachers in selected primary schools in Singapore. The result was consistent with another study conducted in a developing country like Turkey (Demiraslan & Usluel, 2008). Demiraslan and Usluel conducted a qualitative study in primary schools in Turkey and concluded that schools should consider an inflexible timetable curriculum in order to produce ICT-related output for students. Another study found that limited involvement of the management of teacher training institutes towards the use of ICT within the curriculum (Drent & Meelissen, 2008).

International studies have confirmed the link between the incorporation of students' assessment and successful ICT integration into teaching. However, the issue is still not completely understood due to the current studies in Western or developed countries uncovering that students' assessment has hindered teachers' ICT integration into teaching. One qualitative study in Quebec English Schools in Canada involving in-depth interviews with twenty three teachers and educational consultants revealed a necessity to re-examine the evaluation approaches when ICT is integrated into the pedagogical programmes by considering how the utilisation of ICT can meet the requirements of students' evaluations (Rabah, 2015). Rabah further contended that it is a challenge for teachers to integrate ICT in their teaching because teachers do not know how to measure students' assessment when assessing ICT-related outputs. In addition, teachers regard that the use of ICT in assessment does not need to be considered because students are assessed based on examinations (Demiraslan & Usluel, 2008). This view is in line with those of prominent scholars of ICT

in education (e.g., Laferrere et al., 2013; Lim, 2007) and UNESCO report (Bannayan et al., 2012). In other words, proactive regulations are required to include students assessment pertaining to ICT integration into a curriculum.

#### **3.1.4 Availability of time**

The availability of time is one of the key conditions that have a considerable effect on teachers' integrating ICT in their teaching. One quantitative study among primary and secondary school teachers in Malaysia found that the teachers did not have enough time to prepare lessons and handouts for computer usage and that it was challenging to complete the required material in the computer literacy and achieve the learning objectives within the time allocated to them (Mukti, 2000). Nine years later, a research on the conditions facilitating the implementation of ICT integration in secondary school in the Malaysian smart schools also showed that time constraints is the key problem impeding teachers from integrating ICT in their teaching (Ali et al., 2009). Ali et al. concluded that the teachers did not have the time to do a teaching plan and integrate ICT into teaching. This view is supported by Lim (2007), who wrote that teachers are given insufficient time to plan ICT-mediated instructions (Lim & Chai, 2004).

Instead of time constraint pertaining to the preparation of teaching ICT plan, a recent mix-method study among secondary schools teachers in Norway found that the teachers had difficulty in integrating ICT into teaching without being given time to find their own style and teaching method (Wikan & Molster, 2011). In fact, more time is needed when the ICT tools are stored in a place away from the classroom (Ghavifekr et al., 2016; Umar & Hassan, 2015). This view is consistent with the findings of Nikian et al. (2013), who conducted a qualitative study in primary and secondary schools in Malaysia. In another study among teachers, Lim (2007) concluded that the teachers were afraid that they might not be able to complete the syllabus if they frequently use ICT in their classroom.

Another condition is related to time is technical problem and teachers' ICT competency. One study conducted among teachers in Malaysia found that the teachers were complaining about the insufficient time for them to manage their students' taking to turn to use the computer due to the machine's frequent breakdown (Mukti, 2000). A recent study in Malaysia supported this availability of time is Nikian et al. (2013) reported that the absence of access to computers has led to time constraints because teachers need to be sure that the computers to be used are in good condition before beginning their class. In Malaysian public schools, most teachers are also concerned with their ICT competency because they have insufficient time to master ICT skills (Ali et al., 2009). Ali et al. found that teachers are reluctant to accept new knowledge if they think it would bring threat or represent a burden as teachers are already burdened with administrative works. The evidence of time constraint as found among teachers in developing countries is presently inconclusive.

#### **3.1.5 Support from school's personnel**

A considerable amount of literature has been published on teachers' ICT integration (Demiraslan & Usluel, 2008; Mirzajani et al., 2016; Rabah, 2015; Sang et al., 2011). This literature indicates that support from school's personnel would lead to successful ICT integration into teaching. The school's personnel consist of support from administrative team, technical team, and peers. One study in Turkey adopted a sociocultural approach and found that the teachers perceived the administration as significant conditions that facilitate their willingness to introduce technology into teaching (Demiraslan & Usluel, 2008). Recent studies have also claimed that sufficient support from administrators and ICT coordination will increase the educators' commitment to using technology. Demiraslan and Usluel suggested that these kinds of ongoing support to teachers will gain their confidence in using the ICT. This view is supported by Goktas et al. (2013) who claimed that the support of the ICT coordinator and the school administration is necessary to assure the effectiveness of ICT integration process. Rabah (2015) perceived school headmasters' leadership as one of the most important catalysts affecting the successful integration of ICT. She further claimed that supporting school leadership and clear ICT vision from school leaders and investments for ICT integration such as ICT training are worth the efforts.

The literature indicates that technical support is needed in every school to cater to the technical issues pertaining to ICT integration. Previous studies have found that the insufficiency of technical support specialists available to fix technical problem had led to the barrier of teachers' integrating ICT in their teaching (Ali et al., 2009; Goktas et al., 2013; Rabah, 2015). Rabah (2015) recommended that leaders provide a clear vision in regard to providing technical personnel that can facilitate the implementation on

ICT integration. Another prominent scholar on ICT in education, Lim (2007), claimed that teachers can successfully deter their students from engaging in deviant behaviours which might be resulted from the lack of supporting role of the technical assistant. In case technical problems occur, a technical support team can be established, and this team will fix any technology failures or technical problems before, during, and after a class that is conducted with the use of the ICT (Divaharan & Lim, 2010).

Previous studies have emphasised the role of peer support pertaining successful teachers' ICT integration. Zah et al. (2010) claimed that administration work will be a burden or distraction preventing teachers from focusing on T&L. In fact, some scholars have suggested that teachers' workloads such as clerical work need to be diminished (Goktas et al., 2013). One of the efforts to reduce teachers' workload, as suggested by scholars, is to provide peer support, and the collaboration and sharing knowledge (Demiraslan & Usluel, 2008; Goktas et al., 2013; Jones & Moreland, 2004). For example, a study in Singapore suggests that in addressing teachers' workload, teachers must conduct sharing sessions to design and develop ICT-based lessons (Lim & Chai, 2004). Similar result was found in a study on secondary schools in Iran in that sharing of information and cooperation among teachers were also the major factors influencing teachers' motivation to integrate ICT in their lessons (Mirzajani et al., 2016).

### **3.1.6 Professional development for teachers**

Professional development for teachers in relation to technology education has always been central to the teaching profession since twenty decades ago (Compton & Jones, 1998). The most important criterion in professional development is a comprehensive and quality professional development (Divaharan & Lim, 2010; Tondeur et al., 2008). For almost a decade, scholars in developed countries have urged that ICT training be a component of quality professional development for teachers (Rabah, 2015; Tubin, 2007). This view is supported by Tsitouridou and Vryzas (2004), who found that quality training is a crucial issue that can develop teacher's confidence in experimenting with the innovations integrated into a curriculum (Hennessy, Ruthven, & Brindley, 2005). More recent studies in developed countries have concluded that the on-going process of ICT training is more meaningful because it affects teachers' competency and confidence in integrating ICT into teaching (Prestridge, 2012; Rabah, 2015). An ICT training would also equip teachers with the necessary knowledge and skills on ICT (Rabah, 2015). One quantitative longitudinal study involving teachers revealed that the teachers began to believe how computers could be used to support T&L after they attended the HERMES training (Judge, 2013). Another mix-method study in Norway found that "strong beliefs" on using ICT in teaching were noted after the teachers were trained over a two-year period (Wikan & Molster, 2011).

From the perspectives of developing countries, over a decade, previous studies have indicated that the number of teachers' training on the integration of ICT into teaching was extremely low (Buabeng-Andoh, 2015; Mukti, 2000; Umar & Hassan, 2015). In addition, the ICT trainings provided either by the State Education Department of Ministry of Education or other outside agencies do not meet teachers professional and career developments (Umar & Hassan, 2015). One qualitative study in Malaysia among teachers showed that the teachers felt that it was crucial for them to undergo training (Nikian et al., 2013). High-quality ICT training should also be offered to pre-service teachers because this training would familiarise them with ICT-integration environments upon graduation. This view is supported by Sang et al. (2011), who conducted a quantitative study in Chinese primary schools and found that high-quality ICT training enhanced the integration of ICT into teaching. Such professional development has been dominantly conducted in Western and European countries, and this progress should be emulated by some developing countries, including Malaysia, due to the importance of ICT training in developing teachers' ICT integration competencies.

Instead of focusing on knowledge and technology, an ICT training should take into account teachers' need for career development. As proposed by scholars, the trainings needed by teachers are pedagogical training (Rabah, 2015), leadership training (Laferriere et al., 2013), knowledge transfer training (the purpose being to educate young teachers to appreciate the involvement and opportunity to share with peers) (Judge, 2013), and students' assessment training for assessing ICT-related outputs (Rabah, 2015). Rabah conducted a focus-group discussion with 23 teachers and educational consultants to gather the perceptions of ICT integration in Québec English Schools, specifically in regard to the benefits and challenges of ICT integration in the schools. Various trainings will increase the levels of teachers' integrating ICT in their teaching because such trainings would enhance teachers' competencies in using the

ICT. These trainings should be included professional development planning that emphasises the use of ICT in the activities of the training programmes.

### **3.1.7 School's leadership**

International research on teachers' ICT integration points to the crucial role of local leadership in implementing and supporting ICT integration in T&L (Rabah, 2015). Findings from the previous studies indicate that teachers perceive school headmasters' leadership as one of the most important catalysts affecting the successful integration of ICT tools (Rabah, 2015; Tondeur et al., 2008). Findings from a quantitative study conducted Flemish primary school in Belgium indicate that the headmasters were seen as the catalysts and facilitators of ICT integration in the classroom (Tondeur et al., 2008). Moreover, a qualitative study in English Quebec Schools urges that school's leaders clearly work towards the vision and mission for technology integration and plan for ICT integration comprehensively. The school leaders must also drive the investment of ICT resources for teaching purpose (Rabah, 2015). This view on the use of ICT in primary education was reported by UNESCO (Bannayan, et al., 2012).

To ensure successful integration of ICT into teaching, school leaders should adopt certain leadership style. Therefore, leadership styles have been extensively studied. However, less attention has been paid to study this matter in developing countries. Previous studies conducted in developed countries suggest that school leaders employ a distributed leadership approach to facilitate the success of any activity particularly the one pertaining to the integration of ICT into teaching (Divaharan & Lim, 2010). Distributed leadership refers to the aspect that will assist headmasters to handle the demands by sharing responsibilities with middle managers such as instructional programmes and ICT coordinator while embarking on ICT integration (Senge et al., 2000). Instead of distributed leadership, a good leader must use as charismatic style in leading his or her professional team (Tubin, 2007). Tubin also found that charismatic style brings led to positive communication regarding ICT between superior and subordinate while at the same time supporting staff as they grapple with the emerging technologies. Although the issue is mainly Western-dominated, it becomes important to developing countries such as Malaysia due to every school leader understanding their roles in ensuring the success of integrating ICT into teaching.

### **3.1.8 School's ICT policy, planning and strategies**

In recent years, there has been an increasing amount of literature on school's ICT policy, plan, and strategies for the integration of ICT by teachers into teaching. The development of the policy and plan served to realise the goals of to be achieved by teachers (Sang et al., 2011). In fact, prominent scholars on ICT in education including Lim et al. (2013) have suggested that the biggest contributing factor to teachers' using technology in schools is a technology policy plan. The first definition of technology policy planning emerged during the 1990s when Anderson (1999) asserted that technology policy planning is a process of developing, revising, and implementing technology plans in order to guide organisations to address their goals. From the schools perspective, the notion of technology policy plan is a school's description of its expectations, goals, contents, and actions concerning the integration of ICT in education (Tondeur, Cooper, & Newhouse, 2010). The policy of school technology consists of the supply of technologies into teaching, and the accessibility of resources can be implemented in the school with ICT coordinator as leaders (Demiraslan & Usluel, 2008).

ICT planning should not exclude teachers from sustaining and spending their financial resources wisely. This view is supported by Goktas et al. (2013), who claimed that before a school transfer its financial resources, technological planning should be conducted in order for budget to be spent effectively; in other words, where and how to spend the money should be well planned. Goktas et al. further asserted that in realising such a vision, a detailed examination of the current situation is needed such as the identification of deficiencies in the implementation of ICT into school classes and the strategies for resolving problems associated with ineffective ICT planning. An effective ICT planning should take into account the role of teachers (Sang et al., 2011). Laferriere et al. (2013) found in their study that tension occurs at the school level regarding IT policies due to teachers not being involved in the planning of the school's ICT policy. Another reason is that schools' policymakers do not consult teachers, particularly in regard to the arrangement of computers in classroom or whether IT personnel should tie mobile technology to students' desks. Therefore, schools' policymakers need to realise that teachers should not be excluded from the planning of a school's ICT policy when considering future educational ICT use. In fact, teachers know every single problem related to teaching and they know the best solution for their students. School's

policymakers should consider all of the teacher's voices and the consequences of a school's policy to teachers and students because individual action is not considered as independent but shared within a school's context.

A school's policy reflects the culture of every school because the success of ICT integration depends on the action of every school's stakeholders towards achieving the school's vision as stated in school's policy (Tubin, 2007). A school culture can be defined as "the basic assumptions, norms and values, and cultural artefacts that are shared by school members" (Maslowski, 2001, pp. 8–9). This view is in line with UNESCO report of ICT in primary education. Another prominent scholar of ICT in education (Bannayan, 2012) contended that every school should have their own ICT policy in order to set a clear vision of ICT integration strategies for the school, and this vision must be shared by all members of the school community (Lim, 2007). A qualitative case study on secondary schools in Singapore concluded the schools have embedded a culture of needing to function as learning organisations that are adaptable to changes, particularly rapid changes brought about by technology integration in the curriculum (Divaharan & Lim, 2010). Divaharan and Lim further suggested that to be successful learning organisations, schools need to have a curriculum focused, over-arching ICT goal in order to provide a clear direction to the key players such as teachers, instructional programmes, and ICT coordinator. The regulations must be embedded in a school's culture, which may be imitated to others schools.

#### 4.0 CONCLUSION

The investment for teachers in ICT integration in teaching is crucial to ensure there are competent educators in the pipeline. This critical review uncovered eight themes that can give valuable information for educational technologist especially policymakers to reflect the strategies of successful ICT integration in schools, and as a guide for planning any technology investment initiative to teachers. The major contribution of this critical review is the themes derived which cover both the first-second-order concepts introduced by Ertmer et al. (2012) on the conditions that would influence the integration of ICT by teachers in teaching.

#### REFERENCES

- Al-zaidiyeen, N. J., & Mei, L. L. (2010). Teachers' attitudes and levels of technology use in classrooms: The case of Jordan schools. *International Education Studies*, 3(2), 211–219. <https://doi.org/10.5539/ies.v3n2p211>
- Ali, W. Z. W., Nor, H. M., Hamzah, A., & Alwi, H. (2009). The conditions and level of ICT integration in Malaysian mart schools. *International Journal of Education and Development Using Information and Communication Technology*, 5(2), 21–31.
- Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology*, 84(3), 261–271. <https://doi.org/10.1037/0022-0663.84.3.261>
- Anderson, L. S. (1999). Technology planning: It's more than computers. *Technology*, 1–6. Retrieved from <http://www.nctp.com/articles/tpmore.pdf>
- Bannayan, H. E., Kalaš, I., Conery, L., Laval, E., Laurillard, D., Lim, C. P., ... Turcsányi-Szabó, M. (2012). *ICT in primary education. United Nations Educational, Scientific and Cultural Organization [UNESCO]* (Vol. 1). United Nations Educational, Scientific and Cultural Organization [UNESCO]. Retrieved from [iite.unesco.org/pics/publications/en/files/3214707.pdf](http://iite.unesco.org/pics/publications/en/files/3214707.pdf)
- Buabeng-Andoh, C. (2015). ICT usage in Ghanaian secondary schools: Teachers' perspectives. *International Journal of Information and Learning Technology*, 32(5), 300–312. <https://doi.org/10.1108/IJILT-09-2015-0022>
- Calderhead, J. (1996). Teachers: Beliefs and knowledge. *Handbook of Educational Psychology*, 709–725.
- Compton, V., & Jones, A. (1998). Reflecting on teacher development in technology education: Implications for future programmes. *International Journal of Technology and Design Education*, 8(2), 151–166. <https://doi.org/10.1023/A:1008808327436>
- Corbin, J., & Strauss, A. C. (2008). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory* (3rd ed.). Beverly Hills, CA: Sage Publications, Inc.
- Demiraslan, Y., & Usluel, Y. K. (2008). ICT integration processes in Turkish schools: Using activity theory

- to study issues and contradictions. *Australasian Journal of Educational Technology*, 24(4), 458–474.
- Divaharan, S., & Lim, C. P. (2010). Secondary school socio-cultural context influencing ICT integration: A case study approach. *Australasian Journal of Educational Technology*, 26(6), 741–763.
- Drent, M., & Meelissen, M. (2008). Which factors obstruct or stimulate teacher educators to use ICT innovatively? *Computers and Education*, 51(1), 187–199. <https://doi.org/10.1016/j.compedu.2007.05.001>
- Ertmer, P. A. (1999). Addressing first-and second-order barriers to change: Strategies for technology integration. *Educational Technology Research and Development*, 47(4), 47–61.
- Ertmer, P. A., Ottenbreit-Leftwich, A. T., Sadik, O., Sendurur, E., & Sendurur, P. (2012). Teacher beliefs and technology integration practices: A critical relationship. *Computers and Education*, 59(2), 423–435. <https://doi.org/10.1016/j.compedu.2012.02.001>
- Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention and Behaviour: An Introduction to Theory and Research*. Addison-Wesley Publishing Company. <https://doi.org/10.2307/2065853>
- Ghavifekr, S., Kunjappan, T., Ramasamy, L., & Anthony, A. (2016). Teaching and learning with ICT tools: Issues and challenges from teachers' perceptions. *Malaysian Online Journal of Educational Technology*, 4(2), 38–57. Retrieved from <http://bit.ly/2fRI88H>
- Giavrimis, P., Giossi, S., & Papastamatis, A. (2011). Teachers' attitudes towards training in ICT: A critical approach. *Quality Assurance in Education*, 19(3), 283–296. <https://doi.org/10.1108/09684881111158072>
- Goktas, Y., Gedik, N., & Baydas, O. (2013). Enablers and barriers to the use of ICT in primary schools in Turkey: A comparative study of 2005-2011. *Computers and Education*, 68, 211–222. <https://doi.org/10.1016/j.compedu.2013.05.002>
- Hadjerrouit, S. (2008). Using a learner-centered approach to teach ICT in secondary schools: An exploratory study. *Issues in Informing Science and Information Technology*, 5, 233–259. Retrieved from <http://ezlibproxy.unisa.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ehh&AN=36074243&site=ehost-live>
- Hamzah, M. I., Embi, M. A., & Ismail, A. (2010). ICT and diversity in learners' attitude on smart school initiative. In *Procedia - Social and Behavioral Sciences* (Vol. 7, pp. 728–737). <https://doi.org/10.1016/j.sbspro.2010.10.099>
- Hennessy, S., Ruthven, K., & Brindley, S. (2005). Teacher perspectives on integrating ICT into subject teaching: Commitment, constraints, caution, and change. *Journal of Curriculum Studies*, 37(2), 155–192.
- Jones, A., & Moreland, J. (2004). 2004\_Jones-A.pdf, 121–140.
- Judge, M. (2013). Mapping out the ICT integration terrain in the school context: Identifying the challenges in an innovative project. *Irish Educational Studies*, 32(3), 309–333. <https://doi.org/10.1080/03323315.2013.826398>
- Laferrere, T., Hamel, C., & Searson, M. (2013). Barriers to successful implementation of technology integration in educational settings: A case study. *Journal of Computer Assisted Learning*, 29(5), 463–473. <https://doi.org/10.1111/jcal.12034>
- Lim, C. P. (2007). Effective integration of ICT in Singapore schools: Pedagogical and policy implications. *Educational Technology Research and Development*, 55(1), 83–116. <https://doi.org/10.1007/s11423-006-9025-2>
- Lim, C. P., & Chai, C. S. (2004). An activity-theoretical approach to research of ICT integration in Singapore schools: Orienting activities and learner autonomy. *Computers and Education*, 43(3), 215–236. <https://doi.org/10.1016/j.compedu.2003.10.005>
- Lim, C. P., Zhao, Y., Tondeur, J., Chai, C. S., & Tsai, C.-C. (2013). Bridging the gap: Technology trends and use of technology in schools. *Educational Technology & Society*, 16(2), 59–68.
- Martin, W. B. (2000). *Learning from the Colwell School: An Ethnographic Case Study of an Educational Technology Culture*. Cornell University. Retrieved from <https://www.learntechlib.org/p/121489>
- Maslowski, R. (2001). *School Culture and School Performance*. Twente University Press. Retrieved from <http://doc.utwente.nl/36122/1/t0000012.pdf%5Cnhttp://eric.ed.gov/?id=EJ276371>
- Mayring, P. (2014). *Qualitative Content Analysis: Theoretical Foundation, Basic Procedures and Software Solution*. Klagenfurt, Austria. [https://doi.org/10.1016/S1479-3709\(07\)11003-7](https://doi.org/10.1016/S1479-3709(07)11003-7)
- Mirzajani, H., Mahmud, R., Fauzi Mohd Ayub, A., & Wong, S. L. (2016). Teachers' acceptance of ICT



- and its integration in the classroom. *Quality Assurance in Education*, 24(1), 26–40. <https://doi.org/http://dx.doi.org/10.1108/QAE-06-2014-0025>
- Mukti, N. A. (2000). Computer technology in Malaysia: Teachers' background characteristics, attitudes and concerns. *The Electronic Journal of Information Systems in ...*, 3, 1–13. <https://doi.org/>.
- Nikian, S., Nor, F. M., & Aziz, M. A. (2013). Malaysian teachers' perception of applying technology in the classroom. *Procedia - Social and Behavioral Sciences*, 103, 621–627. <https://doi.org/10.1016/j.sbspro.2013.10.380>
- Prestridge, S. (2012). The beliefs behind the teacher that influences their ICT practices. *Computers and Education*, 58(1), 449–458. <https://doi.org/10.1016/j.compedu.2011.08.028>
- Rabah, J. (2015). Benefits and challenges of information and communication technologies ( ICT ) integration in Québec english schools. *The Turkish Online Journal of Educational Technology*, 14(2), 24–31.
- Razak, N. A., Jalil, H. A., Krauss, S. E., & Ahmad, N. A. (2018). Successful implementation of information and communication technology integration in Malaysian public schools: An activity systems analysis approach. *Studies in Educational Evaluation*, 58, 17–29. <https://doi.org/10.1016/j.stueduc.2018.05.003>
- Sang, G., Valcke, M., van Braak, J., Tondeur, J., & Zhu, C. (2011). Predicting ICT integration into classroom teaching in Chinese primary schools: Exploring the complex interplay of teacher-related variables. *Journal of Computer Assisted Learning*, 27(2), 160–172. <https://doi.org/10.1111/j.1365-2729.2010.00383.x>
- Schunk, D. H. (1990). Goal setting and self-efficacy during self-regulated learning. *Educational Psychologist*, 25, 71–86. <https://doi.org/10.1017/CBO9781107415324.004>
- Senge, P. M., Cambron-McCabe, N. H., Lucas, T., Smith, B., Dutton, J., & Kleiner, A. (2000). *Schools that Learn. A Fifth Discipline Resource*.
- Snape, P., & Fox-Turnbull, W. (2013). Perspectives of authenticity: Implementation in technology education. *International Journal of Technology and Design Education*, 23(1), 51–68. <https://doi.org/10.1007/s10798-011-9168-2>
- Teo, T. (2011). Factors influencing teachers' intention to use technology: Model development and test. *Computers and Education*, 57(4), 2432–2440. <https://doi.org/10.1016/j.compedu.2011.06.008>
- Tondeur, J., Cooper, M., & Newhouse, C. P. (2010). From ICT coordination to ICT integration: A longitudinal case study. *Journal of Computer Assisted Learning*, 26(4), 296–306.
- Tondeur, Jo, van Keer, H., van Braak, J., & Valcke, M. (2008). ICT integration in the classroom: Challenging the potential of a school policy. *Computers and Education*, 51(1), 212–223. <https://doi.org/10.1016/j.compedu.2007.05.003>
- Tsitouridou, M., & Vryzas, K. (2004). The prospect of integrating ICT into the education of young children: The views of Greek early childhood teachers. *European Journal of Teacher Education*, 27(1), 29–45. <https://doi.org/10.1080/0261976042000211838>
- Tubin, D. (2007). When ICT meets schools: Differentiation, complexity and adaptability. *Journal of Educational Administration*, 45(1), 8–32. <https://doi.org/10.1108/09578230710722430>
- Umar, I. N., & Hassan, A. S. A. (2015). Malaysian teachers' levels of ICT integration and its perceived impact on teaching and learning. *Procedia - Social and Behavioral Sciences*, 197, 2015–2021. <https://doi.org/10.1016/j.sbspro.2015.07.586>
- Wikan, G., & Molster, T. (2011). Norwegian secondary school teachers and ICT. *European Journal of Teacher Education*, 34(2), 209–218. <https://doi.org/10.1080/02619768.2010.543671>
- Zah, W., Ali, W., & Nor, H. M. (2010). The implementation of ICT integration in Malaysian smart schools. *Education*.
- Zyad, H. (2016). Integrating computers in the classroom: Barriers and teachers' attitudes. *International Journal of Instruction*, 9(1), 65–78. <https://doi.org/10.12973/iji.2016.916a>

# **TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (TVET)**

## Meneroka Impak Dan Cabaran Pensyarah Terhadap Pelaksanaan E-Pembelajaran Di Kolej Vokasional Zon Tengah, Malaysia

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### ABSTRAK

*Penubuhan Kolej Vokasional bermatlamat sebagai satu agen perubahan Transformasi Pendidikan Vokasional dibawah Kementerian Pendidikan Malaysia mencetus perubahan corak pembelajaran dan pemudahcaraan (PdPC) pensyarah selaras dengan kemajuan era digital dan Revolusi Industri 4.0 di Malaysia. Pembelajaran digital melalui e-Pembelajaran telah lama diaplikasikan di institusi pengajian tinggi namun masih kurang diberi pendedahan peringkat Kolej Vokasional. Kajian telah dijalankan dalam membangunkan model pengajaran berasaskan e-Pembelajaran dan pembelajaran teradun, sebaliknya pelaksanaannya dilihat tidak menyeluruh dan kurang mendapat sambutan. Justeru, satu kajian telah dijalankan menggunakan kaedah kajian kes kualitatif ini dilaksanakan untuk meneroka persepsi pensyarah Kolej Vokasional terhadap impak dan cabaran penggunaan e-Pembelajaran dalam pembelajaran dan pemudahcaraan berteraskan hasil di Kolej Vokasional. Proses pengumpulan data di lapangan kajian menggunakan teknik temubual mendalam dan analisa dokumen terhadap pensyarah Kolej Vokasional Zon Tengah yang melibatkan negeri Selangor dan Wilayah Persekutuan Kuala Lumpur. Analisis tematik dengan menggunakan perisian Atlas.Ti versi 8 digunakan untuk mendapatkan jawapan bagi persoalan kajian yang dijalankan. Dapatan kajian mendapati impak pensyarah Kolej Vokasional terhadap penggunaan e-Pembelajaran dalam PdPc seharian dapat membantu dari menjadi sumber utama memperolehi maklumat, dapat menggalakkan pembelajaran interaktif dan juga memudahkan proses penilaian dan pentaksiran. Manakala cabaran yang dihadapi adalah dari aspek kemudahan prasarana dan juga pendedahan pensyarah.*

**KEYWORDS:** e-Pembelajaran, Kolej vokasional, Pembelajaran dan pemudahcaraan (PdPc)

### 1.0 PENGENALAN

Pelajar pada hari ini hidup pada zaman yang penuh dengan informasi maklumat. Pengetahuan dan sumber maklumat boleh didapati bukan sahaja dari sumber persekitaran tempatan sahaja. Sebelum adanya zaman informasi teknologi ini, kebanyakan ilmu pengetahuan disematkan dalam bentuk penulisan dan ditempatkan di dalam buku-buku perpustakaan, dada-dada akhbar dan juga majalah yang boleh diperolehi. Namun perubahan teknologi pada masa kini telah merobohkan tembok pemisah masyarakat hari ini untuk mendapatkan maklumat dari dunia yang tiada sempadan di hujung jari mereka sahaja. Teknologi maklumat ini membolehkan maklumat mudah didapati dengan cepat, pantas, sepanjang masa dan dimana sahaja (Noraini & Shuki, 2009). Dalam bidang pendidikan, perubahan teknologi digital ini telah menaikkan kemudahan yang ada di institusi pendidikan dibawah Kementerian Pendidikan Malaysia. Perubahan yang berlaku secara tidak langsung memerlukan para pendidik untuk mempersiapkan diri dalam menguasai ilmu penggunaan teknologi ini, untuk membantu memudahkan proses pembelajaran dan pemudahcaraan (PdPC) yang dijalankan. Menurut kajian yang dijalankan oleh Abd Hakim, Mokhairi, dan Syadiah Nor (2018) sisi pembelajaran dan pemudahcaraan di era pembangunan teknologi ini lebih diminati kerana bahan penyampaian lebih interaktif, realiti, inovatif, eksplorasi dan boleh diakses dimana sahaja. Dengan penggunaan teknologi ini, penerimaan pelajar terhadap ilmu yang disampaikan akan lebih cepat, menjimatkan masa dan lebih efektif (Nor Aziah & Mohd Taufik, 2016; Noraini & Shuki, 2009). Perubahan teknologi dalam pengajaran secara umumnya telah mengubah kaedah pedagogi guru, bukan sahaja dapat memudahkan dan mempercepatkan proses pengajaran, malah ia juga menggalakkan pelajar untuk membiasakan pembelajaran sendiri

Kini, seiring dengan perkembangan Revolusi Industri 4.0 (IR4.0) dan juga *Internet of Things* (IoT), telah banyak mempengaruhi perubahan kaedah pengajaran dan pembelajaran pendidik (Rosnani, 2018). Konsep e-Pembelajaran telah diperkenalkan yang mana memberi suatu pendekatan baru dalam

pengendalian proses PdPc di institusi pendidikan di Malaysia. Menurut Nor Aziah dan Mohd Taufik (2016), e-Pembelajaran merupakan sistem penyampaian ilmu secara elektronik yang biasanya lebih dikenali sebagai sistem pengurusan pembelajaran, sistem pembelajaran virtual, dan sistem pengurusan kandungan yang disokong dengan isi pembelajaran dan kemudahan infrastruktur. E-Pembelajaran secara amnya merujuk kepada penggunaan rangkaian elektronik seperti internet, intranet, *Local Area Network* (LAN), *Wide Area Network* (WAN) dan lain-lain jaringan yang menghubungkan satu sama lain, untuk menyampaikan maklumat, interaksi dan pemudahcara (Noraini & Shuki, 2009). E-Pembelajaran juga boleh diakses pada bila-bila masa dan dimana sahaja. Bahan yang didapati dalam e-Pembelajaran berbentuk teks, grafik, video dan audio secara tidak langsung menarik minat pelajar untuk meneroka lebih mendalam lagi. Selain itu juga, perkhidmatan *chatting* dalam talian membantu pelajar berkomunikasi dan berbincang dan berkongsi pengetahuan terus dengan bantuan rakan mahupun pakar dalam bidang berkenaan (Noraini & Shuki, 2009). Ini secara tidak langsung mewujudkan pembelajaran secara kolaboratif dimana pelajar bekerjasama dalam menyelesaikan sesuatu masalah sama ada didalam mahupun diluar sesi pembelajaran (Muhamad Azhar Stapa, Mohamad Ibrahim, & Amri Yusoff, 2017).

Pendekatan menggunakan e-Pembelajaran dalam PdPc secara zahirnya adalah berlainan berbanding dengan pembelajaran konvensional yang hanya berpusatkan guru dimana pendidik dianggap sebagai satu-satunya sumber ilmu yang serba boleh yang ditugaskan untuk menyampaikan pengetahuan kepada pelajar. Kaedah pembelajaran secara konvensional ini didapati semakin kurang keberkesanannya secara relatif kerana ia akan menyekat pembebasan cara pembelajaran yang lebih efektif (Abd Hakim et al., 2018). Berbeza dengan pendekatan e-Pembelajaran yang lebih berfokuskan kepada pelajar dimana pelajar perlu memainkan peranan lebih aktif, berdikari dan bertanggungjawab terhadap pembelajarannya dengan inisiatif sendiri dan pendidik hanya berfungsi sebagai fasilitator (Noraini Idris & Shuki Osman, 2009). Pelajar akan lebih bebas belajar, bebas untuk mengulangkaji pembelajaran yang kurang difahami bergantung kepada keperluan masing-masing dengan cara memuat turun nota pembelajaran serta melayari pautan sesawang kepada sumber maklumat yang pelbagai (Nor Aziah & Mohd Taufik, 2016).

## 2.0 e-PEMBELAJARAN DI KOLEJ VOKASIONAL

Perubahan era digital pada masa ini telah mempengaruhi institusi-institusi pendidikan di Malaysia dengan mewujudkan pembelajaran secara alam maya atau e-Pembelajaran. Antara institusi yang terkesan adalah Kolej Vokasional. Penubuhan Kolej Vokasional dibawah program Transformasi Pendidikan Vokasional pada tahun 2013, menawarkan pendidikan kemahiran pelbagai bidang kepada pelajar-pelajar seawal umur 16 tahun. Pengajaran dan pembelajaran di Kolej Vokasional berteraskan kemahiran sebanyak 70% dan akademik 30%. Kolej Vokasional berhasrat melahirkan graduan yang berkemahiran tinggi seiring dengan perkembangan teknologi dan keperluan industri pada masa kini. Transformasi pendidikan ini dilakukan bagi menghasilkan impak positif kepada pembangunan pembelajaran pelajar (Hamzah & Yeop, 2016). Selaras dengan itu Kerajaan Malaysia juga mengambil inisiatif dengan melaksanakan dasar Pelan Pembangunan Pendidikan Malaysia (PPPM) 2013-2025 menerusi anjakan ke 6 – Transformasi Pendidikan (ICT dalam Pendidikan), telah memberi gambaran dimana KPM berusaha untuk meningkatkan keberhasilan dan minat pelajar melalui pendekatan pembelajaran baharu berteraskan ICT dan juga boleh memanfaatkannya secara berkesan (Kementerian Pendidikan Malaysia, 2013). Antara langkah yang diambil termasuk menyediakan murid dengan pengetahuan serta kemahiran untuk belajar dalam dunia digital, melengkapkan 10,000 sekolah seluruh Malaysia termasuk Kolej Vokasional dengan akses internet dan platform e-Pembelajaran 1 BestariNet, *Virtual Learning Environment* (VLE FROG), memberikan latihan pada guru untuk menerapkan ICT dalam pengajaran dan pemudahcaraan (PdPc), menambah peralatan ICT dengan nisbah 10 pelajar dan 1 komputer, dan merintis cara penyampaian pembelajaran menggunakan ICT seperti pembelajaran sendiri dan jarak jauh. (Kementerian Pendidikan Malaysia, 2013). Selain itu Kementerian Pendidikan Malaysia juga telah menyediakan hos perpustakaan video e-Pembelajaran melalui EduWebTV (Kementerian Pendidikan Malaysia, 2013).

Bahagian Pendidikan dan Latihan Teknikal Vokasional (BPLTV) dalam usaha untuk menyahut usaha kementerian dan memikul tugas dalam menyediakan tenaga mahir bagi menampung kepesatan pembangunan negara ini dengan merangka kurikulum bagi Kolej Vokasional yang dipanggil sebagai Kurikulum Standard Kolej Vokasional (KSKV). Pembangunan KSKV yang digunapakai di Kolej Vokasional direka bentuk berdasarkan penggunaan teknologi terkini secara optimum dalam pengajaran dan pembelajaran (Kementerian Pendidikan Malaysia, 2017a). Kurikulum yang dilaksanakan di Kolej

Vokasional berpandukan kepada 70% vokasional dan 30% akademik secara tidak langsung membina modal insan yang berkemahiran tinggi sebagai matlamat utamanya. Perkembangan Revolusi Industri 4.0 yang lebih menekankan aspek digital dalam industri masa kini menjadi penanda aras dalam pembangunan kurikulum Kolej Vokasional agar selari dengan perubahan teknologi yang semakin pesat membangun Penerapan kaedah pembelajaran baru berteraskan teknologi seperti pembelajaran teradun (*blended learning*) yang bermaksud penyatuan pengajaran bersemuka dengan pendekatan pengajaran berasaskan teknologi dan kelas berbalik (*flipped classroom*) yang bermaksud guru sebagai fasilitator dan pembimbing memberi tugasan melalui e-Pembelajaran kepada pelajar untuk mula diperkenalkan di Kolej Vokasional (Kementerian Pendidikan Malaysia, 2013). Disini pensyarah memainkan peranan utama dimana mereka tidak lagi berfungsi sebagai pendeta yang hanya menyampaikan ilmu, tetapi lebih berperanan sebagai fasilitator dan pemudah cara dalam proses pengajaran dan pembelajaran bagi meningkatkan potensi pelajar secara optimum (Kementerian Pendidikan Malaysia, 2017b).

## 2.1 Penyataan Masalah

Walaubagaimanapun, hasil daripada kajian yang dijalankan pada masa kini menunjukkan seolah-olah usaha kerajaan yang telah membelanjakan wang jutaan ringgit untuk pembangunan teknologi e-Pembelajaran ini tidak menunjukkan perkembangan yang positif dan kurang mendapat sambutan (Jabatan Audit Negara Malaysia, 2019; Noormawati Kamarudin, 2017; Razali, Bahador, & Saidon, 2017). Hasil daripada Laporan Ketua Audit Negara pada tahun 2018 siri 1, mendapati sebanyak 3,698 (36.3%) daripada 10,185 sekolah dan Kolej Vokasional tidak pernah mencapai KPI penggunaan *Frog VLE* pada tahun 2018. Hasil daripada pembayaran berjumlah RM1.69 juta bagi perkhidmatan *Frog VLE* telah dibuat untuk 35 daripada 10,185 sekolah sedangkan 35 sekolah tersebut tidak pernah menggunakan *Frog VLE* bagi tempoh bulan Julai 2016 hingga November 2018. Jumlah peratus guru yang telah membangunkan laman pembelajaran dan diterbitkan dalam *Frog Store* bagi tahun 2018 adalah rendah, iaitu hanya 3,317 (0.8%) daripada 423,566 guru. Sasaran pengaktifan ID VLE oleh ibu bapa di bawah program Pengurusan Perubahan terhadap 8,094 (95%) daripada 8,551 sekolah yang dilawati tidak tercapai. Cadangan Makmal Pengurusan Nilai berkaitan pelaksanaan VLE secara rintis di 400 sekolah tidak dipertimbangkan oleh KPM dan kekurangan bahan pembelajaran dalam *Frog VLE* bagi skema mata pelajaran Kolej Vokasional. Hal ini bertepatan dengan kajian yang dijalankan oleh Hamzah dan Yeop (2016) dan Sern et al. (2017) yang mendapati kelebihan pendekatan pembelajaran ini telah gagal untuk menarik perhatian pendidik menggunakan medium e-Pembelajaran sebagai platform utama pembelajaran pelajar di institusi pendidikan. Di dalam sistem pendidikan vokasional pula, strategi e-Pembelajaran masih belum diterokai secara menyeluruh dalam meningkatkan proses pembelajaran dan pemudahcaraan (PdPc) (Muhamad Azhar Stapa et al., 2017).

## 3.0 OBJEKTIF KAJIAN

Berdasarkan permasalahan yang dihadapi, objektif kajian ini dijalankan bagi meneroka impak dan cabaran pensyarah terhadap pelaksanaan e-Pembelajaran di Kolej Vokasional. Persoalan yang timbul bagi kajian ini adalah seperti berikut:

1. Apakah impak penggunaan e-Pembelajaran di Kolej Vokasional?
2. Apakah cabaran yang dihadapi dalam merealisasikan penggunaan e-Pembelajaran di Kolej Vokasional?

Bagi mendapatkan jawapan bagi persoalan kajian ini, satu kajian telah dijalankan oleh penyelidik bagi menghurai impak dan cabaran pensyarah terhadap pelaksanaan e-Pembelajaran di Kolej Vokasional.

## 4.0 METODOLOGI

Untuk kajian ini, penyelidik menggunakan pendekatan kualitatif bagi meneroka persoalan yang dihadapi. Pendekatan kualitatif dipilih kerana ianya satu pendekatan bagi mendalami sesuatu makna, pemahaman dan juga pengalaman yang dilalui oleh seseorang individu (Merriam & Tisdell, 2016). Penyelidik juga menggunakan rekabentuk kajian kes bagi mendapatkan informasi mengenai impak dan cabaran pensyarah terhadap penggunaan e-Pembelajaran di Kolej Vokasional Zon Tengah yang melibatkan negeri Selangor dan Wilayah Persekutuan Kuala Lumpur. Rekabentuk kajian kes dipilih berdasarkan faktor penyelidik untuk mencari makna dan kefahaman, penyelidikan yang induktif serta hasil yang kaya dengan

diskriptif (Merriam & Tisdell, 2016). Justifikasi penyelidik memilih Kolej Vokasional Zon Tengah sebagai lokasi kajian berdasarkan Laporan Ketua Audit Negara 2018 yang mendapati peratusan pencapaian KPI yang tinggi bagi penggunaan medium e-Pembelajaran di Malaysia (Jabatan Audit Negara Malaysia, 2019).

Menurut Merriam dan Tisdell (2016), penyelidikan kualitatif merupakan satu proses menerokai sesuatu fenomena secara mendalam melalui tiga kaedah pengumpulan data yang utama iaitu, pemerhatian, temu bual dan analisis dokumen. Bagi kajian ini, pengumpulan data menggunakan kaedah temubual mendalam dan juga analisis dokumen dilaksanakan keatas pensyarah Kolej Vokasional Zon Tengah. Untuk temubual mendalam, penyelidik memilih temubual separa berstruktur kerana ianya lebih fleksibel untuk mendalami sesuatu fenomena dan lebih terkawal (Creswell & Poth, 2018). Bagi memperoleh nilai kepercayaan daripada hasil temubual, pendeknaan analisis dokumen terhadap fail rancangan mengajar dan paparan laman e-Pembelajaran yang dilakukan oleh pensyarah tersebut dengan kebenaran. Perkara ini merupakan salah satu proses yang dipanggil sebagai triangulasi dimana ianya proses sokongan bahan bukti jenis-jenis data atau cara pengumpulan data dalam diskripsi dan tema kajian kualitatif (Creswell & Poth, 2018).

Penyelidik menggunakan kaedah persempelan bertujuan dalam memilih sampel untuk kajian ini. Kaedah persempelan bertujuan adalah asas kepada penyelidik yang ingin mengetahui, memahami, dan memperoleh pemahaman dari sesuatu fenomena (Merriam & Tisdell, 2016). Penyelidik menetapkan kriteria sebelum memilih pensyarah bagi mendapatkan data maklumat. Kriteria yang ditetapkan adalah pensyarah yang dipilih adalah dari Kolej Vokasional sekitar negeri Selangor dan Wilayah Persekutuan Kuala Lumpur, mempunyai pengalaman mengajar lebih 2 tahun dan juga mengajar dalam bidang vokasional ataupun akademik. Pensyarah yang tidak memenuhi kriteria yang telah ditetapkan tidak akan dipilih sebagai informan bagi kajian ini. Pensyarah Kolej Vokasional yang berperanan sebagai informan dalam kajian kualitatif dipilih untuk menyertai kajian ini berdasarkan kesudian dan juga memenuhi kriteria yang telah ditetapkan oleh penyelidik. Sebanyak 10 buah Kolej Vokasional yang terletak dalam Zon Tengah. Penyelidik memilih seorang pensyarah mewakili Kolej Vokasional masing-masing bagi menjadi informan dalam kajian ini. Setiap hasil daripada temubual yang dijalankan, penyelidik akan membuat transkrip temubual dan disahkan semula oleh informan. Daripada temubual yang dilakukan, penyelidik berhenti mengumpulkan data pada informan ketiga kerana dapatan yang diperolehi berulang dan boleh dikatakan sudah mencapai titik tepu.

Data yang diperolehi daripada transkrip temubual akan disusun mengikut kaedah analisis tematik. Proses dari data transkrip temubual akan dikumpulkan untuk dijana kod-kod yang berkaitan. Seterusnya kod-kod tersebut akan disaring dan disatukan mengikut kategori yang sesuai. Akhir sekali setelah semua kod telah dikategorikan, penyelidik akan mengumpulkan setiap kategori kepada tema. Daripada hasil analisis yang dijalankan, penyelidik memadankan dengan nota daripada analisis dokumen sebagai triangulasi kepada dapatan kajian bagi mendapatkan kebolehpercayaan dapatan kajian.

## 5.0 HASIL KAJIAN DAN PERBINCANGAN

Daripada analisis yang dijalankan, terdapat tiga tema yang dikenalpasti untuk persoalan kajian pertama dan dua tema untuk persoalan kajian yang kedua. Perbincangan lanjut mengenai dapatan kajian ini dihuraikan. Berikut adalah hasil dapatan daripada penerokaan impak dan cabaran pensyarah terhadap e-Pembelajaran di Kolej Vokasional Zon Tengah.

### 5.1 Impak penggunaan e-Pembelajaran dalam PdPc.

Bagi menjawab persoalan kajian pertama, analisis kajian mendapati tiga tema yang terhasil iaitu sumber utama memperolehi maklumat, menggalakkan pembelajaran interaktif dan memudahkan pentaksiran.

#### 5.1.1 Sumber utama memperolehi maklumat

Pertamanya, kajian mendapati pensyarah memilih e-Pembelajaran sebagai sumber utama untuk mendapatkan maklumat. Daripada tema ini, terdapat dua kategori iaitu sumber yang luas dan informasi yang terkini.

**Sumber yang luas.** Proses PdPc memerlukan pensyarah membuat persediaan sebelum menyampaikan ilmu kepada pelajar. Persediaan yang rapi memerlukan perancangan dalam aspek bahan yang ingin dikongsi, aktiviti yang hendak dilakukan serta penggunaan masa yang optimum. Dapatan daripada informan TP1 menghuraikan pensyarah menggunakan platform e-Pembelajaran untuk

mendapatkan bahan dan rujukan bagi tujuan PdPc kepada pelajar seperti berikut, *“pelajar ataupun pensyarah aaa dapat ye mengakses buku secara dalam talian untuk membuat rujukan dan juga aaaaa apni aaa mendapatkan bahan lah yang berkaitan dengan PdPC.”* Perkara ini dinyatakan juga bagi informan TP3 dalam pernyataan berikut, *“penggunaan elearning ini yang kita pernah gunakan penggunaan laman sesawang aaa dalam pencarian ilmu aaa dalam pencarian buku dan bahan rujukan.”* Selain itu juga, penggunaan e-Pembelajaran dalam mencari bahan ilmu pengetahuan menjadi keutamaan kerana sumber yang luas dan mudah didapati. Perkara ini diketengahkan oleh informan TP2 yang menyatakan; *“saya memang suka elearning ni dalam pdpc .... bila kita guna elarning ni sumbernya luas.”*

**Informasi yang terkini.** Penggunaan teknologi e-Pembelajaran dalam pengajaran juga mampu membantu para pensyarah mendapatkan sumber pengetahuan yang terkini terutamanya dalam bidang kemahiran seperti yang dijalankan di Kolej Vokasional. Bidang vokasional memerlukan pensyarah sentiasa peka dengan perubahan penggunaan teknologi dalam bidang teknikal. Perkara ini amat penting kerana ilmu yang disampaikan kepada pelajar haruslah terkini mengikut kehendak industri pada masa kini yang memerlukan pekerja dengan kemahiran penggunaan teknologi maklumat dan komunikasi (Bappa-aliyu, 2012). Hal ini diutarakan oleh informan TP2 yang menyatakan; *“pelajar ni dia tak boleh tengok industri malaysia sahaja sebab pelajar kena tahu juga apa yang happen dekat luar negara”*. Perkara ini juga dinyatakan oleh informan TP1 yang menyatakan *“elearning ini juga aaaa kita dapat aaa apa ni mengakses bahan-bahan yang terkini lebih mudah lah ye dengan penggunaan bahan-bahan secara digital melalui internet”*. Selain itu, informan TP2 menegaskan pensyarah perlu sentiasa peka terhadap kepantasan perubahan teknologi terkini selaras dengan perubahan industri seperti yang dinyatakan, *“sebab pelajar ni dia kena follow industrial punya apa... speed”*. Penekanan kepada pentingnya sumber terkini daripada penggunaan e-Pembelajaran dalam mengejar informasi terkini amatlah perlu khasnya kepada warga pensyarah Kolej Vokasional seolah-olah jika tidak digunakan, pengetahuan terhadap sesuatu ilmu itu terhad kepada pengetahuan disekeliling kita sahaja. Penyataan ini diketengahkan oleh informan TP2 yang mengulas bahawa *“benda tu kalau kita tak guna apa yang ada di ni maka kita punya knowledge tu apa yang kita tahu tu ada dekat kita je kita tak tahu apa ada pada dunia luar.”*

### 5.1.2 Menggalakkan Pembelajaran Interaktif

**Kepelbagaian bahan bantu mengajar.** Hasil daripada analisis temubual, pensyarah Kolej Vokasional mempercayai pembelajaran dan pemudahcaraan menggunakan e-Pembelajaran dapat membantu memudah proses pengajaran dan pembelajaran mereka. Kepercayaan pensyarah yang tinggi terhadap penggunaan sistem e-Pembelajaran akan membantu untuk memperoleh kemudahan dan kesenangan dalam menyelesaikan tugasannya (Venkatesh, Morris, Davis, & Davis, 2003). Informan TP1 menyatakan *“elearning ini serba sedikit membantu pelajar dan juga pensyarah ye untuk memudahkan dari segi aa penyampaian ilmu atau pun penyaluran ilmu dan juga dalam mendapatkan ilmu aaa dalam bentuk aaa alternatif lah ye, selain dari kemahiran ataupun pengetahuan guru aa yang diajar dalam teori”*. Hal ini diulas juga oleh informan TP2 yang menyatakan, *“elearning ni maknanya kita menggunakan semua medium elektronik yang ada untuk kita buat teaching lah aaa tak rigid pakai chalk and talk macam biasa mostly elektronik lah”*. Selain itu, PdPc dalam bidang kemahiran memerlukan pensyarah mempamerkan secara visual peralatan ataupun mesin kepada pelajar. Medium e-Pembelajaran yang berfungsi sebagai bahan bantu mengajar banyak membantu pensyarah dalam PdPc seharian. Perkara ini diterangkan oleh informan TP2 yang menyatakan, *“ada kadang-kadang tu benda tu bila kita nak explain benda wujud yang kita susah nak bawa depan pelajar jadi bila kita ada kemudahan youtube bila kita guna tu pelajar lagi jelaslah”*. Perkara ini secara tidak langsung memudahkan pelajar melihat dengan mata sendiri benda sebenar yang ingin disampaikan oleh pensyarah dalam bentuk yang interaktif. Perkara ini diketengahkan juga oleh informan TP3 yang menyatakan *“cikgu boleh tunjuk mekanisme menggunakan youtube menggunakan virtual reality A.R saya rasa pelajar akan nampak lagi clear lah sebab sekarang dah banyak aaa apps yang ada di pasaran, free pun ada yang cikgu-cikgu semua boleh pakai untuk tambah kepada pdpc yang biasa tu”*.

Dalam konteks yang lain, dengan adanya platform e-Pembelajaran ini, pensyarah mempunyai satu stor data simpanan dalam bentuk alam maya yang bercirikan fleksibiliti dan mobiliti (Hamzah & Yeop, 2016). Pensyarah tidak perlu lagi menyimpan bahan pengajaran dalam bentuk fizikal seperti fail dan buku tulis dimana kebarangkalian untuk bahan tersebut rosak dan hilang adalah tinggi. Dengan adanya sistem e-Pembelajaran ini, pensyarah boleh menyimpan bahan-bahan alat bantu mengajar mereka secara alam maya dan mereka tidak perlu lagi risau untuk membawa bahan ini kemana-mana sahaja. Hal ini diterangkan

informan TP1 yang menyatakan, “*Dalam pengajaran sekarang pernah .. tapi terhad kepada upload nota latihan dan juga aaaaa lebih kepada penggunaan cloud lah.. sebenarnya ataupun google drive*”. Dapatan ini disokong oleh kajian yang dijalankan oleh Hamzah dan Yeop (2016) yang mendapati bahan pengajaran dan pembelajaran boleh disimpan, disunting dan disemak dengan mudah bagi kegunaan pengajaran masa hadapan

**Pembelajaran sendiri pelajar.** Kategori seterusnya dibawah tema menggalakkan pembelajaran interaktif adalah pembelajaran sendiri pelajar. Pensyarah Kolej Vokasional percaya dengan menggunakan teknologi e-Pembelajaran ini akan menarik minat pelajar terhadap sesi pembelajaran yang dijalankan. Ini kerana pelajar masa kini dibesarkan dalam dunia yang dikelilingi peralatan yang canggih. Huraian ini diperolehi daripada informan TP3 yang menyatakan “*pelajar dapat satu pendedahan cara baru aaaa meningkatkan minat aaaa pelajar yang kini cenderung terhadap penggunaan komputer, laptop dan juga smartphone dan dia memberi satu visi baru lah terhadap kaedah-kaedah pembelajaran*”. Nukilan yang sama diperolehi daripada informan TP2 yang menyatakan, “*guna internet saya rasa tak ada masalah sebab budak ni suka explore*”. Perkara ini menjadikan sistem atau corak pembelajaran yang berkonsepkan teknologi mudah diterima pelajar pada masa kini secara tidak langsung menarik minat untuk belajar (Nor Aziah & Mohd Taufik, 2016).

Pembelajaran menggunakan e-Pembelajaran juga membolehkan pelajar meneroka sediri ilmu pengetahuan tanpa sempadan dan pensyarah hanya bertindak sebagai mentor ataupun fasilitator sahaja. Perkara ini dinyatakan oleh informan TP2 yang menyatakan, “*kita mintak pelajar tu sendiri explore jadi benda tu kalau kita tak guna apa yang ada ni maka kita punya knowledge tu... apa ....yang kita tahu tu ada dekat kita je, kita tak tahu apa ada pada dunia luar*”. Informan TP3 juga ada menyebut, “*sama ada kita explore bagi pelajar ataupun kita mintak pelajar tu sendiri explore*”. Maklumat yang diperolehi menggambarkan pensyarah Kolej Vokasional memberi harapan tinggi kepada pelajar dalam meneroka sesuatu perkara yang diminati pelajar itu sendiri seperti yang dinyatakan oleh informan TP2, “*bila ada elearning ni secara tak langsung target kita untuk ada pembelajaran sendiri pada budak tu secara tak langsungnya confirm akan jadi aaa kalau kita nak harap budak kita buka buku bukan pelajar kv tapi bila kita bagi dia peluang untuk explore guna elearning*”. Disini kita dapat lihat pelajar bebas untuk menuntut ilmu bergantung kepada kemampuan diri sendiri. Tiada had sempadan untuk mereka melakukan ulangkaji sesuatu kursus mengikut keperluan dan pemahaman masing-masing dan jika mereka memerlukan bantuan, pelajar dapat memuat turun nota pembelajaran dengan mudah dan boleh berbincang secara alam maya dengan guru mahupun pelajar lain menggunakan aplikasi perbualan dalam talian (Nor Aziah & Mohd Taufik, 2016)

**Komunikasi tanpa sempadan.** PdPc menggunakan e-Pembelajaran memberi peluang kepada pelajar dan pensyarah menyampaikan maklumat secara dalam talian tanpa had sempadan. Istilah yang disampaikan disini adalah pensyarah mahupun pelajar dapat berkongsi informasi, mengemukakan masalah yang dihadapi dan juga mengadakan perbincangan sesama mereka diatas talian tanpa mengira jarak dan kedudukan masing-masing menggunakan platform e-Pembelajaran. Maklumat dari informant TP3 menyatakan, “*guru dan juga pelajar itu sendiri boleh berkomunikasi ataupun boleh menyampaikan ataupun guru menyampaikan maklumat dan pelajar*”. Sementara itu informan TP1 menyatakan, “*pensyarah dan juga aaa guru menggunakan medium vle frog itu untuk apa untuk berinteraksilah ya dalam PdPc*”. Dapatan ini menjelaskan interaksi yang berlaku secara alam maya dalam memberi maklumat mahupun mencari maklumat memberi kemudahan kepada pelajar dan juga pensyarah dalam aktiviti pengajaran dan pembelajaran mereka.

### 5.1.3 Memudahkan Penilaian dan Pentaksiran

**Penilaian dalam talian.** Aspek penilaian dan pentaksiran merupakan salah satu elemen dalam proses melaksanakan kurikulum di Kolej Vokasional (Bahagian Pendidikan Teknik dan Vokasional (BPTV), 2016). Didalam kategori ini, kajian mendapati dengan menggunakan platform e-Pembelajaran, pensyarah dapat menjimatkan masa dalam melaksanakan pentaksiran kepada pelajar. Seperti yang dinyatakan oleh informan TP1 yang menyatakan, “*kita nak upload ujian disitu, kita boleh setkan masa berapa lama untuk setiap ujian tu dan aaaa boleh terus dapat jawapannya selepas tamat dan terus dapat jawapan*”. Sementara itu, informan TP2 menyatakan, “*kita boleh permudahkan cara kita menilai aaaa pentaksiran pelajar aaaa walaupun kita more to praktikal tapi ada benda yang sebenarnya kita boleh mudahkan, pentaksiran tu kita boleh mudahkan cikgu, memudahkan pelajar kita gunakan elearning punya, orang kata apa, idea*”.



**Mengukur hasil pembelajaran.** Selain daripada memudahkan proses penilaian dan pentaksiran, dengan menggunakan platform e-Pembelajaran ini, pensyarah boleh mengetahui tahap pencapaian pelajar dengan lebih mudah. Seperti yang dinyatakan oleh informan TP2, *“kita tahu aaaaa boleh kita kenalpasti pulak pelajar mana yang mencapai tahap dan tidak mencapai tahap”*. Tahap pelajar sememangnya menjadi perkara yang utama untuk dipantau oleh pensyarah di Kolej Vokasional. Ini kerana di Kolej Vokasional, mereka telah mengamalkan Pembelajaran Berasaskan Hasil atau biasanya dipanggil OBE. Pencapaian pelajar diukur sepanjang masa pembelajaran atau dipanggil sebagai Pentaksiran Berterusan, bagi memastikan hasil pembelajaran dapat dicapai oleh pelajar sama ada cepat mahupun lambat.

## 5.2 Cabaran mengaplikasi e-Pembelajaran dalam PdPc.

Bagi menjawab persoalan kajian kedua, analisis daripada kajian memperoleh dua tema hasil daripada temubual pensyarah Kolej Vokasional Zon Tengah. Cabaran utama pensyarah dalam mengaplikasikan e-Pembelajaran dalam PdPc diuraikan kepada aspek kemudahan prasarana dan pendedahan pensyarah yang menjadi halangan.

### 5.2.1 Kemudahan Prasarana

**Kelengkapan komputer.** Bagi memastikan penggunaan teknologi yang optimum, kemudahan prasarana yang lengkap perlu disediakan bagi memudahkan proses pengajaran dan pembelajaran secara digital. Daripada hasil kajian didapati faktor kapasiti peralatan komputer menjadi isu bagi pensyarah Kolej Vokasional. Komputer yang disediakan di makmal dan kemudahan komputer di perpustakaan juga terhad. Perkara ini dibangkitkan oleh informan TP1 yang menyatakan, *“jumlah komputer yang ada tidak mampu aaaa tidak sepadan dengan kapasiti pelajar”*. Sementara itu terdapat juga komputer yang didapati tidak berfungsi dengan baik seperti yang dinyatakan oleh informan TP2, *“banyak ada komputer mungkin yang sudah rosak”*. Pensyarah Kolej Vokasional percaya dengan adanya kemudahan prasarana yang lengkap mampu menggalakkan penggunaan e-Pembelajaran secara menyeluruh seperti yang dinyatakan oleh informan TP3, *“kelengkapan dari segi ict lah aaaa sama ada dari segi komputer ataupun aaaa notebook ok aaa ataupun gadget dimana pelajar perlu ada lah aaa untuk memastikan aaa elearning itu dapat dilaksanakan dengan berkesan”*. Keadaan prasarana teknologi yang baik dapat menyokong pembangunan sistem e-Pembelajaran (Venkatesh et al., 2003).

Terdapat juga cadangan daripada pensyarah antaranya adalah dengan memperbanyakkan lagi makmal komputer bagi menampung keseluruhan pelajar Kolej Vokasional seperti yang dinyatakan oleh informan TP1, *“memperbanyakkan ataupun aaa menyediakan kemudahan komputer lah aaa makmal komputer yang lebih banyak aaa supaya tidak berlaku perebutan penggunaan kelas aaa dan sebagainya”* selain itu, cadangan yang diperolehi dengan membenarkan pelajar membawa komputer riba sendiri bagi yang berkemampuan seperti yang dinyatakan oleh informan TP3, *“memberi kebenaran pada semua pelajar bukan sahaja pada pelajar yang terpilih membawa laptop sendiri bagi yang berkemampuan”*. Kawalan juga perlu diberikan kepada pelajar bagi mengelak sebarang penyalahgunaan siber dalam kalangan pelajar seperti yang dicadangkan oleh informan TP3, *“masalah dari segi kawalanlah, kita nak kawal pelajar itu dia kekal dalam elearning tu dan tidak ke sesawang yang lain”*.

**Capaian internet.** Dalam kategori ini, masalah yang dihadapi adalah capaian internet yang kurang menyeluruh dengan kelajuan jalur lebar yang tidak memuaskan menjadi punca pensyarah kurang menggunakan e-Pembelajaran sebagai medium utama pengajaran dan pembelajaran. Maklumat dari informan TP3 menyatakan *“capaian internet jugak kadang kadang ada yang terlalu perlahan”* dan pernyataan ini diulang kata oleh informan TP2 yang menjelaskan, *“elearning kalau nak betul-betul ia berkesan pertama dari segi kemudahan internet lah capaian internet itu perlu dalam konsisten dan laju aaa taliannya bagus”*. Faktor ini secara tidak langsung akan membantutkan usaha pensyarah untuk menggunakan e-Pembelajaran dalam PdPc seharian. Meraka mula beranggapan perkara ini membuang masa dan membantutkan minat untuk mengaplikasikan e-Pembelajaran sedangkan pensyarah mempunyai beban kerja lain yang lebih penting untuk disiapkan (Razali et al., 2017). Pihak Kolej Vokasional disarankan untuk menyediakan kemudahan yang lebih menyeluruh bukan sahaja untuk kegunaan pensyarah, malah untuk pelajar juga seperti yang dinyatakan oleh informan TP2, *“kolej boleh sediakan satu platform aaa apa.. wifi aaaa untuk pelajar lebih mudah akses lah.”*

**Portal khas kolej vokasional.** Seperti sedia maklum kementerian telah menyediakan medium pembelajaran maya Frog VLE bagi memenuhi penggunaan e-Pembelajaran di Malaysia, akan tetapi

keperluan khas portal untuk Kolej Vokasional menjadi keperluan pensyarah dalam memantapkan lagi proses PdPc seharian mereka. Isu ini diperoleh daripada informan TP2 yang menyatakan, *“kita punya portal khas pun tak ada macam kita nak berkongsi aaa maklumat-maklumat”*. Terdapat lebih 90 buah Kolej Vokasional seluruh Malaysia dan pensyarah memerlukan suatu medium khas untuk berkongsi maklumat sesama pensyarah di Kolej Vokasional yang berlainan. Informan juga menegaskan, *“kalau ada satu portal khas yang semua boleh kongsi maknanya cikgu umum maknanya benda tu satu malaysia boleh gunakan bahan yang sama.. aaa saya rasa benda tu lebih bagus lah”*. Penyeragaman informasi dan bahan pengajaran dan pembelajaran akan lebih berkesan dengan adanya portal khas ini. Secara tidak langsung, pensyarah dapat berkongsi kepakaran dan juga menjaga kualiti pengajaran bagi program masing-masing.

### 5.2.2 Pendedahan Pensyarah

**Latihan dan kemahiran pensyarah.** Cabaran yang dihadapi di Kolej Vokasional dalam mengaplikasikan e-Pembelajaran dalam PdPc dibawah tema pendedahan pensyarah adalah dari aspek latihan dan kemahiran pensyarah. Hasil kajian mendapati latihan yang diberikan di Kolej Vokasional tidak mencukupi seperti yang dinyatakan oleh informan TP2, *“Saya rasa latihan tak cukup sebab mana yang biasa yang mahir dengan penggunaan elearning ni biasanya background ict lah cikgu yang mengajar IT ataupun dia memang berkemahiran jadi cikgu yang tiada kemahiran tu dia tak ada knowledge”*. Hal ini dinyatakan juga oleh informan TP3, *“perlu diberi perhatian dari aspek kemahiran guru dalam mengaplikasikan elearning sebaik yang mungkin”*. Kemahiran penggunaan teknologi maklumat dan komunikasi ini amat penting kerana objektif sebenar e-Pembelajaran ini adalah untuk mewujudkan persekitaran pembelajaran yang baru dengan lebih fleksibel dari aspek masa, tempat, kaedah dan bahan pembelajaran (Razali et al., 2017). Seperti pernyataan informan TP2, *“cikgu yang tiada kemahiran tu dia tak ada knowledge, dia tak tahu apa kemudahan yang ada untuk dia apply elearning tu dalam PdPc sebenarnya, dia tak tahu ada apps yang dipasaran yang dia boleh guna tu untuk mengajar”*. Disini, pensyarah memainkan peranan penting untuk berusaha mendapatkan ilmu pengetahuan mengenai penggunaan e-Pembelajaran bagi membantu proses PdPc mereka. Pensyarah perlu juga mendisiplinkan diri dengan membuat pembelajaran sendiri secara individu mahupun berkumpulan melalui sumber latihan yang boleh didapati di laman sesawang pada masa kini (Hung, 2016).

**Sikap pensyarah.** Permasalahan daripada sikap pensyarah yang tidak mahu mengambil tahu tentang perubahan corak pembelajaran berasaskan digital seperti e-Pembelajaran ini menjadi kekangan yang besar. Hal ini diperolehi daripada informan TP2 yang menyatakan, *“ada yang x kesah dia nak explore ada yang rajin dia nak explore jadi yang tak kesah tu dia tak akan tahu lah”*. Perkara ini disebabkan faktor sikap malas dan tidak ingin mencuba sesuatu yang baru untuk memajukan diri sendiri dalam bidang ilmu yang diceburi (Razali et al., 2017). Dapatan ini juga sama dengan kajian yang dijalankan oleh Sern et al., (2017) menyatakan ramai pendidik tidak suka terhadap perubahan cara mengajar melibatkan teknologi komputer. Tanggapan ini haruslah diubah dengan merubah mentaliti agar tidak terikat dengan pengajaran takuk lama. Pensyarah perlu menerapkan nilai sendiri tentang pentingnya penggunaan sistem E-Pembelajaran ini dapat memberi kebaikan pada diri dan pelajar (Venkatesh et al., 2003). Pentadbir memainkan peranan penting dalam merubah sikap pensyarah seperti yang dicadangkan oleh informan TP2 yang menyatakan, *“mungkin kena cari jalan macam compulsory kan ke, mesti ada dalam seminggu tu ada buat elearning punya penggunaan ke untuk start la, lama-lama benda tu jadi biasa ok la, mula tu dia kena paksa la sikit kot”*. Daripada cadangan ini sedikit sebanyak mungkin akan dapat mengubah sikap pensyarah terhadap penggunaan e-Pembelajaran dalam PdPc mereka

## 6.0 KESIMPULAN

Secara kesimpulannya, didapati impak pensyarah Kolej Vokasional terhadap penggunaan e-Pembelajaran dalam PdPc seharian dapat membantu dari menjadi sumber utama memperolehi maklumat, dapat menggalakkan pembelajaran interaktif dan juga memudahkan proses penilaian dan pentaksiran. Mereka bersetuju penggunaan e-Pembelajaran ini secara tidak langsung dapat memberi perubahan dari aspek kaedah pengajaran dan pembelajaran serta menarik minat pelajar untuk meneroka bidang ilmu yang diceburi kerana pelajar masa kini lebih suka dengan kaedah pembelajaran yang lain dari kebiasaan. Kebebasan dalam mencari maklumat tanpa sepadan membolehkan pelajar mendapatkan informasi dengan lebih pantas dan terkini. Sesuai dengan matlamat Kolej Vokasional iaitu bagi melahirkan insan yang berkemahiran tinggi seiring dengan perkembangan teknologi pada masa kini. Hasilnya, Kolej Vokasional

dapat melahirkan generasi berilmu pengetahuan, kreatif dan inovatif yang berdaya saing bagi merealisasikan wawasan negara, seterusnya membentuk tamadun yang lebih maju (Jusoh & Idris, 2017). Dari aspek cabaran pula, aspek prasarana yang perlu ditambah baik bagi menyokong keperluan dan penggunaan pelajar harus dipandang berat oleh pihak pentadbir kerana ini merupakan kunci utama dalam pelaksanaan e-Pembelajaran di Kolej Vokasional. Pembangunan kemahiran dan latihan pensyarah perlu dipertingkatkan lagi bagi memantapkan pengetahuan dan kemahiran pensyarah Kolej Vokasional menggunakan medium E-Pembelajaran. Peranan pihak pengurusan Kolej Vokasional dan Bahagian Pendidikan dan Latihan Teknikal Vokasional dalam menyediakan sumber latihan kepada pensyarah bagi meningkatkan motivasi dan dorongan agar penggunaan e-Pembelajaran ini dapat digunakan secara menyeluruh. Diharapkan hasil dapatan kajian ini sedikit sebanyak dapat memberi input kepada pihak yang berkenaan dalam merealisasikan aspirasi kerajaan dalam memajukan lagi negara Malaysia yang tercinta ini.

## RUJUKAN

- Abd Hakim Abdul Majid, Mokhairi Makhtar, & Syadiah Nor Wan Shamsuddin. (2018). *Keperluan Pembelajaran Berasaskan Realiti Maya Dalam Konstruksi Pemasangan Komponen Komputer Mata Pelajaran Tmk Spm Pendidikan Di Malaysia: Satu Kajian Rintis*. *Asian People Journal (APJ)*, 1(1), 28–44. Retrieved from [www.uniszajournals.com/apj](http://www.uniszajournals.com/apj)
- Bahagian Pendidikan Teknik dan Vokasional (BPTV). *Garis Panduan Pelaksanaan Kurikulum Diploma Kolej Vokasional*. , (2016).
- Bappa-aliyu, A. P. M. (2012). *Integrating e-Learning in Technical and Vocational Education : A Technical Review*. *International Journal of Academic Research in Business and Social Sciences*, 2(5), 52–58. Retrieved from <http://www.hrmars.com/admin/pics/737.pdf>
- Creswell, J. W., & Poth, C. N. (2018). *Qualitative Inquiry & Research Design: Choosing Among Five Approaches*. In SAGE Publication Inc. (4th Edition). <https://doi.org/10.1017/CBO9781107415324.004>
- Hamzah, M., & Yeop, M. A. (2016). *Frog VLE (Persekitaran Pembelajaran Maya) Dalam Pengajaran Dan Pembelajaran: Penerimaan Dan Kaedah Pelaksanaannya*. *Journal of Research, Policy & Practice of Teachers & Teacher Education*, 6(2), 67–77. Retrieved from <http://ejournal.upsi.edu.my/article/2016AR001298>
- Hung, M. L. (2016). *Teacher readiness for online learning: Scale development and teacher perceptions*. *Computers and Education*, 94, 120–133. <https://doi.org/10.1016/j.compedu.2015.11.012>
- Jabatan Audit Negara Malaysia. (2019). *Laporan Ketua Audit Negara 2018 Siri 1* (1, ed.). Retrieved from <https://www.audit.gov.my/index.php/ms/laporan/aktiviti>
- Jusoh, R., & Idris, M. (2017). *Kajian Terhadap Pengajaran dan Pembelajaran Berasaskan Teknologi Kursus Pengurusan Perniagaan di Kolej Vokasional*. 1(1), 71–82.
- Kementerian Pendidikan Malaysia. (2013). *Pelan Pembangunan Pendidikan Malaysia (PPPM) 2013-2025*. In *Malaysia Education Blueprint, Malaysia*. <https://doi.org/10.1016/j.tate.2010.08.007>
- Kementerian Pendidikan Malaysia. (2017a). *Dasar Pendidikan Kebangsaan*. In *Bahagian Perancangan dan Penyelidikan Dasar Pendidikan* (1st ed., Vol. 4). Retrieved from [https://www.moe.gov.my/images/KPM/UKK/2019/03\\_Mac/BUKU\\_DPK\\_JILID\\_KEEMPAT.pdf](https://www.moe.gov.my/images/KPM/UKK/2019/03_Mac/BUKU_DPK_JILID_KEEMPAT.pdf)
- Kementerian Pendidikan Malaysia. (2017b). *Standard Kualiti Pendidikan Malaysia Gelombang 2*. Retrieved from <https://www.moe.gov.my/index.php/my/arkib/pemberitahuan/2018/4183-skpmg2-2018>
- Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research : a guide to design and implementation* / Sharan B. Merriam. In *The Jossey-Bass higher and adult education series*. <https://doi.org/10.1017/CBO9781107415324.004>
- Muhamad Azhar Stapa, Mohamad Ibrahim, & Amri Yusoff. (2017). *Kolaborasi dalam Pendidikan Vokasional: Mewujudkan Pembelajaran Teradun Melalui Teknologi Web 2.0* 35 *Kolaborasi dalam Pendidikan Vokasional: Mewujudkan Pembelajaran Teradun Melalui Teknologi Web 2.0* Collaboration in Vocational Education: Delivering Blende. *Journal of ICT in Education (JICTIE)*, 4, 35–51.
- Noormawati Kamarudin, R. L. & N. H. L. C. S. (2017). *Tahap Penggunaan Pembelajaran Maya Dalam*

- Kalangan Guru Reka Bentuk Teknologi: Satu Tinjauan Di Sekolah Rendah Luar Bandar. Online Journal for TVET Practitioners*, 1–8.
- Nor Aziah Abdul Aziz, & Mohd Taufik Hj Ahmed. (2016). *E-Pembelajaran Dalam Pengajaran Dan Pembelajaran Bahasa Melayu Di Ipg Kampus Ipoh. Jurnal Penyelidikan Dedikasi*, 11, 116–130. <https://doi.org/10.1145/3060403.3060449>
- Noraini Idris, & Shuki Osman. (2009). *Pengajaran Dan Pembelajaran ; Teori dan Praktis*. McGraw-Hill(Malaysia) Sdn.Bhd.
- Razali, N. Z., Bahador, Z., & Saidon, M. K. (2017). *Faktor-Faktor Yang Mempengaruhi Penggunaan Vle Frog Dalam Kalangan Guru Di Sekolah Menengah. Proceedings of the ICECRS*, 1(1), 1023–1032. <https://doi.org/10.21070/picecrs.v1i1.645>
- Rosnani Jusoh. (2018). *Peranan Pendidikan Teknik Dan Vokasional Terhadap Revolusi Industri 4.0: Adakah Telah Bersedia? Prosiding Seminar Kebangsaan Majlis Dekan Pendidikan Universiti Awam 2018*, (November 2018), 1211–1218. Retrieved from <http://www.unisza.edu.my/medc2018>
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). *User Acceptance Of Information Technology: Toward A Unified View. MIS Quarterly*, 27(3), 425–478. <https://doi.org/10.1006/mvire.1994.1019>

## Students' Interests in Technical and Vocational Education and Training (TVET) Program: A Systematic Review

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### ABSTRACT

*Technical and vocational education and training program is also known as TVET has been widely acknowledged as one of the most important subjects in the educational system. The purpose of this study is to examine the existing literature specifically from the lenses of students' perspectives on their interests and behavior towards TVET as their chosen subject matter for their educational journey. The authors reviewed 15 articles within the 2008-2018 publication years. The source of databases was derived from the ERIC database and peer-reviewed as well as indexed journal accessible online were employed to develop this article. This article focuses on the contents, arguments, terminologies, methodologies, and findings of the research derived from the selected articles. The findings of this article promulgate some important implications for practitioners and researchers who are researching within the same research area.*

**KEYWORDS:** Student interests and attitude, Technical and vocational education and training (TVET), 21<sup>st</sup> century learning skills, behaviour.

### 1.0 INTRODUCTION

The word "Technical and Vocational Education and Training" was officially used in 1999 at the World Congress of TVET which was held in Seoul, Korea. The congress acknowledged that the word "TVET" is generic enough to encompass various terms that have already been used to describe parallel elements of the field, educational and training activities. These include: "Vocational Education, technical education, occupational education, workplace education, career and technical education (CTE), apprenticeship training, workforce education, etc." (UNESCO, 2017).

The core role of Technical and Vocational Education and Training (TVET) is developing professional skills in youth; master them in basic knowledge and scientific principles so that they can prepare them for work (Billet, 2011). The term 'work' applies to both formal employment and self-employment. To promote self-employment, TVET's curricula often include entrepreneurship, agricultural science, home economics, hospitality and tourism-related courses for social reproduction and the transformation of vocational practices (Maclean & Wilson, 2009).

Technical and vocational education and training (TVET) is increasingly expected to focus on developing well-trained, motivated, higher-order skills, industry-responsive and globally competitive labor force which are needed in globalizing world (Marope, Chakroun & Holmes, 2015). These transcend the basic technical and vocational skills, also amplify economic growth and productivity that accelerate politics stability, social mobility, and economic liberation. In this way, it helps an individual to work independently and equipped them for lifelong learning, which raises their quality of life in the 21<sup>st</sup> century (Sarebah & Hazleeza, 2015).

The 21<sup>st</sup> century is a dynamic world with technological advancement and development. Thus, technological development is advancing rapidly and has made new demands for the 21<sup>st</sup>-century workforce whose products of technical education are prepared to serve effectively (Friedman, 2005). The workplace of the 21<sup>st</sup> century is distinctive and will serve only those people who have adequate skills. The distinctive features of the 21st century dynamism consist of: (i) scientific and computer world; (ii) jet age or high technology which requires efficient use of computers in every domain of life; (iii) an era that requires children to have basic scientific and technical skills to deal with their intricacy; (iv) a world in which the foundations of education will be more focused on competence, accuracy, effectiveness, and efficiency; and (v) an era of highly skilled workers and practitioners (Iroriteraye-Adjekpovu, 2013).

The developed economies have enjoyed a lot of freedom and flexibility in their educational systems because of the adoption of advanced technology. The physical development of a nation is greatly influenced by the skills embraced by its community drawn from the existing educational systems. Many countries have enhanced their development by fostering well organized and linked TVET systems (Edwin, & Stela, 2016) developed countries, TVET programmes have been in existence for decades and are now well recognized and very well substantiated. For instance, in Switzerland and Germany, the enrollment of TVET students are 80 percent and 20 percent or more as all 15 to 29 year-olds are enrolled in a work-study programme respectively (OECD, 2017). Furthermore, in the Czech Republic, the Slovak Republic, Poland, Slovenia and Austria, an upper secondary TVET qualification is the highest qualification achieved by at least half of the population. However, on average, only 12% of all upper secondary schools TVET students in the Organization for Economic and Cultural Development (OECD) are enrolled in TVET programmes. By contrast, the Eastern Asia and Southern Asia enrollment rate is 18 percent and 20 percent respectively, which explain they are having the lowest shares in terms of the enrollment status (OECD, 2017).

The importance of the TVET sector to national development has been recognized globally. Despite this fact, the countries of South Asia such as Pakistan, Afghanistan, Bangladesh, India, Nepal, and Sri Lanka have low interest in TVET. The main reason behind this is a poor perception of society about TVET which is eventually responsible for the low enrollment profile (Parrya & Hayden, 2015). Nevertheless, the enhancement of the economic contribution by technically trained labor force and the fulfillment of the need of the informal sector by nurturing the basic skill, there are two basic challenges along with other several issues for the Pakistan and South Asians countries with respect to skillful labor force. In the first instance, TVET has then been deemed historically associated with second-class system, where people have to work with their hands when engaged in menial jobs and do not participate in the category of education which is appropriate for the first-class system, even though the highest experience and skill is prerequisite in order to have training in a profession (Yunos, Lai, & Hamdan, 2017). Secondly, a notion of a worthy life has thus been obliquely formed around the ideal of civilized liberty. Working for a living has conventionally been supposed in many civilizations to be degrading and not a worthy mode of spending one's time (Bosch & Charest, 2009).

A delicate dilemma has emerged over the perceived gap between TVET and liberal academic education. While the gap has been entrenched, a problem of the low interest due to the misconception of TVET has grown to a predominantly intense level. Consequently, attention to the fundamentals of education is a necessary basis for reforms required to make TVET attractive to broad sectors of the population and economy (Agrawal, 2017).

## **2.0 PURPOSE AND RESEARCH QUESTIONS**

The present study aims at giving a brief review of the literature about students' interest in Technical and Vocational Education and Training (TVET). The specific research questions addressed in the systematic review are:

1. What are the objectives, methodologies, and population used in the studies related to the students' interest in Technical and vocational education and training TVET?
2. What factors influence the students' interest/attitude to choose Technical and vocational education and training TVET?

## **3.0 METHODOLOGY**

In this study, systematic literature review methodology is used to address the students' interests in Technical and Vocational Education and Training (TVET). A systematic literature review aims to address the problem by identifying, critically appraising, collecting and analysing data of all relevant studies addressing on a specific area to answer a specific research questions (Cochrane Collaboration, 2014). Compared with a narrative literature review, a systematic review that employs a strict methodology in a documented and structured process leads to a more reliable and validated conclusion (Sawyer, 2017).

### **3.1 Procedure**

#### **3.1.1 Search process/ Identification**

The search process is a manual search, researchers choose to restrict their search to the Education Resource Information Centre (ERIC) database, the search focused on full-text articles, written in English, and published between January 2008 until November 2018. The reference list of all selected articles were hand-searched to obtain useful studies for the review. Keywords applied in search: 'interest' and 'attitude' in 'technical' and 'vocational' and selected that articles contained one or more TVET words: 'technical', 'vocational', 'technology', 'entrepreneurship'. Some researchers used 'interest' and 'attitude' synonymously. By neglecting the word 'attitude' would not be in the best interest of enlightening the issue and could exclude some significant contributions.

#### **3.1.2 Inclusion / exclusion criteria**

The researcher formulates inclusion and exclusion criteria to choose appropriate and focused studies to answer the research questions. It set the boundaries for systematic review which prevents bias from the selection of studies (Trickey et al., 2012). The following Inclusion Criteria (IC) were employed to determine which papers would be included in the review:

IC<sub>1</sub>: All studies published between 2008 and 2018

IC<sub>2</sub>: All selected studies had to be peer-reviewed.

IC<sub>3</sub>: The studies are included which are published in the Journal.

IC<sub>4</sub>: The studies are included which are written in the English language.

Excluding articles Criteria (EC) were also identified:

EC<sub>1</sub>: Studies were excluded if the content were book or systematic review

EC<sub>2</sub>: Studies were excluded if the paper was comments, letter or chapters of a book

EC<sub>3</sub>: If the language of the articles published other than the English language.

Primarily the "secondary students" were included in the research. Only three articles were resulted after applying this limitation. By excluding the word 'secondary' from the search researcher got a higher range of included articles.

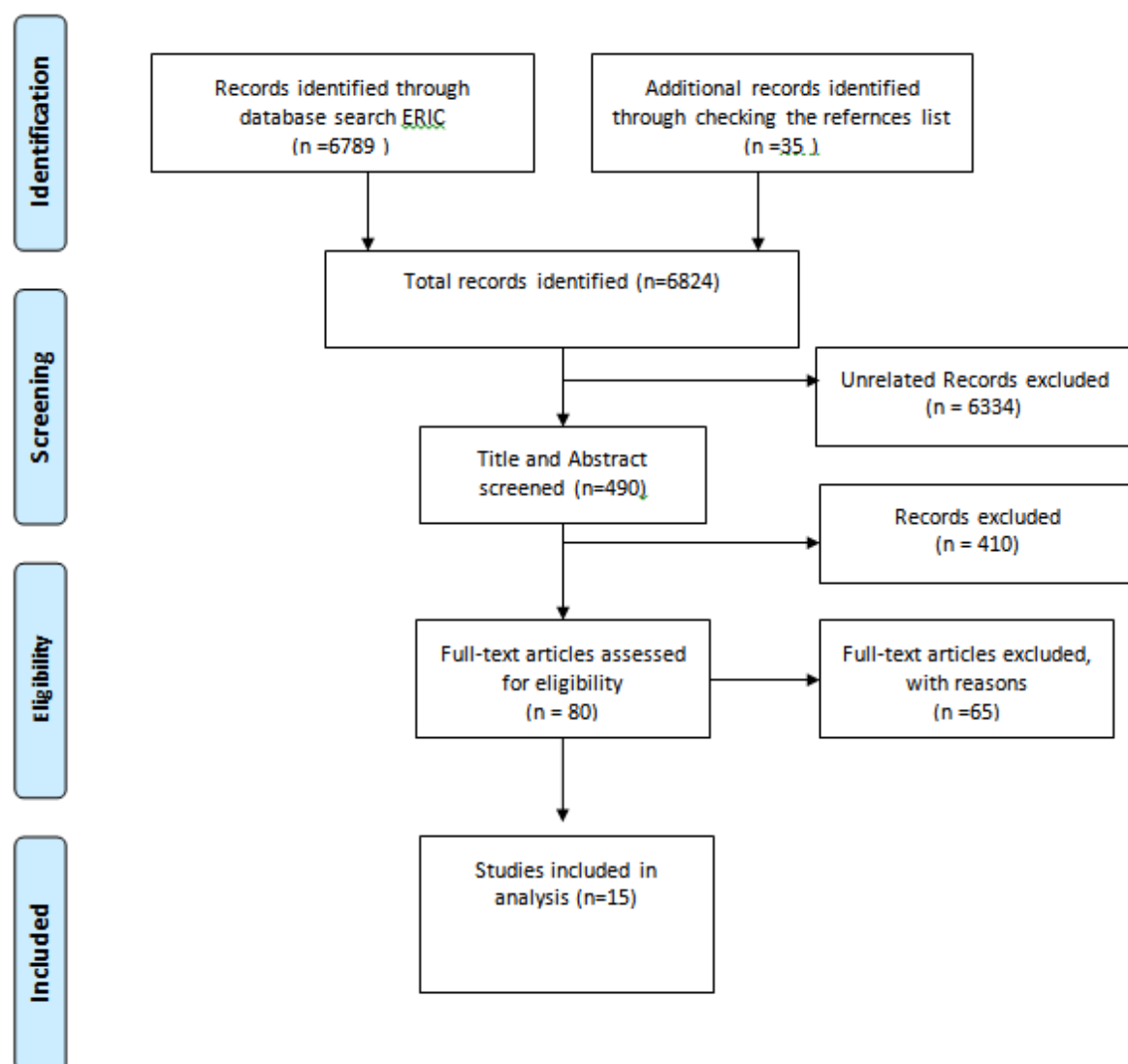


Figure1: Flow chart of study selection process

### 3.1.3 Study Selection

Based on the research terms, 6789 articles were obtained in ERIC. An additional 35 articles were obtained by checking through the reference list of relevant articles for review. A total of 490 of these were then selected according to the titles, abstracts, and keywords. After reading the selected articles (n=80), a total of 15 articles were chosen which met the inclusion and exclusion criteria (as shown in figure 1).

## 4.0 DATA ANALYSIS

Content analysis was used for this study. Content analysis is a method that can be applied quantitative or qualitative both path, it allows researchers to make many decisions based on the research questions and data (Stemler, 2015). In the light of this study research questions, the analysis focussed on an published studies according to the criteria: year of publication. The data extracted from the studies included in the review were reported in a table 1 and the evidence is synthesized in a narrative review.

## 5.0 RESULTS/ FINDINGS

The findings of this systematic review depict the main themes that are relevant to students' interest in TVET:



### **5.1 Description of included studies**

Fifteen studies have been included (n=4) from Nigeria, Malaysia (n=6), Pakistan (n=1), Kenya (n=1), Latvia (n=1), India (n=1) and Ghana (n=1), published between 2008 and 2018. The smallest study had a sample size of 65, while the largest had 649. Table 1 summarizes the detail on study year, location, methods, results, and factors that influence students' interest in TVET. All included studies used a range of quantitative designs.

### **5.2 Factors that influence students interest in TVET**

Although countries are aware of the significance of the TVET sector, it still requires monumental tasks to attract the students to become the TVET part. After analysing the reviewed articles, it revealed factors that have various sub-dimensions which are mentioned below:

#### **5.2.1 Socioeconomic Status**

The finding of Ayub's (2017) research shows that parental socioeconomic status is a significant factor to develop Pakistani students' interest in Technical Education and Vocational Training programme. The parents (education, income, occupation) with low socioeconomic status compel their children to join TEVT. Zain, Akram and, Ghani reported that students with a family background of entrepreneurship career have more interest and may likely to follow their family's footsteps (Zain, Akram, & Ghani, 2010; Ibrahim & Bakar, 2015). Educated parents don't want their children to study vocational/technical subjects (Azubuike, 2011). For many Ghanaians, TVET is made for poor people and who have fewer opportunities (Ayiah, Mettle, & Ayimah, 2014). Male students perceive parental factor more than female student as a factor that influenced their choice secretarial studies (Igbinedion, 2011).

#### **5.2.2 Personality Trait**

Personality traits refer to the degree an individual feels that he/she is capable of starting a business e.g. self-efficacy, locus of control and need for achievement. The findings of Zain, Akram, and Ghani, (2010) indicated that personality trait does influence their attitude/intention toward entrepreneurship. The study reflects the surveyed Malay (TVET) students have self-confidence and have the ability to become an entrepreneur (Ibrahim, & Bakar, 2015).

#### **5.2.3 Economic Trait**

One study revealed that vocational subjects (Arts and Design) are an expensive curriculum on the administration (Indoshi, Wagah, & Agak, 2010). A study by Yasin, Mahmood, and Jaffar (2011) found that a higher number of Malaysian technical students perceived difficulties in getting assistance from financial providers to start a business.

#### **5.2.4 Social support**

Friends, family, peers, and teachers play an important role in influencing the individuals' interest and persuade them to become entrepreneurs (Zain, Akram & Ghani, 2017; Abdullah, & Sulaiman, 2013; Ibrahim, & Bakar, 2015). The study conducted by Ariff et al., (2010) also supported the results of Malaysian university students surveyed had a greater positive influence of subjective norms (Arif et al., 2010; Yasin, Mahmood, & Jaafar, 2011; Ibrahim, & Bakar, 2015; Mustapha, & Selvaraju, 2015). In contrast, the study showed that there is no influence of peer on students' interest toward a choice of subject (Igbinedion, 2011). Students residing in the village have more influence of 'sibling' on selecting technical institutes (Mahajan & Golahit, 2017).

#### **5.2.5 Geographic and Demographic Characteristics**

The findings of the Mahajan and Golahit, (2017) studies indicated that female students higher influence of parents than male students on their decision of selection for technical institutes. Furthermore, gender found one of the factors that influence the study of vocational/technical subjects. Male have higher interest toward technical subjects than females (Azubuike, 2011, Lawal, 2012). In another study, Lattiva female pupils assessed themselves higher by all of the proposed soft skills than males. Findings showed that female pupils enjoy learning more than males (Lavendels, Sitikova & Uhanova, 2012). In contrast, three studies showed that there is no difference between male and female interest toward technical and vocational education (Igbinedion, 2011; Reddy, Devi & Reddy, 2011; Mahajan & Golahit, 2017).

The vocational education interests of the students belonging to rural and urban areas show that the students from urban areas have more inclination for vocational education than the students from rural areas (Reddy, Devi & Reddy, 2011; Lavendels, Sitikovs & Uhanova, 2012). In contrast, one study found that Nigerian students from rural settings had a higher disposition toward Technical Education as compared to the urban settings (Lawal, 2012). People with a background in business had more positive attitudes toward entrepreneurial than people with a background in engineering (Yasin, Mahmood & Jaafar, 2011)

## **6.0 SYSTEMATIC REVIEW LIMITATIONS**

The main benefit of a systematic review as compared to the traditional narrative review is its ability to systematically and replicably identify all the accessible evidence, systematically and reliably. Therefore, a systematic review approach was taken rather than a narrative literature review. Usually, systematic reviews are carried out by teams that share the workloads, increase the reliability and decline the researcher's bias.

However, given the context of the review, the researchers used one database. While this database might not comprise all significant research; the researchers believe that by using a rigorous procedure to review the literature, they have been able to systematically reduce the probability of neglecting any information that would critically alter the content of the present article. Therefore, it is suggested that further research or investigation about students' interest in TVET be conducted by including more database and extend the number of years. An additional limitation was the fact that the researcher did not explore grey literature, due to resource constraints.

## **7.0 IMPLICATIONS FOR FUTURE RESEARCH**

Further studies should be prospective, employing experimental methods to investigate the interventions to foster secondary schools students' interest in TVET. Policy-makers and stakeholders should invest in supporting research in this area to keep Technical and Vocational Education and Training in sync with every changing demand.

While there are several TVET-related areas tracks such as architecture and construction, manufacturing, and agriculture, researchers focus on engineering and entrepreneur courses only. Therefore there is a need for future research on the interest of TVET courses and the effects of those courses on students' postsecondary endorsement and performance in TVET.

## **8.0 CONCLUSIONS**

Student interests play a significant role concerning their choices of profession. If students were aware of their interest and acquire the required skills, they could choose appropriate professions. From the finding it can be concluded that a combination of factors effect students interest, it can acts as guidance to strategize and to promote the TVET sector.

## **9.0 RECOMMENDATIONS**

To conclude based on the results, a significant number of recommendations are suggested: Firstly, in order to increase students' interest in Technical and Vocational Education and Training, the societal perception of TVET needs to be upgraded. Thus, impressive innovations in the world of work should be dynamically incorporated into the training programme for more skills acquisition and efficient job performance. Secondly, incorporate soft skills and practical learning through workshops and internships into the school-based curriculum. Lastly, it is recommended for entrepreneurship mind-set should emphasize in a career counselling programme for TVET students in their course selection.

## **REFERENCES**

Abdullah, A. A., & Sulaiman, N. N. (2013). Factors that influence the interest of youths in agricultural entrepreneurship. *International Journal of business and Social science*, 4(3), 288-302.

- Ariff, M., Husna, A., Bidin, Z., Sharif, Z., & Ahmad, A. (2010). Predicting entrepreneurship intention among malay university accounting students in malaysia. *UNITAR e-Journal*, 6(1).
- Agrawal, T. (2017). Vocational education and training in India: a labour market perspective, *Journal of Vocational Education & Training*, 69:2, 246-265, DOI: 10.1080/13636820.2017.1303785.
- Ayiah-Mensah, F., Mettle, F. O., & Ayimah, J. C. (2014). Modelling the factors that influence career choice of technical and vocational students (a case study of Takoradi and Ho Polytechnics). *International Journal of Mathematics and Statistics Studies*, 2(5), 62-80.
- Azubuikwe, O. C. (2011). Influential factors affecting the attitude of students towards vocational/technical subjects in secondary schools in South eastern Nigeria. *Journal of educational and social research*, 1(2), 49-56.
- Billet, S. (2011). Vocational Education: Purposes. *Traditions and Prospects* (New York).
- Bosch, G., & Charest, J. (2008). Vocational training and the labour market in liberal and coordinated economies. *Industrial Relations Journal*, 39(5), 428-447.
- Dormeier Freire, A., & Giang, H. T. (2012). The role of family in vocational education and training choices: a case study in Vietnam. *International Studies in Sociology of Education*, 22(3), 237-257.
- Edwin Obwoye, M., & Stela Kwamboka, O. (2016). E-Learning in TVET: An Opportunity for Developing Countries. *IRA International Journal of Education and Multidisciplinary Studies* (ISSN 2455–2526), 3(3).
- Ibrahim, W. N. A., & Bakar, A. (2015). Impact of Entrepreneurship Education on the Entrepreneurial Intentions of Students in Technical and Vocational Education and Training Institutions (TVET) in Malaysia. *International Education Studies*, 8(12), 141-156.
- Igbinedion, V. I. (2011). Perception of factors that influence students' vocational choice of secretarial studies in tertiary institutions in Edo State of Nigeria. *European Journal of Educational Studies*, 3(2), 325-337.
- Indoshi, F. C., Wagah, M. O., & Agak, J. O. (2010). Factors that determine students and teachers attitudes towards art and design curriculum. *International Journal of Vocational and Technical Education*, 2(1), 9-17.
- Iroriteraye-Adjekpovu, J. I. (2013). Vocational education teachers' preparation for the use of information and communication technology tools to enhance sustainable economic development. *Nigerian Vocational Association Journal* 18 (1), 24-32.
- Lavendels, J., Sitikovs, V., & Uhanova, M. (2012). Influence of socio-demographic characteristics to attractiveness and success of initial vocational education and training in latvia. *Procedia-Social and Behavioral Sciences*, 55, 756-765.
- Lawal, B. O. (2012). Attitude of students towards technical education in Osun state. *Asian social science*, 8(3), 208.
- Maclean, R., & Wilson, D. (Eds.). (2009). *International handbook of education for the changing world of work: Bridging academic and vocational learning* (Vol. 1). Springer Science & Business Media.
- Marope, P. T. M., Chakroun, B., & Holmes, K. P. (2015). *Unleashing the potential: Transforming technical and vocational education and training*. UNESCO Publishing.
- Mustapha, M., & Selvaraju, M. (2015). Personal attributes, family influences, entrepreneurship education and entrepreneurship inclination among university students. *Kajian Malaysia: Journal of Malaysian Studies*, 33.
- Parry, J., & Hayden, M. (2015). 'Skills Development: A Review With Reference To Southeast Asia'. *Journal of International and Comparative Education*, 4(2), 67–78.  
<https://doi.org/10.14425/00.87.94>
- Reddy, P. A., Devi, D. U., & Reddy, E. M. (2011). A study of the vocational education preferences and interests of the indian undergraduate students. *Bulgarian Journal of Science and Education Policy (BJSEP)*, 5(1), 94-114.
- Sarebah, W., & Hazleeza, A. H. (2015). Training for Women towards Mnagement in TVETs. *Research on Humanities and Social Sciences*, 5(1), 69-72.
- Sawyer, R. K. (2017). Teaching creativity in art and design studio classes: A systematic literature review. *Educational Research Review*, 22, 99–113.
- Stemler, S. E. (2015). Content analysis. *Emerging trends in the social and behavioral sciences: An*

*Interdisciplinary, Searchable, and Linkable Resource*, 1-14.

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Group P (2009) Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *BMJ* 339: b2535.

Yasin, A. Y. M., Mahmood, N. A. A. N., & Jaafar, N. A. N. (2011). Students' Entrepreneurial Inclination at a Malaysian Polytechnic: A Preliminary Investigation. *International Education Studies*, 4(2), 198-207.

Yunos, Jailani & Lai, Chee sern & Hamdan, Nhidayah. (2017). Sustainability of TVET TE Programme: An Exploratory Sequential Mixed Method Design. *Advanced Science Letters*. 23. 220-222. 10.1166/asl.2017.7138.

Zain, Z. M., Akram, A. M., & Ghani, E. K. (2010). Entrepreneurship intention among malaysian business students/l'esprit d'entreprise chez les etudiants en commerce Malaisiens. *Canadian social science*, 6(3), 34

## **The Influence of Gender, Career Exposure and Self-Concept Factors towards Employability Skills among Students in Entrepreneurial Development and Graduate Marketability Program**

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### **ABSTRACT**

*Statistics show that unemployment among university graduates is not influenced solely by their academic achievement but also influenced by their acquisition of employability skills. The acquisition of employability skills is critical to secure employment opportunities among undergraduate students. This study aimed to examine the level of employability skills, gender, career exposure, and self-concept factors among students who participate in the Entrepreneurship and Employability Development Program at Universiti Putra Malaysia. This study is a survey study and conducted by using the questionnaire instrument. The questionnaire was adapted and modified from the Malaysian Engineering Employability Skills Framework (MEES). Final year students of the Faculty of Agriculture, Universiti Putra Malaysia participating in the program were selected using a non-random sampling method. The data were analyzed descriptively and inferentially with IBM SPSS Statistics software. The findings depict that the level of employability skills of the students is at high level in terms of teamwork skills followed by competencies in discipline, competencies in application and practice, and communication. The mean of level of problem-solving and decision-making skills is slightly below the overall mean value. There were no significant differences in employability skills scores between men and women. Students with high career exposure tend to acquire employability skills. There is a positive and weak relationship between self-concept and employability skills. In conclusion, the university, the program and students need to play their role in enhancing the level of employability skills of students in order to produce high quality graduates and withstand future challenges in the industry.*

**Keywords:** Employability skills, career exposure, self-concept

## **1.0 INTRODUCTION**

In today's challenging world, the role of educational institutions is becoming more important as a place where students should gain knowledge and acquire employability skills. Educational institutions such as universities are responsible for providing graduates with knowledge in the field of study and can benefit to community and nation. Universities must also bear the collective responsibilities with other parties in preparing students from student phase to the labor phase.

Every year, thousands of students have graduated from local and foreign educational institutions. It is estimated that about 140,000 new graduates will enter the job market every year (Edree, 2011). However, there are many cases indicate that university graduates or bachelor degree holders are not guaranteed for jobs in the open market. Jobs offered by public and private sectors are not sufficient to match with number of graduates annually. Therefore, this situation has contributed to the recent increase in unemployment among graduates from public and private institutions in Malaysia (Krish et al., 2012).

The Department of Statistics Malaysia recorded a low unemployment rate of around 3.5% every year. However, the number of unemployed graduates from higher education institutions is high every year. According to Kamal (2006), unemployment among university graduates is not due to academic achievement but due to their lack of employability skills which are less emphasized by graduates themselves. Supported by statistics from Jobstreet in 2005 found that most graduates do not meet job requirements in terms of communication skills, interpersonal skills and teamwork. In addition, more women graduates in the country are unemployed because they do not have the relevant and practical skills needed in the labor market despite having excellent academic qualification. Therefore, unemployed among graduates has become a main concern of labor market in Malaysia.

There are many factors of unemployment among university graduates, such as do not possess employability skills. According to Andy (2003), university graduates are lacking of communication skills and work experiences. In addition, employees require ready-made graduates with skills such as high level of personality, self-confidence, communication skills, problem-solving and decision-making skills alongside academic knowledge. With these shortcomings, they are not able to show their capabilities in doing jobs and fail being hired by employees.

One of many programs that the government has initiated for higher education institutions is to organize a Graduate Employability Intervention Program. The program is aimed at enhancing the value of graduates in the areas of professional qualifications, personal skills as well as personality in order to help students secure employment and be relevant in the labor market. However, the implementation and evaluation of employability skills in this program is still in doubt and fail to attract many students to participate in. Not many students consider and enroll in this program seriously because they think the program is not a proper platform for them to get a position in the job market. Therefore, this study was designed to identify the level of employability skills possessed by University Putra Malaysia students who have participated in the Entrepreneurial Development and Graduate Marketability Program and its relationship to gender, career exposure, and self-concept.

## **2.0 HUMAN CAPITAL THEORY**

The Human Capital Theory shows the role of investment in education to improve economic and social achievement. It is a very influential theory in the western education system until 20<sup>th</sup> century that has provided a framework for governmental policies since the early 1900's. This theory is also seen as the key to drive economic performance. Schultz (1961) views human capital as wealth as contrasted to the concept of labor in the classical perspective. Most researchers have accepted this view that human capabilities is based on the knowledge and skills available to an individual (Beach, 2009). In addition, some researchers have shown that human capital can be closely related to knowledge, skills, education, and ability to work (Garavan et al., 2001; Youndt, Subramaniam & Snell, 2004).

Schultz' statement was reinforced by Becker (1964) that mentioned labors' productivity could be enhanced with education and training, which in turn would lead to increase in income and employees' quality of life. He added that motivation and persistence in work is productivity of workers, while income is a driving force in working towards career development. This theory guides the employees or trainees in choosing required skills in order to raise their level of acquisition of skills. In conclusion, the theory plays the major role in explaining that the development of employability skills for students is relevant and impactful for their career enhancement and quality life later.

## **3.0 THE INFLUENCE OF GENDER, CAREER EXPOSURE AND SELF-CONCEPT**

Employability skills are categorized as skills across all industries and occupations. However, there are too many young graduates left university without employability skills, attitudes, and understanding required to succeed in the world of work (Sherer & Eadie, 1987, p. 16). This employability skill is an added value to an individual who owns it. The unemployment rate among university graduates are among the highest in the world. Employability skills are defined as skills needed not only to get a job, but also to improve the progress of a company to reach its potential and contribute to its potential. Employability skills are a set of skills that will equip students for more effective and competent behaviors and actions. Employability skills are also soft skills or non-technical skills, which are important for students in order to know and develop in becoming skilled individuals in the world of work. According to Carnevale, Gainer and Meltzer (1998), employability skills are divided into three groups. The first group is individual skills which include communication skills, computer skills and cultural skills. Second, individual trust skills that include individual management, ethics and vocational maturity. Third is the economic transformation skills that include problem-solving skills, learning skills and career development.

Employability skills are also a set of skills, understandings and personal attributes that enable graduates to find jobs and succeed in their chosen fields (Lorraine & Sewell, 2007; Yorke, 2006). Lankard (1990) stressed the importance of employability skills in order to meet the various types of jobs offered, such as communication skills, personal and interpersonal relationships, decision making skills and organizational management processes. According to Mohd Hazwan Mohd Puad (2015), students who

acquire skills in communication, teamwork, problem-solving, decision-making and competence in application and practice field have high employability skills and prepared for employment. In addition, the Department of Education, Victoria, Australia (2006) outlined employability skills into two skills namely basic skills and personal skills. Basic skills include communication skills, teamwork skills, problem-solving skills, decision-making skills, planning and managing skills, learning and technology skills. Meanwhile, personal skills refer to individual loyalty, earnestness, integrity and honesty, attractive personality and adaptability in the workplace. Meanwhile, Lowden (2011) stated that employers now prefer hiring employees who work in a team and promote leadership and personal qualities.

There is an empirical evidence that shows the relationship between employability and career. Refer to Rosenberg (1965), the self-concept is a person's positive or negative attitude toward himself. It reflects how an individual perceives himself or his personal attributes (Rice & Dolgin, 2005). The self-concept expands and becomes more complex throughout his or her life. Although the self-concept is considered stable, it can be influenced by experiences such as assessment of people who are considered important in his or her life. According to Cardoso and Moreira (2009), students' self-concept varies based on psychological maturity factor. A study was conducted on 14 and 17 years old students. The results showed that the level of self-esteem of is clearer as compared to 14 years old students. 17 years old students are also more positive in their future careers. Kerka (1998) found that people with low self-concept were more likely to perform poorly and less successful than students with high self-concept. Baumeister et al. (2003) found that students who do not have a clear concept of themselves are less confident about succeeding in any aspects of their lives. These premises show that employability skills cannot be developed if they possess low level of self-concept.

The Malaysian Engineering Employability Skills (MEES) framework provides a framework to enhance students' employability skills prior to entering the workforce. Engineering employability skills are also known as generic skills and are associated with non-technical skills. These skills sometimes refer to generic capabilities, transferable skills, basic skills, work skills, soft skills, core skills, core competencies and core competencies or skills that are inherent in a person (Fujimura, 2004; Yorke, 2006). These non-technical skills have played an important role for graduates in gaining employment and success in the workplace (Department of Education, Science and Training of Australia, 2006). The MEES framework is based on three main components: (a) personal attributes, (b) personal skills and (c) knowledge. These main components include 10 skills including: (1) communication skills, (2) teamwork, (3) lifelong learning, (4) professionalism, (5) problem-solving and decision-making, (6) application and practice skills, (7) knowledge of science and engineering principles, (8) knowledge of contemporary issues, (9) engineering systems approach and (10) competencies in specialized engineering principles (Yusoff et al., 2012).

Components of personal attributes that influence employability skills comprise of five skills. These include communication skills, teamwork, lifelong learning, professionalism, and problem-solving skills and decision-making skills. These five personal attributes enable one to work effectively with others in the workplace (Zaharim et al., 2009). Meanwhile, for the component of personal skills, it consists of six integrated skills namely communication skills, teamwork, problem solving and decision-making skills, application and practice competencies, systems engineering approaches and competencies in specific engineering principles or disciplines. These personal skills reflect the individual's ability to gain and succeed in getting a job. Personal skills reflect the ability of individuals to acquire, retain and succeed in securing employment status (Zaharim et al., 2009). Moreover, the knowledge components that influence employability skills are made up of five skills. These include lifelong learning skills, problem-solving and decision-making skills, knowledge of science and engineering principles, knowledge of contemporary issues and systems engineering approaches. These knowledge skills are needed to facilitate understanding of science and technology principles in engineering (Yusoff et al., 2012).

Figure 1 and Table 1 below show the MEES framework and the components created for the framework. The table shows the details of the set proposed for this study. The skill set is included in the MEES framework which is a benchmark for employer requirements, accreditation requirements and professional graduates. In addition, the table represents the recommended skills and descriptions of each of the skills listed in the MEES framework. A variety of relevant skills criteria can be viewed and guided by students in improving employability skills in the self. It is clear that students are encouraged to develop employability skills while they are still in school.

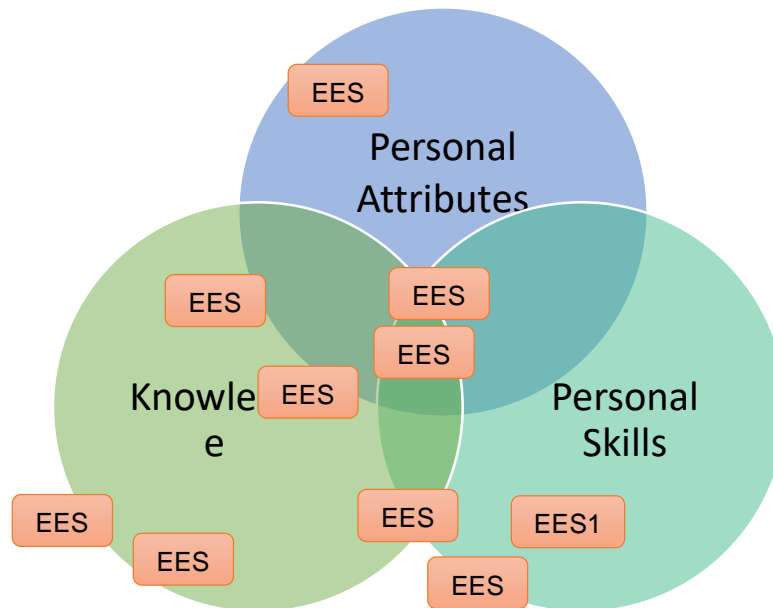


Figure 1: The Malaysian Engineering Employability Skills (MEES) Framework

Table 1: Components of Malaysian Engineering Employability Skills (MEES) Framework

Code	Skill	Description
EES1	Communication skills	Ability to present ideas confidently and effectively through listening, oral and written in public
EES2	Teamwork	Ability to function effectively and individually in groups with the ability to be a leader or manager, as well as an effective team member
EES3	Lifelong learning	Ability to identify the need for continuous learning, and the capacity to do so
EES4	Professionalism	Ability to understand social, cultural, global and environmental responsibilities as well as commitment to responsible professionally and ethically
EES5	Problem-solving and decision-making skills	Ability to identify problems, apply problems, formulate and solve
EES6	Competence in application and practices	Ability to apply modern techniques, skills and engineering capabilities in application
EES7	Knowledge of science and engineering principles	Ability to acquire and apply basic engineering knowledge
EES8	Knowledge of contemporary issues	Ability to learn independently to acquire new knowledge, skills and technology
EES9	Engineering system approaches	Ability to use system approach in designing and evaluating operating performance
EES10	Competence in specific engineering disciplines	Ability to acquire deep technical competencies in specific engineering disciplines, expertise in theory and engineering research and to apply basic marketability skills

#### 4.0 RESEARCH METHODOLOGY

The approach used in this study is quantitative through descriptive design. This study aimed to identify the level of employability skills of Universiti Putra Malaysia students in terms of personal skills who involved in the program. Furthermore, the researchers examined the influence of gender, career exposure and self-concept factors towards employability skills among students who involved in the program. In this study, due to limited resources, the researchers considered only personal skills components



of employability skills by referring to MEES framework. The researchers used a non-random sampling method to collect data from respondents. The population in this study numbered at 200 students. Based on the number of population, 132 students from final year students of the Faculty of Agriculture, Universiti Putra Malaysia who involved in the program was employed in this study. The Cohen's table was utilized to obtain the appropriate number of sample. The total number of respondents involved in this study was 80 students and the return rate was 60.6%.

The researchers collected data by using questionnaire. The items in the questionnaire were divided into three sections, namely Section A, Section B and Section C. Section A contains information related to the respondents' background, while section B provided information on student self-concept and section C to assess the employability skills from students' perspectives. The questionnaire was reviewed by experts and corrected by the researchers. A pilot study was conducted by researchers on 25 students who were not involved in the actual study. The analysis results show that the Cronbach's Alpha test for the self-concept is 0.71 and the employability skills is 0.96 as shown in Table 2. The reliability of the instruments is acceptable and the questionnaire can be used in actual data collection.

Table 2: Instrument Reliability

Variable	Pilot test Cronbach Alpha (N=25)
<b>Self-concept</b>	.71
<b>Employability skills</b>	.96
Communication skills	.76
Teamwork	.91
Problem-solving and decision-making skills	.82
Knowledge of Science and Engineering Principles	.76
Competence in specific engineering disciplines	.88

This study has received approval from the program for the researchers conducting studies on students who involved in the sponsored programs. In addition, the researchers also considered 132 students who involved in the program. The researchers has requested permission to send e-mail to students who involved in the program. The e-mail message includes questionnaire was sent to students. A sufficient period of time was given to the respondents to fill out the questionnaire. After two weeks, the researchers collect the completed questionnaire and review for any incomplete feedback. If any information was found to be incomplete, respondents were asked to complete it again. As a result, all the questionnaires distributed were recovered with complete information and ready for analysis.

## 5.0 RESEARCH FINDINGS

### 5.1 Gender Factor

Table 3 shows that the number of female students involved in this study which is 44 (55%) greater than the number of male students which is 36 (45%). Most of the students were between the ages of 22 and 24 which is 66 (82.5%) and 9 respondents (11.3%) were between the ages of 19 and 21. The lowest age group was between the ages of 25 and 27 which is 5 (6.3%). Of the total, 69 respondents (86.3%) were Malays and followed by Chinese, 4 respondents (5%). While the respondents representing the Indians were 3 (3.8%) and 5 respondents (5%) were from other races namely Kadazan, Iban and Bidayuh.

This study also includes the influences of employability skills by gender. A t-test was used to determine differences in employability skills between male and female students. The confidence level is set at .05. Based on Table 4 below, t-test results showed that there was no significant difference in level of employability skills between female and male students with  $t(78) = -1.924, p > .05$ .

Table 3: Demography of Respondent (N = 80)

<b>Gender</b>		
Male	36	45.0 %
Female	44	55.0 %
<b>Age</b>		
19 – 21 years old	9	11.2 %
22 – 24 years old	66	82.5 %
25 – 27 years old	5	6.3 %
<b>Ethnic</b>		
Malay	69	86.2 %
Chinese	4	5.0 %
Indian	3	3.8 %
Others	4	5.0 %

Table 4: T-test Analysis of Employability Skills Based on Gender (N=80)

Variable	n	Mean	Standard Deviation	df	t	p-value
Male	36	4.01	.428	78	-1.924	.058
Female	44	4.20	.471			

## 5.2 Career Exposure Factor

The findings about student career exposure (Table 5) show that 93.8% had a job exposure through internet searching, such as Jobstreet, LinkedIn and Facebook, while 91.3% respondents have received career information from job advertisement in the newspaper, printed documents. About 90% of respondents have received career information from parents' networking and 87.5% through part-time work. Furthermore, 82.5% stated that they had a career exposure through a study at a job organization, 78.8% from brochure or career prospectus, 76.3% respondents said their source of career exposure from parents' company. Only 61.3% respondents stated they had a career exposure from career seminar or exhibition.

Table 5: Career Exposure Experience of Respondents (N=80)

Career Exposure Experience	Percentage (%)	
	Yes	No
Internet searching	93.8	6.2
Job advertisement	91.3	8.7
Parents' networking	90.0	10.0
Part-time job	87.5	12.5
Job organization	82.5	17.5
Career brochure/ prospectus	78.8	21.2
Parents' company	76.3	23.7
Career seminar/ exhibition	61.3	38.7

## 5.3 Self-Concept Factor

Table 6 shows the mean value distribution and standard deviation for the self-concept items as well as the mean scores and standard deviations for the whole self-concept.

Table 6: Score Mean and Standard Deviation of Self-Concept (N=80)

1. Self-Concept	2. Mean (M)	3. Standard Deviation (S.D.)
4. Satisfy with yourself	5. 3.89	6. .665
7. Think good at all at yourself	8. 2.61	9. .992
10. I have some good personal qualities	11. 4.10	12. .565
13. Being able to do activities that others do	14. 4.13	15. .682
16. Feel has many features that can be proud of	17. 3.18	18. 1.02
19. Feel yourself is very useful	20. 3.15	21. 1.28
22. Feel yourself is valuable	23. 4.14	24. .611
25. Hope I appreciate myself more	26. 4.27	27. .710
28. Tend to feel yourself is successful	29. 3.51	30. 1.14
31. Take a positive attitude towards yourself	32. 4.23	33. .656
<b>34. Total Self-Concept</b>	<b>35. 3.72</b>	<b>36. .489</b>

#### 5.4 Level of Employability Skills

Table 5, 6, 7, 8, 9, 10 show the mean distribution and standard deviations of student employability skills items according to dimensions in employability skills. The mean and standard deviation of the overall dimensions of communication skills were (M = 4.13, S.D. = .540). The mean score with the highest decision in communication skills is reflection skills (M = 4.33, S.D. = .591). The lowest score is communicating in English (M = 3.65, S.D. = .995)

Table 5: Mean Score and Standard Deviation of Communication Skills (N=80)

Communication Skills Dimension	Mean (M)	Standard Deviation (S.D.)
Employability skills development programs enhance students' ability to communicate clearly	4.25	.606
Employability skills development programs enhance students' ability to make reflection	4.33	.591
Employability skills development programs enhance students' ability to present new ideas with confident and effective	4.28	.656
Employability skills development programs enhance students' ability to communicate in English and understand English better	3.65	.995
<b>Total Communication Skills</b>	<b>4.13</b>	<b>.540</b>

Table 6 shows the mean scores and standard deviations for teamwork dimensions (M = 4.22, S.D. = .493). The mean score results show the highest mean score among the five dimensions found in employability skills in terms of personal skills. The student's ability to work in a team within the teamwork dimension showed the highest mean score (M = 4.28, S.D. = .573) and the item with the lowest mean score was the starting own business (M = 4.16, S.D. = .625).

Table 6: Mean Score and Standard Deviation of Teamwork (N=80)

Teamwork Dimension	Mean (M)	Standard Deviation (S.D.)
Employability skills development program enhances students' ability to start their own businesses effectively	4.16	.625
Employability skills development program enhances students' ability to understand their role in a team	4.26	.590
Employability skills development program enhances students' ability to work as an effective player in a team	4.28	.573
Employability skills development program enhances students' ability to work in one team and able to be a leader	4.23	.616
Employability skills development program enhances students' ability to give feedback constructively and considerably	4.23	.551
Employability skills development program enhances students' ability to organize and process symbols, objects, photos and other type of information	4.18	.671
<b>Total Teamwork</b>	<b>4.22</b>	<b>.493</b>

The mean scores and standard deviation of the problem-solving and decision-making dimensions are shown in Table 7. The mean scores for the problem-solving and decision-making dimensions are  $M = 3.87$ ,  $S.D. = .692$ . Problem solving and decision-making skills are the lowest skills in the overall mean score compared to other skills. The items with the highest mean scores were the problem-solving items related to problems in the workplace ( $M = 4.13$ ,  $S.D. = .644$ ) and the items with the lowest mean scores were items that used problem-solving experience ( $M = 3.59$ ,  $S.D. = 1.14$ ).

Table 7: Mean Score and Standard Deviation of Problem-Solving and Decision-Making Skills (N=80)

Problem-Solving and Decision-Making Skills Dimension	Mean (M)	Standard Deviation (S.D.)
Employability skills development program enhances students' ability to identify problems at the workplace	4.13	.644
Employability skills development program enhances students' ability to use their experiences in solving problems	3.59	1.14
Employability skills development program enhances students' ability to apply scientific knowledge, mathematics, and technology in solving problems	4.04	.683
Employability skills development program enhances students' ability to improve students' creativity and innovation	3.73	.993
<b>Total Problem-Solving and Decision-Making Skills</b>	<b>3.86</b>	<b>.692</b>

Table 8 shows the total mean score and standard deviation of competency in application and practice ( $M = 4.14$ ,  $S.D. = .522$ ). According to the items in the application and practice skills, the items that scored the highest mean scores were the ability to use modern technology ( $M = 4.15$ ,  $S.D. = .618$ ) and the lowest scoring items were a variety of techniques and skills needed in agriculture ( $M = 4.12$ ,  $S.D. = .582$ ).

Table 8: Mean Score and Standard Deviation of Competence in Application and Practices (N=80)

Competence in Application and Practices Dimension	Mean (M)	Standard Deviation (S.D.)
Employability skills development program enhances students' ability to develop the techniques and skills needed in agriculture	4.13	.582
Employability skills development program enhances students' ability to utilize modern technology in agriculture	4.15	.618
Employability skills development program enhances students' ability to work in standard and quality	4.15	.618
<b>Total Competence in Application and Practices</b>	<b>4.14</b>	<b>.522</b>

The results of the mean scores and standard deviations for the competency in specific engineering disciplines are shown in Table 9. The overall mean scores for the competency in specific engineering disciplines are  $M = 4.18$ ,  $S.D. = .497$ . Items with the highest mean score were items that applying knowledge in various fields ( $M = 4.23$ ,  $S.D. = .573$ ) and items with the lowest mean scores were items using technical skills in agriculture ( $M = 4.13$ ,  $S.D. = .568$ ).

Table 9: Mean Score and Standard Deviation of Competence in Specific Engineering Disciplines (N=80)

Competence in Specific Engineering Disciplines Dimension	Mean (M)	Standard Deviation (S.D.)
Employability skills development program enhances students' ability to acquire technical skills required in agriculture	4.18	.591
Employability skills development program enhances students' ability to use technical skills in agriculture effectively	4.14	.568
Employability skills development program enhances students' ability to apply knowledge in various field of agriculture	4.23	.573
<b>Total Competence in Specific Engineering Disciplines</b>	<b>4.18</b>	<b>.497</b>

Table 10 shows that the level of employability skills of Universiti Putra Malaysia students who involved in the program is high ( $M = 4.11$ ,  $S.D. = .460$ ). The highest mean was shown in teamwork ( $M = 4.22$ ,  $S.D. = .493$ ) followed by competency in specific engineering disciplines ( $M = 4.17$ ,  $S.D. = .497$ ). Competency in application and practice ( $M = 4.14$ ,  $S.D. = .522$ ), communication skills ( $M = 4.13$ ,  $S.D. = .540$ ) and problem-solving and decision-making skills ( $M = 3.87$ ,  $S.D. = .692$ ) were below the total overall mean.

Table 10: Total Mean Score and Standard Deviation of Employability Skills (N=80)

Employability Skills Components	Mean (M)	Standard Deviation (S.D.)
Communication skills	4.13	.540
Teamwork	4.22	.493
Problem-solving and decision-making skills	3.86	.692
Competence in application and practices	4.14	.522
Competence in specific engineering disciplines	4.18	.497
<b>Total Employability Skills</b>	<b>4.11</b>	<b>.460</b>

Furthermore, in Table 11, Pearson correlation was used to measure the relationship between employability skills and self-concept. Self-concept variables were found to be positive but low related to students' employability skills. The correlation coefficient values for self-concept with employability skills are weak ( $r = 0.366$ ). This indicates that there is a significant positive and weak relationship between self-concept and employability skills among students involved in marketability programs. There was a coefficient of value indicating low value of communication skills ( $r = 0.391$ ) but it was of the highest value and competence in specific engineering disciplines showed the lowest coefficient of value ( $r = 0.235$ ).

Table 11: Pearson Correlation between Employability Skills and Self-Concept (N=80)

	39. r	40. p-value
41. Employability Skills	42. 0.366	43. .001
44. 45. Communication skills	46. 0.391	47. .000
48. 49. Teamwork	50. 0.312	51. .006
52. 53. Problem-solving and decision-making skills	54. 0.258	55. .024
56. 57. Competence in application and practices	58. 0.319	59. .005
60. 61. Competence in specific engineering disciplines	62. 0.235	63. .041

## 6.0 DISCUSSION ON INFLUENCE OF GENDER, CAREER EXPOSURE AND SELF-CONCEPT TOWARDS EMPLOYABILITY SKILLS

The result shows that the final year students of the Faculty of Agriculture have acquired the required skills in order to secure a job in the industry. Based on the students' feedback indicates that all components of personal skills in employability skills are at a high level especially within the teamwork dimension. Teamwork is very crucial as they determine the level of individual competence in doing things easily. This finding is supported by Zaharuddin Abdul Kadir (2014), who states that achievement of student employability skills also depends on their interpersonal skills such as teamwork skills. Thus, the findings proves that the Graduate Employability Intervention Program organized by Universiti Putra Malaysia has succeeded in nurturing teamwork among university students. In addition to communication, honesty and trustworthiness, teamwork is also a key competency in the employability skills that a person must possess in order to be effective in the workplace (Burgaz, 2008). Supported by Lankard (1990), in order to meet the job requirements from employers, students must possess high employability skills such as excellent communication skills, attractive personal and interpersonal relationships, strong decision making skills and organizational management skills. The program able to develop the knowledge, skills of human capital and employability skills and will assist in the growth of this country.

The findings also show that self-concept is found to be significantly related to student employability skills. Potgieter (2012) also found in his study about relationship between self-concept and employability skills attributes. He noted that people who believe and value themselves are more likely to take proactive steps in developing and managing their careers. The researchers found that the self-concept variables are also the strongest variables affecting students' employability skills. The more positive the student's self-esteem is or the higher the self-esteem, the higher the employability skills score. Supported by Knight and Yorke (2002), employability skills are influenced or affected by the four broadest and interrelated components of self-understanding, practical skills, self-efficacy or self-concept and personal quality in which students evaluate themselves to the extent that they can make a difference. The fourth component is the metacognitive component of self-awareness, the ability to reflect and act upon. By participating in the programs, students are able to improve and develop their self-concept as expected to complement their employability skills. Therefore, the Graduate Employability Intervention Program needs to work towards developing positive self-concept among students since their first year in university. It is because a person's level of working ability also depends on his or her own willingness to relate closely to the concept of self. On the other hand, the study also found that the majority final year students have negative thoughts about themselves because they feel that they do not have any special attributes or skills. As a result, this situation will impact students' confidence to do assigned task and they will be prone to be dependent on others without working on their own.

Furthermore, students who had been exposed to career information before or while joining the program were inclined to possess a moderate to high level of employability skills. Students who have helped parents in their work and who have worked part-time have been exposed to employability skills such as communication and team work skills. This situation will assist them to acquire employability skills throughout their experience. Students with career exposure prior to joining the program can guide other students in mastering employability skills in terms of sharing their experiences. According to Amla (2010), career exposure can shape students' personality and prepare them to be a qualified person to complete a job. He believes that the concept of career exposure has major implications for human capital development and enhancing employability skills.

From the gender perspective, there are not much information and conclusion can be drawn because the researchers have data on the difference of employability skills only. Male and female students have shown that there are no significant difference in terms of acquisition of employability skills. Both group of students should have no problems in mastering employability skills because the influence from gender is not enough provide differences.

## REFERENCES

- Amla H. M. Salleh, D. (2010). *Pendidikan kerjaya dan pembangunan modal insan*. Bangi, Selangor: Penerbit Universiti Kebangsaan Malaysia.
- Andy, K. H. S. (2003). Smart Partnership Between Vocational Technical Training Institutions with the Industry in Creating Skill Workers. Kertas Kerja di Persidangan Kebangsaan Pendidikan Dan Latihan Teknik Dan Vokasional, 29-30 Julai 2004, Hotel Katerina, Batu Pahat.
- Baumeister, R. F., Campbell, J. D., Krueger, J. I., & Vohs, K. D. (2003). Does High Self-Esteem Cause Better Performance, Interpersonal Success, Happiness, or Healthier Lifestyles? *Psychological Science in the Public Interest*, 4(1), 1–44. <https://doi.org/10.1111/1529-1006.01431>
- Beach, J. M. (2009). A Critique of Human Capital Formation in the U.S. and the Economic Returns to Sub-Baccalaureate Credentials. *A Journal of the American Educational Studies Association*, 45(1), 24-38. <https://doi.org/10.1080/00131940802562313>
- Becker, G. (1964). *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Edu*
- Burgaz, B. (2008). Employability competences of vocational secondary school. *Egitim Arastirmalari-Eurasian Journal of Educational Research*, 31, 17-34.
- Cardoso, P. & Moreira, J. M. (2009), Self-efficacy beliefs and the relation between career planning and perception of barriers, *International Journal Education Vocational Guidance*, 9, 177-188.
- Carnevale, A. P., Gainer, L. J., Meltzer, A. S. (1990). *Workplace Basics: The Essential Skills Employers Want*. San Francisco: Jossey-Bass Publishers.
- Department of Education, Victoria, Australia (2006). Careers and Transition: Employability Skills Framework. Retrieved from <https://www.education.vic.gov.au>
- Essays, UK. (November 2018). Cause and Affect of Unemployment in Malaysia Economics Essay. Retrieved from <https://www.ukessays.com/essays/economics/cause-and-affect-of-unemployment-in-malaysia-economics-essay.php?vref=1>
- Fujimura, H. (2004). Managing the Development of One's Own Vocational Skills in Japanese Companies. Changing Employment System and Its Implications for Human Resource Development", *Labor Review Japan*, 1(3). 23- 44.
- Garavan, T., Morley, M., Gunnigle, P. and Collins, E. (2001), "Human capital accumulation: the role of human resource development", *Journal of European Industrial Training*, 25 (2/3/4), 48-68. <https://doi.org/10.1108/EUM0000000005437>
- Kamal Khir. (2006). Training Approach the Employability of Graduate Competencies in The Charging World. *National Conference on Contributing Technical Education and Training 2006*. 28-29 Julai, Katerina Hotel, Batu Pahat, Johor.
- Kerka, S. (1998). Career development and Gender, Race and Class. Eric Clearing house on Adult Career and Vocational Education Columbus. ED421641. Retrieve from <https://files.eric.ed.gov/fulltext/ED421641.pdf>
- Knight, P. T. & Yorke, M. (2002). Employability through the curriculum. *Tertiary Education and Management*, 8(4), 261-276.
- Krish, P., Tamby Subahan, M. M., Osman, K., & Ikhsan, Z. (2012). Are UKM graduates ready to face the challenges of the job market? *Procedia – Social and Behavioral Sciences*, 59, 584-590.
- Lankard, B. A. (1990). Employability: The Fifth Basic Skill. Eric Clearing house on Adult Career and Vocational Education Columbus. ED325659. Retrieve from <https://files.eric.ed.gov/fulltext/ED325659.pdf>
- Lorraine, D. P. & Sewell, P. (2007). The Key to Employability: Developing a Practical Model of Graduate Employability, *Education + Training*, 49(4), 277-289.
- Mohd Hazwan Mohd Puad. (2015). The Role of Employability Skills Training Programs in the

- Workforce of Malaysia. Purdue University. West Lafayette, Indiana. Retrieve from <https://docs.lib.purdue.edu/dissertations/AAI3719684/>
- Potgieter, I. (2012). The Relationship Between the Self-Esteem and Employability Attributes of Postgraduate Business Management Students, *SA Journal of Human Resource Management*, 10(2), 1-15.
- Rice, F. P & Dolgin, K. G. (2005). *The adolescent: Development, Relationships, Cultures* (11th ed.), Boston: Allyn & Bacon.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. New Jersey: Princeton University Press.
- Schultz, T. W. (1961). Investment in Human Capital. *American Economic Review*, 51, 1-17.
- Sherer, M. & Eadie, R. (1987). Employability Skills: Key to Success, *Thrust*, 17(2), 16-17.
- Lowden, K., Hall, S., Elliot, D., Lewin, D. (2005). *Employer' Perceptions of Employability Skills of New Graduates*. London: Edge Foundation 2011.
- Yorke, M. (2006). Employability in Higher Education: What It Is - What It Is Not. Retrieved from [https://s3.eu-west-2.amazonaws.com/assets.creode.advancehe-document-manager/documents/hea/private/id116\\_employability\\_in\\_higher\\_education\\_336\\_1568036711.pdf](https://s3.eu-west-2.amazonaws.com/assets.creode.advancehe-document-manager/documents/hea/private/id116_employability_in_higher_education_336_1568036711.pdf)
- Youndt, M. A., Subramaniam, M., Snell, S. A. (2004). Intellectual Capital Profiles: An Examination of Investments and Returns. *Journal of Management Studies*, 41(2). 335-361.
- Yusoff, Y. M., Zaharim, A., Omar, M. Z., Mohamed, A., Muhamad, N., Mustapha, R., & Rahmat, R. A. A. (2012). Engineering employability skills for Malaysian industry: Framework development. *Proceedings of the 8th WSEAS International Conference on Educational Technologies, Porto, Portugal*. 36-47.
- Zaharim, A., Yusoff, Y. M., Omar, M. Z., & Basri, H. (2009). Employability skills framework for engineering graduate in Malaysia. *The 8th WSEAS International Conference on Education and Educational Technology, Genova, Italy*. 264-272.
- Zaharuddin Abdul Kadir. (2014). Faktor Peramal Kemahiran Kebolehpasaran dalam Kalangan Pelajar di Kolej Komuniti dan Institut Kemahiran Belia Negara, Universiti Putra Malaysia. Retrieved from <http://psasir.upm.edu.my/id/eprint/52172/1/FPP%202014%2053RR.pdf>
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## Faktor Mempengaruhi Kompetensi TPACK Guru PTV di Semenanjung Malaysia

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### ABSTRAK

*Tenaga pengajar yang kompeten menjadi antara fokus utama dalam transformasi TVET. Profesion keguruan menuntut guru sentiasa berusaha mempertingkatkan kualiti profesionalisme mereka agar dapat menjadi guru yang kompeten dan berkualiti. Disamping itu, Guru PTV haruslah bersedia mendepani ledakan teknologi dalam revolusi industri 4.0 agar mereka seiring dan sealaran dengan pembelajaran abad ke 21. Maka kerangka TPACK dilihat dapat memenuhi kompetensi yang perlu ada pada guru PTV. Tujuan utama kajian ini adalah untuk melihat faktor yang mempengaruhi kompetensi TPACK guru PTV. Kemudian melihat hubungan peranan pementoran dan persekitaran sekolah dengan kompetensi TPACK guru PTV. Sebanyak 400 guru PTV dari dua kategori institusi beraliran TVET dibawah Kemeterian Pendidikan Malaysia dipilih sebagai sampel kajian iaitu SMK aliran MPV/PVMA dan Kolej Vokasional telah dipilih. Data dianalisis menggunakan analisis ujian-t, korelasi dan regresi linear berganda. Keputusan kajian mendapati terdapat perbezaan signifikan tahap kompetensi pengetahuan teknologi diantara dua kategori sekolah ini. Peranan pementoran juga mempunyai hubungan signifikan positif dengan tahap kompetensi TPACK guru PTV. Manakala persekitaran sekolah meramal perubahan tahap kompetensi TPACK guru PTV di semenanjung Malaysia.*

**KATA KUNCI:** Kompetensi, Peranan pementoran, guru PTV, TPACK, TVET

### 1.0 PENGENALAN

Rancangan Malaysia Kesebelas (2016-2020) telah menghampiri garis penamat. Penghasilan sumber tenaga manusia yang kompeten dan berkemahiran telah diberi perhatian khusus agar dapat memenuhi keperluan tenaga mahir negara. Oleh itu, kompetensi merupakan satu indikator penting kepada prestasi pekerjaan. Namun menurut Boyatzis (1982), kompetensi tidak cukup bagi menggambarkan keberkesanan prestasi seorang pekerja. Keberkesanan prestasi kerja menurut beliau terbina oleh tiga komponen utama iaitu kompetensi individu, kehendak pekerjaan dan persekitaran organisasi. Tiga dimensi ini beliau gambarkan dalam bentuk model keberkesanan prestasi kerja Boyatzis (1982). Justeru, dalam konteks guru PTV, prestasi kerja mereka dapat diukur oleh aspek kompetensi individu sebagai salah satu komponen penting dalam prestasi kerja. Dalam proposal ini, kompetensi guru PTV dan persekitaran kerja menjadi domain utama yang akan dikaji. Peranan guru PTV amat besar dalam menyediakan modal insan berkemahiran tinggi selari dengan kehendak RMK-11 untuk menyediakan 60% pekerja berkemahiran bidang TVET. Disamping itu, bagi mendepani Revolusi Industri 4.0 yang mencakupi penemuan pelbagai teknologi baharu seperti automasi, *Internet of Things* (IoT), analisis dan big data, simulasi, integrasi sistem, penggunaan robotik dan *cloud*, kompetensi guru PTV tidak hanya dapat dilihat dari kerangka lama oleh Shulman (1986) iaitu pengetahuan kandungan dan pedagogi. Kerangka baharu TPACK yang ditambahbaik oleh Koehler & Mishra (2009) dilihat lebih sepadan bagi mendepani revolusi industri 4.0 di mana pengetahuan teknologi dimasukkan ke dalam kerangka kompetensi guru. Kerangka ini dianggap lebih baik

dan komprehensif kerana memasukkan domain pengetahuan teknologi selaras keperluan pembelajaran abad ke-21.

Dua domain utama yang dikaji dalam kertas kerja ini adalah peranan pementoran dan persekitaran kerja dalam konteks kerja guru PTV. Domain ini dijangka mempunyai hubungan yang signifikan dengan kompetensi TPACK guru PTV di dua kategori institusi TVET dibawah seliaan Kementerian Pendidikan Malaysia. Institusi tersebut adalah kolej vokasional (KV) yang diletakkan dibawah kelolaan Bahagian pendidikan Teknik Vokasional (BPTV) dan sekolah menengah kebangsaan (SMK) aliran vokasional di bawah kelolaan Bahagian Sekolah Harian (BSH). Kedua-dua jenis sekolah ini menawarkan mata pelajaran aliran vokasional dan teknikal seperti Mata pelajaran Vokasioanal (MPV) dan Pendidikan Vokasional Menengah Atas (PVMA). Manakala guru PTV yang mengajar di kedua-dua kategori sekolah ini adalah dari skim guru yang sama iaitu skim DG. Maka kajian ini amat penting bagi melihat tahap kompetensi TPACK guru PTV di sekolah berkenaan. Selain itu, dapat dilihat hubungan peranan pementoran dan persekitaran sekolah terhadap kompetensi TPACK guru PTV sekaligus menentukan faktor manakah yang menjadi peramal terbaik kepada kompetensi TPACK guru PTV. Kertas kerja ini menggariskan 3 objektif utama iaitu:

1. Menentukan perbezaan tahap kompetensi TPACK guru PTV di KV dan SMK
2. Menentukan hubungan antara peranan pementoran dan persekitaran sekolah dengan kompetensi TPACK guru PTV
3. Meramal faktor yang mempengaruhi kompetensi TPACK guru PTV

## **2.0 PERANAN PEMENTORAN**

Mentor memainkan peranan yang sangat penting dalam sesuatu proses pementoran. Ia seumpama tunjang atau tulang belakang kepada proses kerja guru PTV. Tanpa mentor yang baik keberkesanan proses pementoran akan terjejas kerana mentor merupakan pusat rujukan utama kepada protégé' mereka dalam apa jua aspek. Sebagai contoh, dalam pementoran praktikum bagi guru pelatih di peringkat IPTA dan IPG, seorang pensyarah dan guru pembimbing akan membimbing guru pelatih dari aspek pengetahuan kandungan subjek, perancangan PdpC sekaligus menerapkan nilai profesionalisme keguruan dengan memainkan peranan mereka sebagai mentor kepada pelatih (Meor Ibrahim & Norziana 2010; Zuria, 2010).

Menurut Hasriani (2008) lagi, bimbingan mentor yang berperanan sebagai pelaksana dasar dalam konteks praktikum guru pelatih, lebih memberi kesan kepada pembentukan kualiti guru khususnya dalam aspek perancangan dan pelaksanaan pengajaran. Oleh itu, dapat dilihat seorang mentor dalam apa jua bidang yang dibimbing memainkan peranan yang sangat signifikan terhadap protégé khususnya serta program dan kompetensi mereka. Dalam aspek kajian ini, bimbingan kerjaya mentor nampak lebih besar peranan kerana subjek teknik dan vokasional berbentuk kemahiran yang amat memerlukan tahap kompetensi yang tinggi. Peranan orang lebih berpengalaman menjadi penting kepada guru yang lebih novis dalam bimbingan mereka. Mentor juga berperanan mewujudkan persekitaran yang kondusif dalam pembelajaran dan seterusnya menerbitkan potensi masing-masing dalam aspek amalan pengajaran (Mahyudin & Mardiah, 2008).

Menurut Lacey (1999) lagi, peranan mentor ditentukan oleh tujuan sesuatu program pementoran tersebut. Ini bermaksud tugas dan peranan seseorang mentor itu ada lah berbeza bagi setiap matlamat program yang berbeza. Tidak semua mentor akan menjadi mentor yang sesuai untuk semua program pementoran. Setiap mentor mempunyai peranan khusus bergantung kepada program pementoran tersebut. Ini kerana memegang peranan sebagai seorang mentor bukanlah suatu tugas yang ringan dan mudah. Ia berbeza dengan tugas seorang pengajar atau fasilitator. Cullingford (2016) menyatakan, peranan seorang mentor itu bukan sahaja kompleks malah melibatkan emosi. Oleh itu, jelas di sini mentor berperanan sangat penting dalam kejayaan matlamat sesuatu program pementoran. Kram (1980, 1985) juga mendapati mentor dan mentee dapat membentuk dan menyubur semangat kekitaan hasil daripada nilai positif yang ditunjukkan antara satu sama lain. Mentor akan menyediakan sokongan dan dorongan manakala mentee pula berusaha ke arah membina kompetensi dan juga menyediakan sokongan dan dorongan bagi pengalaman yang perlu ditawarkan oleh mentor.

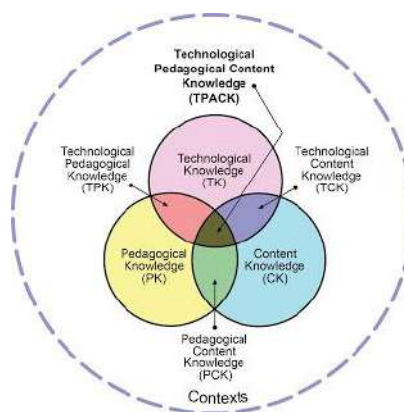
### 3.0 PERSEKITARAN SEKOLAH

Persekitaran kerja atau iklim kerja merupakan antara faktor penting yang mempengaruhi keberkesanan prestasi kerja individu. Ini kerana menurut Rogers et. al. (2012), persekitaran yang menyokong matlamat seseorang dapat meningkatkan potensi mereka untuk mencapai matlamatnya manakala persekitaran yang menghalang akan membawa impak negatif kepada pencapaian matlamat. Justeru dalam konteks guru PTV, persekitaran sekolah menjadi aspek penting yang memberi kesan kepada potensi diri mereka. Konsep persekitaran sekolah telah mula dibincangkan dalam kajian pendidikan sejak beberapa dekad yang lalu malah perbincangannya semakin bertambah mutakhir ini. Malah, gabungan faktor kurikulum, sumber, hasil, kepemimpinan dan persekitaran memberi sumbangan yang besar kepada keberkesanan sekolah (Creemers et. al, 1989). Istilah persekitaran yang mula diperkenalkan oleh Tye (1974) merupakan satu set faktor yang memberi sesebuah sekolah itu suatu personaliti, semangat dan budaya. Rudolf Moos (1974), seorang professor psikiatri dan sains tingkah laku dari University Stanford telah mengelaskan persekitaran sosial dan psikologi ini kepada tiga dimensi. Moos (1979) yakin apa sahaja takrifan persekitaran manusia yang lengkap haruslah mencakupi tiga dimensi ini. Menurut beliau lagi, dimensi ini boleh digunakan untuk menjelaskan persekitaran psikologi dan sosial manusia. Tiga domain atau dimensi tersebut adalah hubungan, pembangunan peribadi dan sistem penyelenggaraan dan perubahan.

### 4.0 KOMPETENSI GURU PTV

Perkataan competence merupakan kata yang berasal dari kata kerja bahasa Latin iaitu competere. Competere pula adalah gabungan dua kata com yang bermaksud bersama-sama dan petere yang bermaksud berjuang. Maka secara literal ia membawa maksud berjuang bersama-sama. Kompetensi merupakan suatu istilah yang sering dikaitkan dengan kebolehan melakukan sesuatu pekerjaan. Definisi yang sering digunakan adalah berbeza-beza mengikut matlamat atau pendekatan yang ingin dicapai dalam sesebuah organisasi bagi melonjakkan pencapaian seseorang pekerja. Ini kerana menurut Sampson & Fytros (2008), tahap kompetensi adalah antara aspek utama dalam pengukuran sesuatu keupayaan tahap pekerjaan. Pernyataan ini selari dengan kenyataan United Nation Industrial Development Organization (2002), iaitu kompetensi merupakan satu set pengetahuan, kemahiran berkaitan dan ciri sifat yang membolehkan seseorang itu menyiapkan tugas dalam satu fungsi khas. kompetensi guru PTV bermaksud keupayaan dalam menguasai pengetahuan, kemahiran dan sikap yang perlu dimiliki oleh guru dalam pengajaran amali di bengkel sekolah aliran vokasional dan kolej Vokasional. Oleh itu, kompetensi guru PTV dilihat menjadi satu elemen yang penting kepada mereka bagi mempersiapkan diri mereka berdepan pelajar dan menyampaikan pengetahuan serta kemahiran yang perlu di bengkel sekolah. Guru merupakan tunjang kepada sistem pendidikan dan merupakan golongan pelaksana segala dasar dan matlamat yang telah ditetapkan oleh pihak kerajaan melalui Kementerian Pelajaran Malaysia. Sehubungan dengan itu program pendidikan guru adalah penting bagi membekalkan mereka guru-guru dengan pengetahuan kemahiran profesional bagi membolehkan mereka mengajar dengan lebih berkesan dan mencapai standard yang diiktiraf profesionalismenya oleh badan profesional dan juga masyarakat umumnya.

Kerangka TPACK merupakan suatu pengetahuan khusus merujuk kepada pengetahuan dan keupayaan untuk mengintegrasikan teknologi berdasarkan strategi pedagogi tertentu dalam menyampaikan pengetahuan kandungan tertentu terutamanya yang melibatkan aplikasi teknologi dalam pengajaran seperti Pendidikan Teknik Vokasional. Ia adalah hasil perkembangan asas kerangka pengetahuan profesional guru yang telah diperkenalkan oleh Shulman (Shulman, 1986, 1987). Menurut Shulman (1986), kompetensi guru terdiri daripada pengetahuan kandungan (*content knowledge*, CK) dan pengetahuan pedagogi, (*pedagogical knowledge*, PK) serta satu dimensi pertindihan antara CK dan PK iaitu pengetahuan kandungan pedagogi (*pedagogical content knowledge*, PCK). TPACK memasukkan dimensi teknologi ke dalam kerangka Shulman menjadi tiga dimensi pengetahuan guru yang lebih komprehensif dan dinamik. Kerangka ini diperkenalkan oleh Koehler dan Mishra (2011)



Rajah 2: Model TPACK – Technological Pedagogical Content Knowledge, sumber Koehler, M. J. (2011)

## 5.0 METODOLOGI

Kajian ini menggunakan pendekatan kuantitatif dengan setiap variable diukur menggunakan instrumen soal selidik tinjauan. Variable bersandar kompetensi TPACK diukur menggunakan skala TPACK survey yang dibangunkan oleh Schmidt et. al (2009). Manakala untuk pemboleh ubah tak bersandar persekitaran sekolah, instrumen diadaptasi dari “school Level Environment Questionnaire” (SLEQ) yang dibangunkan oleh Rentoul dan Fraser (1983). Bagi mengukur sejauh mana peranan pementoran pula, soal selidik yang dibangunkan oleh Dr Jane Fowler (2002) telah digunakan. Sebanyak 400 guru PTV di KV dan SMK dipilih secara rawak berstrata berkadar dari seluruh semenanjung Malaysia. Sampel dibahagikan mengikut empat zon negeri iaitu utara, tengah, timur dan selatan. Pembahagian zon ini menjadikan pungutan data lebih sistematik dan representatif. Soal selidik diedar menggunakan kaedah drop and pick dengan kadar pulangan 97%. Data kemudian melalui proses menggunakan analisis *Statistical Package for Social Science (SPSS) version 25*. Statistik deskriptif dan inferensi digunakan bagi memerihai perbezaan tahap dan perhubungan antara pemboleh ubah bersandar dengan tidak bersandar. Bagi mengukur tahap setiap pemboleh ubah, min dan sisihan piawai digunakan.

## 6.0 KEPUTUSAN DAN PERBINCANGAN

### 6.1 Perbezaan tahap kompetensi TPACK

Berdasarkan keputusan ujian-t pada jadual 1 menunjukkan terdapat perbezaan signifikan ( $p=0.01$   $df=386$ ,  $t=2.56$ ) antara tahap kompetensi TPACK di SMK dengan KV. Walau bagaimanapun, perbandingan menurut dimensi pengetahuan kandungan dan pengetahuan pedagogi tidak menunjukkan perbezaan signifikan antara kedua-dua kategori sekolah. Dapatan ini jelas memberi petunjuk bahawa terdapat perbezaan yang signifikan pada tahap pengetahuan teknologi bagi SMK dan KV. Ini mungkin kerana pendedahan dan kemudahan teknologi di dua kategori sekolah ini berbeza. Menurut Suriyansyah (2019), perbezaan kategori sekolah memberi perbezaan tahap pencapaian berbeza. Perbezaan ini lebih jelas dapat dilihat pada domain pengetahuan teknologi yang memberi keputusan signifikan ( $p=0.00$   $df=386$ ,  $t=3.98$ ) berbanding pengetahuan kandungan dan pedagogi yang tidak mencapai aras signifikan. Ini menunjukkan bahawa tahap pengetahuan teknologi guru di KV adalah berbeza dengan SMK.

Jadual 1. Analisis Ujian-t Perbezaan Tahap kompetensi

	Jenis Institusi	N	Min	SP	t	df	Sig. P
Pengetahuan	KV	201	3.82	.449	3.984	386	.000
Teknologi	SMK	187	3.64	.398			
Pengetahuan	KV	201	3.96	.436	1.774	386	.077
Kandungan	SMK	187	3.88	.443			
Pengetahuan	KV	201	3.99	.417	1.107	386	.269
Pedagogi	SMK	187	3.95	.409			
KOMPETENSI	KV	201	3.92	.395	2.563	386	.011
TPACK GURU	SMK	187	3.82	.366			

\*\*p < 0.05

## 6.2 Hubungan Antara Peranan Pementoran dan Persekitaran Sekolah Dengan Kompetensi Guru

Jadual 2 menunjukkan hubungan antara peranan pementoran dan persekitaran sekolah dengan kompetensi TPACK guru PTV mengikut dimensi. Dimensi bagi peranan pementoran adalah a) sokongan kerjaya b) sokongan psikososial c) suri teladan. Manakala dimensi persekitaran sekolah pula terdiri daripada a) perhubungan warga b) pembangunan peribadi c) sistem selenggara dan perubahan. Kolerasi *Pearson* menunjukkan terdapat hubungan positif yang kuat dan signifikan antara peranan pementoran dan persekitaran sekolah dengan kompetensi TPACK guru PTV. Masing-masing dengan memperoleh nilai  $r = .502$  (peranan pementoran dan  $r = .677$  (persekitaran sekolah) pada aras signifikan  $p < 0.01$ . Berdasarkan analisis, dapat dilihat persekitaran sekolah mempunyai hubungan lebih kuat berbanding peranan pementoran begitu juga mengikut pecahan dimensi setiap pemboleh ubah. Namun kedua-dua mempunyai hubungan yang kuat dengan kompetensi TPACK guru PTV. Ini selaras dengan kajian sebelum ini berkaitan hubungan peranan pementoran dan persekitaran sekolah dengan kompetensi. Ini kerana fokus pementoran adalah mempunyai matlamat yang luas termasuk pembangunan kemahiran dan kompetensi, sokongan psikososial dan sosial emosi, dan pembangunan kerjaya (Haggard et al., 2011; Jacobi, 1991; Kram, 1985). Dapatan ini juga selarian dengan kajian Ross (2019) keatas pelatih jururawat menunjukkan pementoran rakan sebaya meningkatkan kompetensi mereka. Selain itu juga, Čiučiulienė (2019) dalam kajian kualitatif beliau keatas 10 guru pelatih mendapati pementoran berperanan meningkat kompetensi pedagogi dan didaktik atau kesungguhan untuk mengajar.

Manakala dapatan signifikan hubungan persekitaran sekolah dengan kompetensi TPACK guru PTV selari dengan kajian terkini berkaitan persekitaran sekolah dan pembelajaran dengan pencapaian dan kompetensi. Kajian terkini oleh Mallari (2018) mendapati kajian keatas pelajar kejuruteraan tahun kedua terdapat hubungan signifikan anatara persekitaran pembelajaran dengan pencapaian matematik pelajar. Ini selaras dengan dapatan Suriyansyah (2019) yang menunjukkan persekitaran sekolah mempunyai hubungan signifikan dengan kepuasan kerja guru sekaligus meingkatkan prestasi guru.

Jadual 2. Korelasi anatara Dimensi Peranan Pementoran dan Persekitaran sekolah dengan Kompetensi TPACK Guru PTV

	Kompetensi Guru	
	r	Sig. P
Peranan Pementoran	.502**	.000
Persekitaran Sekolah	.677**	.000

\*\* p < 0.01

## 6.3 Faktor Peramal / Pengaruh

Jadual 3 menunjukkan ringkasan ujian analisis regrasi pelbagai kaedah *enter* untuk peranan pementoran dan persekitaran sekolah bagi meramal kompetensi TPACK guru PTV. Dapatan menunjukkan secara signifikan dua pemboleh ubah peramal iatu peranan pementoran ( $\beta = .209$ ,  $p < 0.05$ ) dan persekitaran sekolah ( $\beta = .570$ ,  $p < 0.05$ ) merupakan faktor peramal kepada kompetensi TPACK guru PTV. Kedua-dua faktor ini secara signifikan menyumbang sebanyak 49% perubahan varians dalam kompetensi TPACK guru PTV [ $F(2, 385) = 185.169$ ; Sig.  $F = 0.000$ ]. oleh itu, dapat dikenalpasti bahawa perubahan tahap kompetensi TPACK guru PTV dipengaruhi sebanyak 49% oleh faktor peranan pementoran dan persekitaran sekolah. Manakala 51% lagi diterangkan oleh faktor dari pemboleh ubah lain yang tidak dikaji dalam kajian ini.

Dapatan ini selaras dengan kajian sebelum ini oleh Hrimch & Tasse (2003) ada menjelaskan bahawa pemindahan pembelajaran boleh dipengaruhi oleh banyak faktor yang boleh memudahkan atau menghalang daripada ianya berlangsung. Antaranya faktor berkaitan kerja dan persekitaran yang menyumbang kepada proses pemindahan pembelajaran. Faktor berkaitan kerja ialah keperluan pekerjaan, masa bagi peluang, norma-norma dan desakan golongan, persamaan konteks, sokongan penyeliaan dan gangguan daripada kerja. Faktor berkaitan organisasi pula adalah satu sistem ganjaran seperti satu cara pengukuhan positif atau budaya organisasi seperti peranan pementoran dan suasana pekerjaan. Maka faktor persekitaran dan peranan pementoran menjadi antara faktor yang mempengaruhi kompetensi TPACK guru PTV.

Jadual 3. Ringkasan Analisis Regresi Pelbagai untuk Peranan Pementoran dan Persekitaran Sekolah Meramal Kompetensi TPACK Guru PTV

	B	Std. Error	Beta	t	Sig.
(Constant)	1.213	.139		8.713	.000
Peranan Pementoran	.141	.029	.209	4.918	.000
Persekitaran Sekolah	.555	.041	.570	13.420	.000
$R^2 = 0.490$ ; $F(2, 385) = 185.169$ ; Sig. $F = 0.000$					

## 7.0 KESIMPULAN DAN CADANGAN

Secara keseluruhan, pementoran dan persekitaran sekolah mempunyai hubungan yang signifikan dan berperanan mempengaruhi kompetensi TPACK guru PTV. Oleh yang demikian, pementoran dan persekitaran sekolah merupakan faktor penting yang perlu diberi perhatian oleh pihak kementerian, institusi pendidikan guru dan juga guru PTV itu sendiri dalam memastikan kompetensi secara am dan kompetensi TPACK secara khususnya dapat dipertingkatkan. Penekanan terhadap program pementoran dalam kalangan guru PTV terutamanya antara guru berpengalaman dan novis harus diberi penekanan dalam bentuk yang sistematik agar kesan dapat dilihat dengan lebih jelas pada kompetensi guru PTV. Begitu juga aspek persekitaran sekolah harus diberi penekanan oleh pihak kementerian dan juga pentadbir sekolah kerana peranan persekitaran sekolah adalah besar kepada kompetensi guru PTV terutamanya kompetensi TPACK kerana kemudahan seperti bahan bantu mengajar berbentuk teknologi dan sokongan pentadbir amat penting dalam meningkatkan keberkesanan dan prestasi guru PTV. Pihak penggubal dasar TVET juga harus proaktif dan berterusan menyediakan guru dengan program kejurulatihan guru PTV bagi peningkatan prestasi mereka seterusnya mendokong proses pembelajaran sepanjang hayat.

## 8.0 PENGHARGAAN

Pengkaji ingin menyatakan setinggi-tinggi penghargaan kepada Kementerian Pendidikan Malaysia (KPM) dan Universiti Putra Malaysia (UPM) kerana membiayai kajian melalui Geran Putra (GP/2018/9636700) untuk Geran Universiti Penyelidikan (RUG).

## RUJUKAN

- Boyatzis, R. E. (1982). *The competent manager: A model for effective performance*. John Wiley & Sons.
- Cremers, B., Peters, T. and Reynolds, D.(eds.)(1989). *School effectiveness and school improvement*. Lisse, The Netherlands: Swets and Seitlinger.
- Cullingford, C. (2016). *Mentoring in education: An international perspective*. Routledge.
- Čiučiulienė, N., & Mičiulienė, R. (2019, May). Mentoring styles and their contribution to pedagogical and didactic competence development. In *Proceedings of the International Scientific Conference. Volume I* (Vol. 131, p. 143)
- Rogers, D. S., Duraipappah, A. K., Antons, D. C., Munoz, P., Bai, X., Fragkias, M., & Gutscher, H. (2012). A vision for human well-being: transition to social sustainability. *Current Opinion in Environmental Sustainability*, 4(1), 61-73.

- Haggard, D. L., Dougherty, T. W., Turban, D. B., & Wilbanks, J. E. (2011). Who is a mentor? A review of evolving definitions and implications for research. *Journal of Management*, 37, 280- 304. doi:10.1177/0149206310386227
- Hasriani, A., (2008). *Faktor-faktor yang mempengaruhi keyakinan guru pelatih semasa menjalani latihan mengajar*(Doctoral dissertation, Universiti Teknologi Malaysia).
- Tasse, A., & Hrimech, M. (2003). Increasing learning transfer amongst newly trained employees: The role of the supervisor. *Proceedings of The Changing Face of Work and Learning*.
- Jacobi, M. (1991). Mentoring and undergraduate academic success: A literature review. *Review of Educational Research*, 61, 505-532.
- Koehler, M., & Mishra, P. (2009). What is technological pedagogical content knowledge (TPACK)? *Contemporary issues in technology and teacher education*, 9(1), 60-70.
- Kram, K. E. (1980). Mentoring processes at work: Developmental relationships in managerial careers. *Dissertation Abstracts International*, 41, 05B (UMI No. 8025206).
- Kram, K. E. (1985). *Mentoring at work: Developmental relationships in organizational life*. Glenview, Illinois: Scott, Foresman and Company.
- Lacey, K. (1999). *Making mentoring happen: A simple and effective guide to implementing a successful mentoring program*. Allen & Unwin.
- Mahyuddin Arsat & Mardiyah Jamaluddin. (2008). Tahap kepuasan guru-guru pelatih terhadap guru-guru pembimbing semasa menjalani latihan mengajar. *Fakulti Pendidikan. Universiti Teknologi Malaysia*.
- Mallari, E. G. A., Monsalud, E. J. A. B., Corpuz, E. S. G., Bernardo, E. M. A. U., & Bueno, D. C. (2018). CORRELATES OF LEARNING ENVIRONMENT AND MATHEMATICS PERFORMANCE OF ENGINEERING STUDENTS.
- Meor Ibrahim Kamaruddin & Norziana Anuar. (2010). Tinjauan terhadap tahap penyeliaan guru pembimbing terhadap guru pelatih semasa menjalani latihan mengajar, *Fakulti Pendidikan, Universiti Teknologi Malaysia*.
- Moos, R. H. (1973). Conceptualizations of human environments. *American Psychologist*, 28(8), 652-665
- Moos, R. H. (1979). *Evaluating educational environments*. San Francisco: Jossey-Bass.
- Ross, J. G. (2019). Repetitive Practice With Peer Mentoring to Foster Skill Competence and Retention in Baccalaureate Nursing Students. *Nursing Education Perspectives*, 40(1), 48–49. doi: 10.1097/01.NEP.0000000000000358.
- Sampson D., Fytros D. (2008) *Competence Models in Technology-Enhanced Competence-Based Learning*. In: Adelsberger H.H., Kinshuk, Pawlowski J.M., Sampson D.G. (eds) *Handbook on Information Technologies for Education and Training*. International Handbooks on Information Systems. Springer, Berlin, Heidelberg
- Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational researcher*, 15(2), 4-14.
- Suriansyah, A., & Aslamiah, A. (2019). Similarity-Teacher's Job Satisfaction On Elementary School: Relation To Learning Environment.
- Tye, K.A. (1974). The culture of the school. In Goodlad, J.I., Klein, M.F., Novotney, J.M. and Tye, K.A. (eds.) *Toward a mankind school: An Adventure in Humanistic Education*. New York: McGraw-Hill.

## Hubungan Antara Penguasaan Konsep Dengan Kemahiran Berfikir Aras Tinggi (KBAT) Murid Tingkatan Empat Prinsip Perakaunan

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### ABSTRAK

*Kemahiran berfikir aras tinggi (KBAT) merupakan satu elemen penting yang perlu diberikan penekanan dan dipupuk dalam kalangan murid terutamanya dalam abad ke-21 ini. Ini bertujuan agar generasi muda yang dihasilkan oleh negara adalah yang mempunyai minda kelas pertama, kompetitif dan sekali gus mampu mendapat tempat di peringkat antarabangsa. Kemahiran ini juga merupakan salah satu daripada enam aspirasi murid yang difokuskan dalam Pelan Pembangunan Pendidikan Malaysia. Tujuan kajian ini dijalankan adalah untuk mengenal pasti hubungan antara penguasaan konsep dengan kemahiran berfikir aras tinggi (KBAT) murid Tingkatan Empat Prinsip Perakaunan. Seramai 68 orang murid Tingkatan Empat yang mengambil elektif mata pelajaran Prinsip Perakaunan telah terlibat dalam kajian rintis ini. Responden yang terlibat telah dipilih secara rawak daripada empat buah sekolah dalam tiga daerah yang berbeza di Negeri Selangor iaitu daerah Hulu Langat, daerah Petaling Perdana dan daerah Kuala Langat. Reka bentuk kajian ini merupakan kajian korelasi. Dua instrumen telah digunakan iaitu instrumen soal selidik dan ujian pencapaian. Semua data yang diperolehi dianalisis menggunakan perisian Statistical Package for Social Science (SPSS) versi 23. Hasil analisis dapatan kajian rintis memperlihatkan terdapat perkaitan yang signifikan di antara penguasaan konsep dengan kemahiran berfikir aras tinggi (KBAT). Ini bermakna murid yang dapat menguasai konsep akan dapat menguasai kemahiran berfikir aras tinggi (KBAT) dengan baik.*

**KATA KUNCI:** Kemahiran berfikir aras tinggi (KBAT), penguasaan konsep, Prinsip Perakaunan

### 1.0 PENGENALAN

Peningkatan ekonomi dan pembangunan sesebuah negara mempunyai perkaitan yang amat rapat dengan sistem pendidikan yang diamalkan. Sistem pendidikan merupakan tunggak utama dalam membentuk generasi muda yang berkualiti dan kompetitif sekaligus mampu mendapat tempat di pasaran global. Menurut Amabile dan Mueller (2008) dan Swartz (2010), institusi pendidikan merupakan tempat yang sangat penting untuk mengembangkan bakat dan kebolehan pemikiran kritis dan kreatif murid. Dalam usaha meningkatkan imej negara, pelbagai transformasi telah dilaksanakan oleh kerajaan. Salah satu perubahan yang dibuat oleh kerajaan adalah dengan memperkenalkan Pelan Pembangunan Pendidikan Malaysia (2013-2025) dengan menggariskan enam aspirasi murid. Enam aspirasi murid yang diberi penekanan adalah meliputi kemahiran berfikir, pengetahuan, kemahiran dwibahasa, kemahiran memimpin, etika dan kerohanian dan akhir sekali identiti nasional (Kementerian Pendidikan Malaysia, 2013).

Kemahiran berfikir merupakan salah satu aspek penting yang perlu diterapkan dan dipupuk dalam kalangan murid terutamanya pada abad ke-21 ini. Keupayaan penguasaan kemahiran berfikir dengan baik mampu melahirkan murid yang lebih kreatif dan berinovatif (Bahagian Pembangunan Kurikulum, 2014). Menyedari kepentingan kemahiran berfikir dalam zaman teknologi ini, maka penerapan kemahiran berfikir aras tinggi (KBAT) ini telah diberi perhatian dan penekanan khususnya dalam kurikulum dan strategi pengajaran pada peringkat global (Lai, 2011; Reeves, Redford & Mc Queen, 2010). Kesungguhan Kementerian Pendidikan Malaysia dalam memastikan elemen kemahiran berfikir aras tinggi (KBAT) ini diberikan penekanan jelas dapat dilihat terutamanya apabila soalan-soalan KBAT telah dimasukkan dalam peperiksaan awam meliputi Pentaksiran Tingkatan 3 (PT3) dan Sijil Pelajaran Malaysia (SPM) bermula



tahun 2014. Peratusan soalan KBAT yang dimasukkan dalam kertas peperiksaan awam telah meningkat setiap tahun.

Seiringan dengan transformasi yang dilaksanakan oleh kerajaan dalam meningkatkan kemahiran berfikir aras tinggi (KBAT) dalam kalangan murid ini, perubahan dalam kurikulum mata pelajaran Prinsip Perakaunan turut dapat dilihat. Pada tahun 2017, Kementerian Pelajaran Malaysia (KPM) telah memperkenalkan Kurikulum Standard Sekolah Menengah (KSSM) untuk menggantikan Kurikulum Baru Sekolah Menengah (KBSM). KSSM diperkenalkan dengan hasrat dapat menghasilkan murid yang lebih kreatif, kritis dan inovatif. Penambahbaikan dari segi kurikulum agar lebih holistik dan relevan selari dengan keperluan masa kini telah dilakukan. Salah satu perubahan yang dilakukan adalah ke atas pedagogi di mana pendekatan pengajaran dan pembelajaran yang berteraskan KBAT turut diberikan penekanan. Merujuk kepada Dokumen Standard Kurikulum dan Pentaksiran (DSKP) Prinsip Perakaunan, Bahagian Pembangunan Kurikulum (2016), KBAT meliputi kemahiran murid untuk berfikir secara kritis dan kreatif dengan pelbagai strategi penaakulan. Kemahiran ini juga telah dinyatakan secara jelas dalam kurikulum Prinsip Perakaunan (Bahagian Pembangunan Kurikulum, 2016). Penerapan KBAT dalam Prinsip Perakaunan jelas boleh dilihat dalam DSKP iaitu pada tahap penguasaan tiga hingga enam pada setiap modul yang berfokus kepada empat tahap pemikiran aras tinggi iaitu mengaplikasi, menganalisis, menilai dan mencipta seperti dalam hierarki Taksonomi Bloom semakan Anderson (Anderson, Krathwohl & Airasian, 2001). Rentetan daripada itu, pembangunan kurikulum dalam mata pelajaran Prinsip Perakaunan turut dihasratkan agar dapat menyediakan murid yang menyeluruh dan seimbang, di samping mempunyai akhlak yang mulia, kritis, kreatif, inovatif serta dapat mengamalkan budaya profesional bagi menghadapi cabaran abad ke-21.

Kemahiran berfikir aras tinggi (KBAT) adalah satu proses yang dapat diajar dan belajar. Menurut Zarina (2016), semua kemahiran perlu diterapkan secara sistematik. Kemahiran berfikir tidak akan wujud secara semula jadi apabila usia seseorang semakin meningkat (Rajendran, 2008). Terdapat banyak faktor yang dapat menyumbang kepada penguasaan KBAT dalam kalangan murid. Ia meliputi faktor murid, guru, suasana pembelajaran, teknik penyoalan dan bahan rujukan (Bahagian Pembangunan Kurikulum, 2014). Penguasaan konsep terutamanya konsep asas merupakan aspek penting dalam proses pembelajaran (Bayrak, 2013; Dewi, Suryadarma & Wilujeng, 2018; Puteri, Rahman & Priyandoko, 2017). Justeru itu, dalam proses pembelajaran khususnya penerapan kemahiran berfikir, murid perlu terlebih dahulu menguasai konsep asas sesuatu mata pelajaran supaya proses pembelajaran akan menjadi lebih berkesan. Mohd Salleh Abu (1991) dalam Azizi dan Elanggovan (2012) dalam kajiannya yang berkaitan mata pelajaran Matematik, turut setuju bahawa penguasaan konsep penting dalam proses pemahaman dalam sesuatu mata pelajaran pengiraan. Murid yang tidak berupaya menguasai konsep dan kemahiran Matematik akan menghadapi masalah dalam proses pemahaman dalam Matematik. Lantaran itu, apabila murid gagal menguasai konsep, maka murid akan menganggap mata pelajaran itu susah.

## **2.0 PERNYATAAN MASALAH**

Hasrat kerajaan untuk melahirkan dan membangunkan modal insan yang mampu memacu masa depan negara amatlah ditagih dalam sistem Pendidikan abad ke-21. Usaha untuk menjadikan negara salah sebuah negara maju memerlukan generasi rakyat Malaysia yang mempunyai minda kelas pertama dan mampu menguasai KBAT (Lembaga Peperiksaan, 2015). Isu penguasaan murid terhadap KBAT sering kali diperdebatkan oleh para sarjana dan ilmunan di pelbagai peringkat. Masing-masing berusaha mencari penyelesaian untuk memenuhi apa yang dihasratkan oleh negara. Namun begitu, berdasarkan analisis prestasi Sijil Pelajaran Malaysia (SPM) oleh Lembaga Peperiksaan bagi mata pelajaran Prinsip Perakaunan dari tahun 2014 hingga 2018 menunjukkan keputusan yang diperolehi masih lagi tidak tekak di mana berlaku kenaikan dan penurunan setiap tahun. Gred purata mata pelajaran nasional (GPMPN) yang diperolehi juga masih mencatatkan nilai yang tinggi iaitu masing-masing 4.64, 4.36, 4.52. pada tahun 2014 hingga 2016 (Lembaga Peperiksaan Malaysia, 2019). Pada tahun 2018 keputusan SPM bagi mata pelajaran Prinsip Perakaunan memperlihatkan gred purata mata pelajaran nasional (GPMPN) yang tinggi iaitu sebanyak 4.36 berbanding 4.29 pada tahun 2017 (Kementerian Pendidikan Malaysia, 2019). Sementara itu, berdasarkan laporan pengumuman analisis keputusan SPM tahun 2017 dan 2018 juga memperlihatkan penguasaan murid dalam menjawab soalan KBAT juga menurun pada tahun 2018 iaitu sebanyak 61.1% berbanding 66% pada tahun 2017 (Kementerian Pendidikan Malaysia, 2018). Hasil analisis keputusan SPM 2018 menunjukkan, hanya 54.3% murid dapat menguasai aras mengaplikasi, 56.9% aras

menganalisis, 70.1% aras menilai dan 63.2% aras mencipta (Kementerian Pendidikan Malaysia, 2019). Senario ini menunjukkan isu tahap penguasaan kemahiran berfikir aras tinggi (KBAT) dalam kalangan murid Prinsip Perakaunan perlu diberikan perhatian.

Mata pelajaran Prinsip Perakaunan sememangnya merupakan satu subjek yang banyak memerlukan kemahiran berfikir. Mata pelajaran ini bukan sahaja mendedahkan murid tentang proses merekod atau mencatat urus niaga berdasarkan tatacara debit dan kredit, bahkan ia menekankan konsep, prinsip dan kaedah perakaunan. Berdasarkan urus niaga, murid perlu menguasai kemahiran merekod, mengelas, membuat pertimbangan, menganalisis dan membuat rumusan serta membuat keputusan (Bahagian Pembangunan Kurikulum, 2016). Justeru itu, jelas menunjukkan dalam proses pembelajaran Prinsip Perakaunan murid perlu memahami konsep di samping berupaya mengaplikasikan pengetahuan dalam situasi yang berbeza-beza khususnya semasa peperiksaan dan kehidupan sebenar. Kemahiran berfikir ini amat diperlukan dalam proses membentuk perkembangan kognitif murid dari aspek pencapaian motivasi, penyelesaian masalah, persepsi dan kemahiran sosial (Burger 2010). Justeru itu, aspek penguasaan konsep dan KBAT ini perlulah diberi perhatian dan ditekankan dalam proses pengajaran dan pembelajaran terutamanya dalam mata pelajaran Prinsip Perakaunan.

Kebimbangan mengenai pencapaian murid-murid dalam penguasaan KBAT menjadi tumpuan utama dalam kajian-kajian ilmiah di Malaysia. Para sarjana dan ilmuan telah menjalankan banyak kajian mengenai isu KBAT ini sama ada di peringkat sekolah mahupun institusi pengajian tinggi (IPT). Berdasarkan pembacaan pengkaji, didapati ramai pengkaji lepas telah mengkaji tentang tahap KBAT murid, faktor-faktor yang dapat mempengaruhi peningkatan penguasaan KBAT murid dan cabaran yang dihadapi oleh para guru sepanjang pelaksanaan KBAT dalam pelbagai subjek. Keputusan kajian lalu memperlihatkan tahap KBAT dalam kalangan murid masih lagi perlu diperbincangkan. Hasil kajian Wan Norehan (2013) dalam mata pelajaran Kejuruteraan, Chew dan Zul (2018) dalam mata pelajaran Bahasa Melayu, Nurashikin (2015) dalam mata pelajaran Biologi telah menunjukkan tahap KBAT murid berada pada tahap yang sederhana dan memuaskan. Manakala kajian Arni Yuzie dan Ruhizan (2015) pula mendapati KBAT murid Sains masih di tahap sederhana dan pada domain kognitif aplikasi. Chew (2017); Gulistan, Saedah, Abu Bakar dan Omed (2015) pula mendapati tahap KBAT murid masih berada pada tahap yang lemah. Manakala bagi kajian yang berkaitan faktor yang mempengaruhi penguasaan KBAT pula, didapati terdapat pengkaji yang mengkaji tentang faktor murid seperti gaya pembelajaran dan motivasi murid (Yee et. al, 2015; Tan & Siti Hajar, 2015). Sementara itu, Nooriza dan Effandi (2015); Tan dan Siti Hajar (2015), pula telah mengkaji tentang faktor guru seperti kesediaan guru dan sikap guru. Namun begitu, berdasarkan pembacaan pengkaji, didapati masih tidak banyak kajian yang dijalankan berkaitan KBAT dalam mata pelajaran Prinsip Perakaunan. Justeru itu, kajian ini dijalankan dengan matlamat untuk meninjau hubungan antara penguasaan konsep dengan kemahiran berfikir aras tinggi (KBAT) dalam kalangan murid Tingkatan Empat Prinsip Perakaunan.

### **3.0 OBJEKTIF KAJIAN**

Objektif kajian ini adalah untuk mengenalpasti hubungkait antara penguasaan konsep dengan kemahiran berfikir aras tinggi (KBAT) dalam kalangan murid Tingkatan Empat Prinsip Perakaunan.

## **4.0 METODOLOGI**

### **4.1 Reka Bentuk Kajian**

Kajian ini adalah merupakan satu kajian kuantitatif. Reka bentuk kajian korelasi telah dipilih untuk melihat perkaitan antara penguasaan konsep dengan kemahiran berfikir aras tinggi (KBAT) dalam kalangan murid Prinsip Perakaunan Tingkatan Empat. Kajian ini melibatkan kaedah tinjauan yang menggunakan instrumen soal selidik dan ujian pencapaian untuk memungut data bagi menentukan hubungan antara pemboleh ubah telah digunakan. Menurut Gay dan Airasian (2003), kaedah ini sesuai dipilih kerana melibatkan bilangan sampel yang besar dan berada di merata tempat. Instrumen soal selidik dan ujian pencapaian telah digunakan dalam kajian ini. Kedua-dua instrumen ini diedarkan kepada murid-murid secara rawak mudah. Bagi tujuan mencari perkaitan antara setiap pemboleh ubah, *Perisian Statistical Package for the Social Sciences* (SPSS) versi 23 telah digunakan dalam proses penganalisan data.

## 4.2 Sampel dan Lokasi Kajian

Cooper dan Schindler (2011) mencadangkan, jumlah responden yang sesuai dilibatkan dalam kajian rintis adalah antara 25 hingga 100 orang. Manakala berdasarkan cadangan Johanson dan Brooks (2010) pula, bagi tujuan untuk kajian awal atau pembangunan skala, jumlah minimum responden yang sesuai dalam kajian rintis adalah seramai 30 orang. Seterusnya, Chua (2006) pula menyarankan dalam kajian rintis, seramai 20 hingga 40 individu yang terdiri daripada latar belakang demografi yang sama dengan responden kajian sebenar sesuai dilibatkan. Berdasarkan cadangan-cadangan yang diberikan, seramai 68 orang murid Tingkatan Empat yang mengambil elektif mata pelajaran Prinsip Perakaunan di Negeri Selangor telah dipilih secara persampelan rawak mudah. Kesemua murid ini telah dipilih secara rawak daripada empat buah sekolah dalam tiga daerah yang berbeza dalam Negeri Selangor iaitu daerah Hulu Langat, Petaling Perdana dan daerah Kuala Langat. Pengkaji memilih Negeri Selangor sebagai negeri untuk dibuat kajian rintis kerana negeri ini terletak dalam zon tengah dan mempunyai bilangan murid yang paling ramai. Analisis data ini diperolehi daripada Bahagian Perancangan dan Penyelidikan Dasar Pendidikan (EPRD), KPM pada 16 Julai 2019. Di samping itu, dengan memilih negeri Selangor, ini membolehkan pengkaji turun padang ke lokasi sebenar dan mengendalikannya sendiri dengan bantuan guru mata pelajaran di sekolah yang terpilih. Secara tidak langsung, ia dapat membantu pengkaji mengenal pasti masalah-masalah yang mungkin berlaku sepanjang kajian dan seterusnya memberikan informasi kepada pengkaji tentang tempoh masa yang digunakan oleh responden untuk menjawab semua item dalam ujian pencapaian dengan lebih tepat.

## 4.3 Instrumen Kajian

Dalam proses mengumpulkan data, dua instrumen telah digunakan iaitu set soal selidik dan ujian pencapaian. Set soal selidik dilibatkan untuk tujuan mengumpul maklumat latar belakang demografi responden seperti nama, kelas, sekolah, jantina dan bangsa serta gred pencapaian mata pelajaran semasa PT3. Manakala untuk mengukur penguasaan konsep dan KBAT pula, satu set ujian pencapaian telah digunakan. Set soalan ujian pencapaian ini telah dibina oleh pengkaji berpanduan Dokumen Standard Kurikulum dan Pentaksiran (DSKP) Prinsip Perakaunan Tingkatan Empat dan jadual spesifikasi ujian (JSU). Soalan ujian pencapaian ini telah mendapat pengesahan daripada lima orang pakar sebelum digunakan. Set ujian pencapaian ini terbahagi kepada dua bahagian iaitu bahagian A untuk mengukur penguasaan konsep dan bahagian B untuk mengukur kemahiran berfikir aras tinggi (KBAT). Bahagian A terdiri daripada 10 soalan objektif penguasaan konsep dan bahagian B terdiri daripada 12 soalan objektif dan 3 soalan subjektif soalan kemahiran berfikir aras tinggi (KBAT). Sebanyak 22 soalan berbentuk objektif aneka pilihan dan hanya tiga soalan berbentuk subjektif digunakan dalam kajian ini. Tajuk yang difokuskan dalam bahagian A adalah Sistem Catatan Bergu. Tajuk ini dipilih kerana penguasaan konsep terutamanya sistem catatan bergu akan menjadi asas kepada proses pembelajaran perakaunan secara keseluruhan (Nur Hani, 2003). Manakala bahagian B yang mengukur kemahiran berfikir aras tinggi (KBAT) pula, tajuk yang menjadi fokus adalah Klasifikasi Akaun dan Persamaan Perakaunan. Soalan-soalan dalam bahagian B meliputi konstruk mengaplikasi, menganalisis, menilai dan mencipta. Rumusan instrumen ujian pencapaian kajian ditunjukkan seperti dalam jadual 1.

Jadual 1. Rumusan Instrumen Ujian Pencapaian Kajian

Bahagian	Bilangan Item Mengikut Konstruk					Bil. Item
	Mengingat & Memahami	Mengaplikasi	Menganalisis	Menilai	Mencipta	
A	5	2	1	2	-	10
B	-	4	4	4	3	15

## 5.0 DAPATAN KAJIAN

### 5.1 Demografi Murid

Seramai 68 orang murid Tingkatan Empat Prinsip Perakaunan daripada empat buah sekolah dalam Negeri Selangor telah terlibat sebagai responden dalam kajian rintis ini seperti yang tertera pada jadual 2.

Jadual 2. Taburan Profil Responden

Demografi		Bilangan (f)	Peratus (%)
<i>Jantina</i>	Lelaki	24	35.3
	Perempuan	44	64.7
<b>Jumlah</b>		<b>68</b>	<b>100</b>
<i>Bangsa</i>	Melayu	36	52.9
	Cina	23	33.8
	India	7	10.3
	Lain-lain	2	2.9
<b>Jumlah</b>		<b>68</b>	<b>100</b>

Jadual 2 memperlihatkan taburan profil responden kajian berdasarkan jantina dan bangsa. Seramai 24 orang responden murid lelaki iaitu 35.3% dan 44 orang responden murid perempuan iaitu 64.7% telah terlibat dalam kajian rintis ini. Ini menunjukkan peserta kajian perempuan adalah melebihi peserta kajian lelaki. Manakala dari segi bangsa pula, majoriti responden iaitu seramai 36 orang (52.9%) adalah terdiri daripada bangsa Melayu, manakala 23 orang (33.8%) berbangsa Cina diikuti tujuh orang (10.3%) berketurunan India dan hanya dua orang responden (2.9%) adalah berbangsa lain-lain.

## 5.2 Hubungan Antara Penguasaan Konsep Dengan Kemahiran Berfikir Aras Tinggi (KBAT)

Analisis ujian korelasi pearson telah digunakan untuk melihat perkaitan di antara penguasaan konsep dengan kemahiran berfikir aras tinggi (KBAT) murid Tingkatan Empat Prinsip Perakaunan. Jadual 3 menunjukkan dapatan analisis tersebut.

Jadual 3. Hubungan Antara Penguasaan Konsep Dengan Kemahiran Berfikir Aras Tinggi (KBAT) Murid Tingkatan Empat dalam Mata Pelajaran Prinsip Perakaunan

Pemboleh Ubah	Min	Sisihan Piawai	Nilai r	Signifikan (p)	Interpretasi Hubungan
Penguasaan Konsep	2.83	.86	.341**	.004	Sederhana
KBAT	1.60	.17			

\*\*Korelasi adalah signifikan pada aras 0.01

Analisis dapatan kajian rintis ini memperlihatkan terdapat hubungan yang signifikan antara penguasaan konsep dan kemahiran berfikir aras tinggi (KBAT) murid [ $r(68) = .341^{**}$ ;  $p = .004 < 0.05$ ]. Hasil analisis menunjukkan hubungan ini adalah hubungan signifikan positif. Merujuk kepada Davis (1971), nilai pekali pearson  $r = .341$  menunjukkan terdapat hubungan yang signifikan positif pada tahap sederhana antara penguasaan konsep dan kemahiran berfikir aras tinggi (KBAT) murid Tingkatan Empat Prinsip Perakaunan. Ini memberikan interpretasi bahawa semakin tinggi tahap penguasaan konsep murid, maka semakin tinggi tahap penguasaan murid terhadap kemahiran berfikir aras tinggi (KBAT).

## 6.0 PERBINCANGAN

Hasil kajian rintis ini telah memperlihatkan bahawa terdapat perkaitan positif yang sederhana antara penguasaan konsep dengan kemahiran berfikir aras tinggi (KBAT) murid Prinsip Perakaunan. Ini menunjukkan bahawa penguasaan konsep yang baik dapat mempengaruhi tahap kemahiran berfikir aras tinggi (KBAT) murid. Apabila murid dapat menguasai konsep asas, maka ia dapat membantu murid menguasai kemahiran berfikir aras tinggi (KBAT). Hasil dapatan kajian ini adalah selari dengan pernyataan yang dinyatakan oleh Nur Hani (2003) dalam kajiannya bahawa, penguasaan konsep asas murid dalam perakaunan terutamanya bagi tajuk sistem catatan bergu amat penting. Ia akan menjadi asas kepada proses pembelajaran perakaunan secara keseluruhan. Penguasaan konsep asas yang baik dapat membolehkan murid mempelajari tentang selok belok perakaunan dengan lebih lanjut (Nur Hani, 2003). Dapatan ini juga disokong oleh kenyataan Junaidah, Norlaila, Mohamad, Faizan dan Syazwani (2016) yang menyatakan kegagalan murid untuk memahami logik di sebalik catatan debit dan kredit boleh menyebabkan murid lebih cenderung menghafal dan sukar memahami topik-topik yang berikutnya. Justeru itu, kefahaman dan

penguasaan sistem catatan bergu menjadi kunci utama kepada proses pembelajaran perakaunan secara keseluruhan.

Penguasaan konsep yang baik harus bermula dari proses kognitif yang bermakna (Dewi, Suryadarma & Wilujeng, 2018). Tahap penguasaan konsep yang rendah boleh menyebabkan berlakunya miskonsepsi (Puteri, Rahman & Priyandoko, 2017). Justeru itu, dapatan ini menggambarkan penguasaan konsep merupakan satu elemen penting dalam proses pembelajaran. Dalam proses pembelajaran, proses asimilasi dan akomodasi akan berlaku. Maklumat awal yang ada pada murid, dapat membantu murid memahami konsep baru yang diterima semasa proses pembelajaran berlaku. Maklumat awal (*preconception*) adalah maklumat yang ada pada murid sebelum proses pembelajaran. Apabila proses pembelajaran berlaku, murid akan melalui proses akomodasi untuk memahami konsep yang baru diterima. Melalui penguasaan konsep, murid dapat meningkatkan kemahiran intelektual, membantu menyelesaikan masalah yang dihadapi dan menjana pembelajaran yang lebih berkesan (Puteri, Rahman & Priyandoko, 2017).

Sehubungan dengan itu, hasil dapatan kajian rintis ini juga memberikan gambaran bahawa penguasaan konsep amatlah penting dalam menguasai kemahiran baru dalam sesuatu mata pelajaran. Khususnya dalam mata pelajaran Prinsip Perakaunan, apabila murid dapat menguasai konsep asas dalam sistem catatan bergu, maka murid akan lebih memahami logik setiap catatan bagi sesuatu urus niaga. Keadaan ini secara langsung dapat membantu murid lebih memahami tajuk-tajuk seterusnya dalam Prinsip Perakaunan dan seterusnya dapat menguasai soalan-soalan KBAT. Dapatan ini seiringan dengan kajian yang telah dijalankan oleh Najib dan Rauf (2011), untuk melihat hubungan antara penguasaan konsepsi guru menengah rendah dengan tahap kemahiran proses khususnya dalam mata pelajaran Sains. Hasil kajian menunjukkan terdapat hubungan yang signifikan antara penguasaan konsepsi sains dengan kemahiran proses sains. Ini bermakna guru yang mempunyai tahap penguasaan konsep sains yang tinggi secara langsung akan dapat menguasai kemahiran proses sains dengan baik. Ini bermakna untuk menguasai sesuatu kemahiran, seseorang individu perlulah terlebih dahulu menguasai konsepnya. Sementara itu, Hassan, Mustapha, Nik Yusuff dan Mansor (2017) dalam kajiannya turut memperjelaskan bahawa faktor utama yang menyebabkan murid gagal menguasai KBAT adalah disebabkan oleh kelemahan murid-murid untuk terlebih dahulu menguasai kesemua fakta dan konsep dalam sesuatu mata pelajaran sebelum murid digalakkan untuk berfikir.

Rentetan daripada dapatan kajian rintis ini, ia memperlihatkan tugas guru dalam bilik darjah juga memainkan peranan yang penting dalam membantu murid menguasai sesuatu konsep yang diajar. Pedagogi yang dirancang oleh guru perlulah lebih menarik dan memfokuskan murid supaya murid dapat terlibat secara aktif dalam proses pembelajaran. Apabila murid mengambil bahagian secara aktif dalam proses pembelajaran, ia dapat membolehkan murid lebih memahami apa yang diajar oleh guru melalui proses asimilasi dan proses akomodasi. Perubahan maklumat awal yang ada pada murid dengan ilmu pengetahuan yang baru diajar oleh guru amatlah membantu murid lebih menguasai sesuatu tajuk yang diajar oleh guru seterusnya membantu mereka lebih menguasai soalan-soalan KBAT.

## 7.0 KESIMPULAN

Berdasarkan hasil dapatan kajian rintis yang dijalankan, ia dapat memberikan gambaran awal bahawa penguasaan konsep sememangnya mempunyai perkaitan secara langsung dengan kemahiran berfikir aras tinggi (KBAT) dalam kalangan murid. Penguasaan konsep merupakan salah satu faktor yang dapat menyumbang kepada tahap penguasaan kemahiran berfikir aras tinggi (KBAT) murid. Apabila murid dapat menguasai konsep asas terutamanya dalam Sistem Catatan Bergu, maka ia akan dapat meningkatkan kemahiran berfikir aras tinggi (KBAT) murid. Rentetan daripada dapatan ini, dapat memberikan maklumat bahawa perlunya usaha untuk meningkatkan penguasaan konsep murid agar dapat meningkatkan tahap penguasaan murid khususnya dalam kemahiran berfikir aras tinggi (KBAT) dalam mata pelajaran Prinsip Perakaunan. Pelbagai pihak perlu mengambil inisiatif dan berganding bahu untuk mempermantapkan lagi pelaksanaan KBAT khususnya meningkatkan tahap penguasaan KBAT dalam kalangan murid. Para guru khususnya perlulah merancang pedagogi pengajaran agar lebih menarik dan memfokuskan murid supaya proses pengajaran dan pemudahcaraan (PdPc) dalam bilik darjah adalah lebih berkesan.

## 8.0 PENGHARGAAN

Setinggi-tinggi penghargaan diberi kepada Kementerian Pendidikan Malaysia (KPM) dan Universiti Putra Malaysia (UPM) untuk pembiayaan kewangan dalam penyelidikan ini melalui Geran Putra (GP/2018/9636700) untuk Geran Universiti Penyelidikan (RUG).

## RUJUKAN

- Amabile, T. M. and Mueller, J. S. (2008). *Studying Creativity, Its Processes and Its Antecedents: An Exploration of The Componential Theory of Creativity*. Chapter in J. Zhou and C.E. Shalley (Eds), *Handbook of Organizational Creativity*. New York: Lawrence Erlbaum Associates.
- Anderson, L., Krathwohl, D., Airasian, P. (2001). *A Taxonomy For Learning, Teaching And Assessing. A Revision Of Bloom's Taxonomy Of Educational Objectives*. New York: Pearson, Allyn & Bacon.
- Arni Yuzie, A. M., & Ruhizan, M. Y. (2015). Kemahiran Berfikir Aras Tinggi Pelajaran Sains. *Asian Education Action Research Journal (AEARJ)*, 4, 81–96.
- Azizi, Y. & Elanggovan, M. S. (2012). *Kepentingan Kefahaman Konsep Dalam Matematik*. Dimuat turun pada 2 Disember, 2018 dari ms 22-31 di <http://eprints.utm.my/13902/1/Bab2.pdf>
- Bahagian Pembangunan Kurikulum. (2014). *Kemahiran Berfikir Aras Tinggi: Aplikasi di Sekolah*. Kementerian Pendidikan Malaysia. <https://doi.org/10.1017/CBO9781107415324.004>
- Bahagian Pembangunan Kurikulum. (2016). *Prinsip perakaunan Dokumen Standard Kurikulum dan Pentaksiran Tingkatan 4*. Kementerian Pendidikan Malaysia.
- Burger, K. (2010). *How does early childhood care and education affect cognitive development? An international review of the effects of early interventions for children from different social backgrounds early*. *Childhood Research Quarterly* 25: 140-165
- Chew, B. G. (2017). *Pengetahuan dan Pengaplikasian Kemahiran Berfikir Aras Tinggi dalam Kalangan Guru Teknik dan Vokasional*. Fakulti Pendidikan Teknikal Dan Vokasional Universiti Tun Hussein Onn Malaysia.
- Chew, F. P. & Zul. H. A. (2018). Kemahiran Berfikir Aras Tinggi Dalam Pembelajaran Dan Pemudahcaraan Bahasa Melayu Melalui Teknik Penyoalan (Higher Order Of Thinking Skills In Teaching And Learning Malay Language Through Questioning Technique). *Malay Language Education Journal – MyLEJ*, JPBN, vol 8 (1), 2180–4842.
- Chua, Y.P. (2006). *Kaedah dan Statistik Penyelidikan*. Kuala Lumpur: McGraw- Hill Education.
- Cooper, D. R., & Schindler, P. S. (2011). *Business Research Methods (11th Ed. Ed.)*. New York: McGraw-Hill/Irwin
- Davis, J. A. (1971). *Elementary survey analysis*. Englewood Cliffs, NJ: Prentice-Hall.
- Dewi, E. C, Suryadarma, I. G. P., Wilujeng, I. (2018). Using Video Integrated with Local Potentiality to Improve Students ' Concept Mastery in Natural Science Learning. *Journal of Physics: Conference Series*. 1097 (2018) 012001. Doi:10.1088/1742-6596/1097/1/012001.
- Gay, L.R. & Airasian, P. (2003). *Educational Research: Competencies for Analysis and Application*. 7<sup>th</sup> Edition. Upper Saddle River, New Jersey: Person Education.
- Gulistan, M.S. Saedah, S. Abu Bakar, N. & Omed, S. A. (2015). Higher Order Thinking Skills Among Secondary School Students in Science Learning. *The Malaysian Online Journal of Educational Science*, 3(3), 13–20.
- Hassan, M.N., Mustapha, R., Nik Yusuff, N. A., & Mansor, R. (2017). Development Of Higher Order Thinking Skills Module In Science Primary School: Need Analysis. *International Journal of Academic Research in Business and Social Sciences*, 7(2222-6990), 624-628.
- Johanson, G.A., & Brooks, G.P. (2010). *Initial Scale Development: Sample Size for Pilot Studies*. *Educational and Psychological Measurement*, 70(3), 394-400. <https://doi.org/10.1177%2F0013164409355692>
- Junaidah, J. Norlaila, M. D., Mohamad, A. N. A, Faizan, A. J., Nur Syazwani, M. F., Zuhariah, H. (2016). Keberkesanan Kaedah Permainan dalam Pengajaran dan Pembelajaran Prinsip Perakaunan di Sekolah Menengah. *Konferens Akademik Universiti Teknologi MARA*, (November), 53–57.
- Kementerian Pendidikan Malaysia. (2013). *Malaysia Education Blueprint 2013 - 2025*. *Malaysia Education Blueprint, Malaysia*, 1–268. <https://doi.org/10.1016/j.tate.2010.08.007>

- Kementerian Pendidikan Malaysia. (2018). *Pengumuman Analisis Keputusan Sijil Pelajaran Malaysia (SPM) 2017*. Dimuat turun pada 29 Mei 2019. <http://lp.moe.gov.my/images/bahan/spm/2018/Pengumuman%20Analisis%20Keputusan%20SPM%202017.pdf>
- Kementerian Pendidikan Malaysia. (2019). *Pengumuman Analisis Keputusan Sijil Pelajaran Malaysia (SPM) 2018*. Dimuat turun pada 15 Mei 2019. <http://lp.moe.gov.my/images/bahan/spm/2019/14032019/Laporan%20Analisis%20Keputusan%20SPM%202018%20-%20Upload.pdf>
- Lai, E. R. (2011). *Critical thinking: A literature review*. Critical Thinking (June), 1-49. Retrived from <http://images.pearsonassessments.com/images/tmrs/critical> thinking review FINAL. Pdf
- Lembaga Peperiksaan. (2015). *Item contoh pentaksiran kemahiran berfikir aras tinggi sekolah menengah: Bidang Teknik dan Vokasional*. Ipoh: Percetakan Zainon Kassim.
- Najib, G. M., & Rauf, I. A. (2011). Penilaian Hubungan Tahap Penguasaan Konsepsi Sains Dengan Tahap Kemahiran Proses Sains Guru Peringkat Menengah Rendah. *Journal of Science and Mathematics Educational*, 3, 1–19.
- Nooriza, K., & Effandi, Z. (2015). Integrasi Kemahiran Berfikir Aras Tinggi dalam Pengajaran dan Pembelajaran Matematik: Analisis Keperluan Guru. *Proceeding of Education Graduate Regional Conference*, 3(1990), 60–67. <https://doi.org/https://doi.org/10.1016/j.apcata.2009.10.016>
- Nur Hani, Z. (2003). *Penghasilan Glosari Subjek Perakaunan Kos Di Kalangan Pelajar Semester Enam Diploma Akauntansi: Satu Tinjauan di Politeknik Sultan Haji Ahmad Shah (POLISAS)*. Fakulti Teknologi Kejuruteraan Kolej Universiti Teknologi Tun Hussein Onn.
- Nurashikin. M. (2015). *Pembinaan Modul Bio Three dan kesannya terhadap penguasaan konsep serta kemahiran berfikir aras tinggi murid Tingkatan 4*. Fakulti Sains dan Matematik. UPSI.
- Putri, L. O. L., Rahman, T., Priyandoko, D. (2017). Analyzing Concepts Mastery and Misconceptions About Evolution of Biology Major Students. IOP Conf. Series: *Journal of Physics: Conf. Series* 812(2017)012083. doi:10.1088/1742-6596/812/1/012083
- Reeves, J. Redford, M. & McQueen, I. (2010). Practitioner research and excellence in teaching. *Scottish Educational Review*, 42 (2), 74-88.
- Rajendran, N. S. (2008). *Teaching & Acquiring Higher-Order Thinking Skills; Theory & Practice*. Perak: Penerbit Universiti Pendidikan Sultan Idris.
- Swartz, R. (2010). *Defining Teaching Excellence: A Phenomenological Study of Seven Nationally Recognized Secondary Educators*, 1-88.
- Tan, S. Y., & Siti Hajar, H. (2015). Effective Teaching of Higher-Order Thinking (Hot) in Education. *The Online Journal of Distance Education and E-Learning (TOJDEL)*, 3(2), 41–47.
- Wan Norehan. W. M. (2013). *Tahap Penguasaan Kemahiran Pemikiran Kritis Dalam Kalangan Pelajar Kejuruteraan Dan Hubungannya Dengan Pencapaian Pelajar*. Fakulti Pendidikan Teknikal Dan Vokasional Universiti Tun Hussein Onn Malaysia.
- Yee, M. H., Yunos, J. M., Othman, W., & Hassan, R. (2015). Disparity of Learning Styles and Higher Order Thinking Skills among Technical Students. *Procedia - Social and Behavioral Sciences*, 204 (August), 143–152. <https://doi.org/10.1016/j.sbspro.2015.08.127>
- Zarina, R. (2016). Tahap Kesianan Guru Dalam Aspek Pengetahuan Dan Keperluan Latihan Berfokuskan Aplikasi KBAT. *Tesis Sarjana UTHM*, 146.

## Pre-Service Teachers Training Satisfaction and Practical Knowledge Acquisition in Artificial Intelligence Teachers Training Program: A Multiple Regression Study

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### ABSTRACT

*The acquisition of practical knowledge is the main objective in pre-service teachers (PSTs) training. However, research with the focus on the relationship between pre-service teachers' training and practical knowledge acquisition through quantitative methods are limited. Additionally, the influence of various educational activities in pre-service teachers' training on teachers' practical knowledge acquisition remains unclear. Hence, this study employed a multiple regression analysis to investigate pre-service teachers' satisfaction who are in an artificial intelligence training program to predict practical knowledge acquisition. This study utilizes a dataset of 219 pre-service teachers from an artificial intelligence teachers' training program at a university of Guizhou province. Findings from the multiple regression analysis indicated that pre-service teachers' acquisition of practical knowledge are mainly influenced by three factors which are: (1) knowledge preparation, instructional design and reflection in the process of PSTs training, (2) teaching in primary school and (3) teamwork. Not only this study has implications on the training process of pre-service teachers at the university but also in the cultivation of teachers' practical knowledge.*

**KEYWORDS:** Artificial intelligence training, Teachers' practical knowledge, Pre-service teachers, Service learning

## 1.0 INTRODUCTION

Over the last 20 years, the advancement of AI technology on education has been significantly influenced by the wave of big data and machine learning. The impact of the inclusiveness, complexity, and diversity of AI on education is different from other information technology as it is both in-depth and extensive. The integration of AI and education has become a new research boom. It can be foreseen change is inevitable as new theories, problems, concepts, ideas, and methods will challenge the current traditional structure.

The teaching of AI at primary and secondary school levels hardly exists in many countries (Burgsteiner, Kandlhofer, & Steinbauer, 2016). Although many countries have tried to introduce AI into their school curriculum especially at primary and secondary levels, the study of AI education remains limited, especially in the training of AI teachers, which is a crucial part of AI education. Bers and Portsmore (2005) further asserted that teachers are lacked of training and expertise in integrating technology in a constructivist curriculum and methodology.

To address this issue, Bers (2005) believed that AI teachers' training should start from pre-service teachers (PSTs). Various research indicated that teachers' practical knowledge (TPK) is related to PSTs'



training and development (Armoni, 2011; Shulman, 1987; Chen, 2003). PSTs training or activities are widely believed to have an impact on TPK. Through training, PSTs will be able to acquire TPK (Jie, 2015). Therefore, this study focused on the relationship between PSTs satisfaction with the AI training program as well as the acquisition of practical knowledge in AI teachers' training program in a university of Guizhou province in China.

## **2.0 LITERATURE REVIEW**

Computer science defined AI as a system with the ability to correctly interpret and learn from external data as well as use this knowledge to achieve specific goals and tasks through flexible adaptation (Andreas, & Michael, 2019). To illustrate, personal assistants, chatbots, language translators, video games, smart cars, and facial recognition are some of the examples of AI applications which are common in our everyday life. Despite the growing media attention and the ubiquity of AI technology in our daily lives, the introduction of AI education is still at its initial stage, especially in the field of training AI teachers (Druga, 2018; David, Christina, Martin & Seehorn, 2019).

As there is no literature on AI teachers' training for PSTs, the current training was derived from a computer science teachers' training. Adler (2000) defined computer science training of PSTs as a process of increasing participation in teaching practice as well as the acquisition of knowledge in teaching and learning. The training provided teachers with the opportunity to use their knowledge, experiences, and personal characteristics and enabled them to grow into capable teachers (Seppälä, & Alamäki, 2003). It is highly recommended that tools should be provided by the computer science training of PSTs so that PSTs are able to continue their professional development as serving teachers (Armoni, 2011). Reflection would be an essential tool for computer science teacher training as it is considered as a meta-cognitive and a characteristic of higher-order thinking (Cooney, 2003; Schön, 1987; Paris & Winograd, 1990).

Armoni (2011) believed that PSTs in computer science training module is a process of integrating practical activities and theoretical knowledge. Theoretical knowledge should include both social and psychological foundations so that PSTs are familiar with these areas and will be able to use them in a broader context (Pietig, 1997). Additionally, the training should include practical experience. Jaworski and Gellert (2003) asserted that theory could work in two ways. First, it is served as a mirror in the process of reflection on practice. Second, from practice, teachers can get inspiration and experience from their reflection on theory.

One of the main issues faced during the discussion of PSTs in computer science training is the type of knowledge that future teachers should possess. Shulman (1987) and Wilson et al. (1987) had identified that teacher should possess several categories of knowledge namely: (1) content knowledge, (2) knowledge of other content, (3) knowledge of learners, (4) knowledge of educational aims, and (5) general pedagogical knowledge. The Computer Science Teachers Association pointed out that teachers must acquire subject matter knowledge and teaching skills to enable them to present materials to students in the computer training program (Tucker et al., 2004). Generally, PSTs who are in computer science training are taught fundamental theories of computer science, programming concepts and languages, common algorithms and data structures (Qian, & Lehman, 2018).

Although researchers held different opinions on what kind of knowledge should teachers possess, they mutually agreed that teachers' knowledge formed in practice has a significant influence on teachers' behaviors in the classroom (Shulman, 1987; Wilson et al., 1987; Ragonis et al., 2010). They also agreed that reflection play an essential role in the process of computer science teacher training. A few studies also mentioned that PSTs professional responsibility, community practice and practical knowledge are factors which are indispensable to PSTs training (Hazzan & Lapidot, 2004; Hazzan & Lapidot, 2006; Cordingley, Bell, Rundell & Evans, 2003).

Elbaz (1981) and Shulman (1986) proposed that practical knowledge helps teachers to focus on their thoughts and decision making; thus, enabling them to understand their work. Practical knowledge was considered as an integrated set of practical wisdom, knowledge, conceptions, beliefs, and insights which underlie teachers' actions in practice (Elbaz, 1981; Driel, Beijaard & Verloop, 2001). Practical knowledge is cultivated out of practice, circumstances, and actions. Furthermore, practical knowledge is guided by practice as it is the strategic cognitive system of an individual (Connelly, & Clandinin, 1985; Pu, & Xiang, 2017). For teachers, practical knowledge is a reconstruction and assemblance of knowledge from their past

professional experiences, which they used as a guide to plan and enact future teaching activities (Black, & Halliwell 2000; Connelly, & Clandinin, 1988).

Many believed that practical knowledge is an important aspect in teachers' training program because it overcomes the traditional dichotomy between theoretical and practical using two approaches (Cochran-Smith, & Lytle 1999). On one hand, theory use can be observed by the degree of how the teachers used theoretical concepts meaningfully and on the other hand, theory use can be observed in the way teachers reflected on the practical process (Oonk, Verloop, & Gravemeijer, 2015). Practical knowledge has four important advantages in PSTs training program. Firstly, practical knowledge contains experiential knowledge which is mostly undocumented but it is important for PSTs teaching practice as it meets the needs for immediate action (Zanting, Verloop, & Vermunt, 2001, Carter, 1990). Additionally, not only teachers are the applicators and disseminators of knowledge, but they are also the creators who create their own personal practical knowledge of teaching (Ben-Peretz, 2011). Furthermore, practical knowledge helps to improve PSTs interest in developing new skills and learning styles (Oss, 2018). Last but not least, practical knowledge will develop into professional knowledge and this will enable PSTs to adapt to different educational contexts (Oss, 2018, Pu, & Xiang, 2017). Hence, practical knowledge has been presumed to be one of the central themes in PSTs education. Thus, PSTs practical knowledge is a necessary condition in the investigation of the process of teachers' education reformation (Driel, Beijaard, & Verloop, 2001).

Jie (2015) investigated the effectiveness of PSTs training program on the acquisition of practical knowledge. The study categorised practical knowledge into six components: (1) educational beliefs, (2) situational knowledge, (3) subject matter knowledge, (4) interpersonal relationship, (5) teaching strategies and (6) self-reflection. There were six activities in that PSTs training program namely (1) subject knowledge learning, (2) practicum, (3) the guidance of experienced teachers, (5) exchanges with colleagues and students and (6) teaching reflection which include the handling of teaching setbacks and incidents. From the findings, more than 80% of the PSTs believed that practicum is helpful in the acquisition of practical knowledge. Besides, various activities in PSTs training program had different effects on the components of PSTs practical knowledge. Specifically, subject knowledge learning, exchanges with students, and teaching reflection had a significant influence on PSTs educational beliefs. Additionally, subject knowledge learning, practicum, and teaching reflection had a significant influence on PSTs situational knowledge, teaching strategies, and self-reflection. Furthermore, practicum, learning subject knowledge and exchanges with colleagues had a significant influence on PSTs interpersonal relationship. Moreover, subject knowledge learning, the guidance of experienced teachers and teaching reflection had a significant influence on PSTs subject matter knowledge.

According to Armoni (2011), computer science teacher training program should cover a variety of knowledge such as practical knowledge, subject matter knowledge, pedagogical content knowledge, and curricular knowledge. These types of knowledge should be taught in a comprehensive way and the teaching should be linked to theory and practice. The training program for computer science teachers should focus on seven aspects which are (1) subject-matter courses, (2) education-related courses, (3) methods courses, (4) practicum, (5) reflection, (6) peer-assessment and (7) teamwork as these aspects had a positive effect on practical knowledge acquisition.

It can be concluded that the acquisition of practical knowledge is an essential knowledge foundation for the professional development of PSTs and teachers' training program. The acquisition of practical knowledge needs four essential aspects: (1) real teaching situation, (2) reflection in action, (3) creation of one's personalized knowledge system, and (4) the formation of an individual belief. Hence, AI teachers' training should meet these four aspects and provide PSTs the opportunities to integrate academic context to practice. However, few studies have focused on the relationship between PSTs training and practical knowledge acquisition using quantitative methods. Additionally, the influence of various educational activities in PSTs training on teachers' practical knowledge acquisition remains unclear.

### **3.0 METHOD**

Multiple regression analysis was employed to investigate PSTs satisfaction with AI training program, which consists of six activities namely: (1) knowledge preparation, (2) building teams, (3) project design, (4) teaching in primary school, (5) reflection and (6) sharing to predict practical knowledge acquisition. Meanwhile, practical knowledge acquisition included six aspects namely: (1) educational beliefs, (2) situational knowledge, (3) subject matter knowledge, (4) interpersonal relationship knowledge, (5) teaching

strategies and (6) self-reflection. Specifically, the objectives of this study were to identify: (1) the relationship between the six activities and PSTs educational beliefs; (2) the relationship between the six activities and PSTs situational knowledge; (3) the relationship between the six activities and PSTs subject matter knowledge; (4) the relationship between the six activities and PSTs interpersonal relationship knowledge; (5) the relationship between the six activities and PSTs teaching strategies and (6) the relationship between the six activities and PSTs teaching strategies as well as self-reflection.

This study adopted a purposive sampling. The practical knowledge acquisition survey was administered to a sample of 219 PSTs at a university of Guizhou province. These PSTs were recruited as they were participants in an AI training program which focused on technology education provided by the university of Guizhou province. The duration of the AI training program was one semester. Participation in the study was voluntary and incentive was not offered to participants for participating in the study. The participants were PSTs who were in their sixth semester, 56 males, 163 females with an average age between 18 and 22 years old.

#### 4.0 RESEARCH INSTRUMENT

The present study adopted the practical knowledge acquisition questionnaire as a research instrument. It had a 5-point Likert from 1 (strongly disagree) to 5 (strongly agreed) (Jie, 2016). The questionnaire consisted of forty statements and it was divided into three sections which are demographic information, satisfaction with AI training and practical knowledge acquisition. Under satisfaction with AI training, the six activities were included. As for practical knowledge acquisition, six categories namely educational beliefs, situational knowledge, subject matter knowledge, interpersonal relationship knowledge, teaching strategies, self-reflection were included. The Cronbach's alpha coefficient was 0.840. In this study, 219 questionnaires were distributed and 216 valid questionnaires were collected.

#### 5.0 RESULTS AND DISCUSSION

##### 5.1 Predicting PSTs Educational Beliefs Acquisition

In order to answer the first objective, a multiple regression was run to predict PSTs educational beliefs from PSTs satisfaction with the six activities of AI training program. The multiple regression model statistically significantly predicted PSTs educational beliefs,  $F = 11.959$ ,  $p = .0009$ , adj.  $R^2 = .457$ . The PSTs satisfaction of knowledge preparation added statistically significantly to the prediction,  $p < .05$  (shown in table 1). The result indicates that PSTs satisfaction of knowledge preparation has predicting function on educational beliefs acquisition in AI training.

Table 1. Regression analysis results for predicting PSTs educational beliefs acquisition

Model	Non-standardized coefficients	Standardized coefficients	t	Sig.
Knowledge preparation	0.216	0.214	2.667	.009

Based on the result, it can be concluded that knowledge preparation plays an important role in PSTs educational beliefs. In the literature, teachers' knowledge is associated with educational beliefs. According to Pajares (1992), educational belief is a part of practical knowledge which is closely interwoven with knowledge. PSTs beliefs are also influenced by their personal biography, such as knowledge and disciplinary background, their own teachers and their own students (Driel, Beijaard, & Verloop, 2001). Although teachers' training programs may cause some changes in educational beliefs, the change might not be enough to affect the way these PSTs teach if their educational beliefs are persistent (Swafford, 1995; Armoni, 2011). A probable explanation of the present study finding is that knowledge preparation which is an important aspect of PSTs training in university is enough to affect PSTs beliefs. This is further supported by the research conducted by Cooney & Wiegel (2003) which state that PSTs educational beliefs are mostly affected by the knowledge and the way they were taught as students at school or university.

## 5.2 Predicting PSTs Situational Knowledge Acquisition

To investigate the second objective, a multiple regression was run to predict PSTs situational knowledge acquisition from PSTs satisfaction with the six activities in the AI training program. The multiple regression model statistically significantly predicted PSTs situational knowledge,  $F = 6.453$ ,  $p < .001$ ,  $\text{adj. } R^2 = .117$ . The PSTs satisfaction of knowledge preparation, teamwork and reflection added statistically significantly to the prediction,  $p < .05$  (shown in table 2). The result indicates that these three factors have predicting function on PSTs situational knowledge acquisition in AI training.

Table 2. Regression analysis results for predicting PSTs situational knowledge acquisition

Model	Non-standardized coefficients	Standardized coefficients	t	Sig.
Knowledge preparation	.110	.223	2.678	.008
Teamwork	.118	.187	2.164	.032
Reflection	-.120	-.276	-3.249	.001

In PSTs training, situational knowledge or context knowledge can be observed when a teacher knows, does, and feels every minutia in their everyday classroom life. Barnett & Wiegel (2001) found that situational knowledge can be both internal and external. Internal sources include reflection and personal experiences of teaching whereas external sources include subject matter knowledge, exchange with other teachers, governmental regulation and school policies. Similarly, the present research found that both internal (reflection) and external (knowledge preparation and teamwork) sources had contributed to PSTs increase of situational knowledge acquisition in AI training process.

## 5.3 Predicting PSTs subject matter knowledge acquisition

To investigate the third objective, a multiple regression was run to predict PSTs subject matter knowledge acquisition from PSTs satisfaction with six activities of AI training program. The multiple regression model statistically significantly predicted PSTs subject matter knowledge acquisition,  $F = 6.453$ ,  $p < .001$ ,  $\text{adj. } R^2 = .117$ . The PSTs satisfaction of knowledge preparation, instructional design and reflection added statistically significantly to the prediction,  $p < .05$  (shown in table 2). The result indicates that these three factors have predicting function on PSTs subject matter knowledge acquisition in AI training.

Table 3. Regression analysis results for predicting PSTs subject matter knowledge acquisition

Model	Non-standardized coefficients	Standardized coefficients	t	Sig.
Knowledge preparation	0.335	0.387	5.028	0.000
Instructional design	-0.192	-0.204	-2.199	0.029
Reflection	0.90	0.219	2.541	0.001

Zeidler (2002) believed that the way of teaching influences subject matter knowledge. On the other hand, Shulman (1987) views that the way of teaching is translated into subject matter in readily accessible forms and reflection may lead to a restructuring of teachers' subject matter knowledge. Similarly, the results of the present study were consistent with Shulman' research results which further proved that reflection had a significant effect on PSTs subject matter knowledge in the process of AI training. Both knowledge preparation and instructional design had a significant influence on subject matter knowledge acquisition as PSTs are required to master subject content knowledge at the knowledge preparation stage. Moreover, instructional design is not only a representation of teachers' personal knowledge but also a reflection of experience and knowledge.

## 5.4 Predicting PSTs interpersonal relationship knowledge acquisition

To investigate the fourth objective, a multiple regression was run to predict PSTs interpersonal relationship knowledge acquisition from PSTs satisfaction with the six activities of AI training program. The multiple regression model statistically significantly predicted PSTs interpersonal relationship

knowledge acquisition,  $F = 6.065$ ,  $p = .003$ , adj.  $R^2 = .306$ . The PSTs satisfaction of teaching in primary school and knowledge preparation added statistically significantly to the prediction,  $p < .05$ . The result indicates that these two factors have predicting function on PSTs interpersonal relationship knowledge acquisition.

Table 4. Regression analysis results for predicting PSTs interpersonal relationship knowledge acquisition

Model	Non-standardized coefficients	Standardized coefficients	t	Sig.
Teaching in primary school	-0.175	-0.291	-3.236	0.001
Knowledge preparation	0.129	0.239	-2.657	0.009

The results indicated that teaching in primary school and knowledge preparation had increased PSTs interpersonal relationship knowledge acquisition. This is further supported by another research conducted by Jie (2016) which pointed out that PSTs' practicum and subject knowledge learning can improve PSTs interpersonal relationship knowledge acquisition. Knowledge preparation, teaching in primary school, instructional design and reflection are all related to teachers' own knowledge and experience. When PSTs analyzed their own teaching experiences as well as discussed their instructional design with their peers, they were stimulated to develop their own instructional strategies (Geddis, 1993; Van Driel et al., 1998).

### 5.5 Predicting PSTs Teaching Strategies Acquisition

To investigate the fifth objective, a multiple regression was run to predict PSTs teaching strategies acquisition from PSTs satisfaction with six activities of AI training program. The multiple regression model statistically significantly predicted PSTs teaching strategies acquisition,  $F = 4.517$ ,  $p = .005$ , adj.  $R^2 = .319$ . The PSTs satisfaction of knowledge preparation, teaching in primary school, instructional design and reflection added statistically significantly to the prediction,  $p < .05$ . The result indicates that these four factors have predicting function on PSTs teaching strategies acquisition, and knowledge preparation had a greater effect. According to Jie (2016), teaching strategies are influenced by three factors namely knowledge preparation, teaching in primary school and reflection. However, besides the three factors mentioned, the present research found a new factor which was instructional design that would have a significant influence on PSTs teaching strategies acquisition.

Table 5. Regression analysis results for predicting PSTs teaching strategies acquisition

Model	Non-standardized coefficients	Standardized coefficients	t	Sig.
Knowledge preparation	0.098	0.137	1.762	0.008
Teaching in primary school	0.119	0.264	2.966	0.004
Instructional design	-0.154	-0.191	-1.915	0.007
Reflection	0.120	0.188	2.040	0.043

### 5.6 Predicting PSTs Self-Reflection Acquisition

To examine the sixth objective, a multiple regression was run to predict PSTs self-reflection acquisition from PSTs satisfaction with six activities of AI training program. The multiple regression model statistically significantly predicted PSTs self-reflection acquisition,  $F = 29.11$ ,  $p < .001$ , adj.  $R^2 = .284$ . The PSTs satisfaction of teamwork and instructional design added statistically significantly to the prediction,  $p < .05$ . The result indicates that these two factors have predicting function on PSTs self-reflection acquisition in AI training, and instructional design had a greater effect.

Table 6. Regression analysis results for predicting PSTs self-reflection acquisition

Model	Non-standardized coefficients	Standardized coefficients	t	Sig.
Teamwork	.260	.179	2.286	.024
Instructional design	.538	.427	5.459	.000

Foong, Binti & Nolan (2018) who investigated the relationship between individual and collective reflection found that collective reflection supported higher levels of individual reflective thinking during practicum. The present research also found that instructional design had a significant impact on self-reflection. The possible explanation for this might be group discussions allowed PSTs to present and reflect on their experience and ideas.

## 6.0 CONCLUSION

The present research was done to examine the relationship between PSTs satisfaction with AI training program and practical knowledge acquisition in AI teachers training program. This study employed a multiple regression analysis. The findings of the study concluded that PSTs practical knowledge acquisition is mainly influenced by the three factors which are: (1) knowledge preparation, instructional design and reflection in the process of PSTs training, (2) teaching in primary school and (3) teamwork. On the other hand, some researches held the belief that the main factors which influence the acquisition of practical knowledge are teachers' practice and action (Armoni, 2011; Jie, 2015; Ben-Peretz, 2011). Nevertheless, it must be noted that unlike the servicing teachers, PSTs are still at the stage of learning and accumulating knowledge. If the PSTs do not have sufficient knowledge preparation, instructional design and reflective ability, the PSTs are likely to experience failure in practice and action; thus, losing motivation and confidence to become teachers. Moreover, these factors in the process of PSTs training do not exist in isolation. Instead, they are closely related to each other as they influence one another. In conclusion, this study suggested that PSTs training should not only focus on teachers' knowledge preparation, instructional design and reflective ability, but also teachers' practical activities and teamwork.

## REFERENCES

- Alkhafaji, K., & Morse, M.C., 2006. Learning sustainable design through service, *International journal service-learning in engineering*, 1(1), 1-10.
- Alvarez, I. M., Weise, C., Vall, B., González, M., & Morodo, A. (2018). How do primary education trainee teachers perceive educational psychology?. *Teachers and Teaching*, 24(1), 81-94.
- Armoni, M. (2011). Looking at Secondary Teacher Preparation Through the Lens of Computer Science. *ACM Transactions on Computing Education*, 11(4), 1–38.doi:10.1145/2048931.2048934
- Attaran, M., & Yishuai, H. (2018). Teacher education curriculum for teaching Chinese as a foreign language. *MOJES: Malaysian Online Journal of Educational Sciences*, 3(1), 34-43.
- Baldwin, S. C., Buchanan, A. M., & Rudisill, M. E. (2007). What teacher candidates learned about diversity, social justice, and themselves from service-learning experiences. *Journal of Teacher Education*, 58(4), 315–327. doi:10.1177/0022487107305259
- Barnes, A. E., Zuilkowski, S. S., Mekonnen, D., & Ramos-Mattoussi, F. (2018). Improving teacher training in Ethiopia: Shifting the content and approach of pre-service teacher education. *Teaching and Teacher Education*, 70, 1-11.
- Barnett, J., & Hodson, D. (2001). Pedagogical context knowledge: Toward a fuller understanding of what good science teachers know. *Science Education*, 85(4), 426–453. doi:10.1002/sce.1017.
- Ben-Peretz, M. . (2011). Teacher knowledge: what is it? how do we uncover it? what are its implications for schooling?. *Teaching and Teacher Education*, 27(1), 1-9.
- Boyle-Baise, M., & Kilbane, J. (2000, Fall). What really happens? A look inside a community service learning field experience for multicultural teacher education. *Michigan Journal of Community Service Learning*, 7, 54–64.
- Carter, K. (1990). Teachers' knowledge and learning to teach. In W. R. Houston (Ed.), *Handbook of research on teacher education*. New York: Macmillan.
- Castro, E., Cecchi, F., Salvini, P., Valente, M., Buselli, E., Menichetti, L., ... & Dario, P. (2018). Design and impact of a teacher training course, and attitude change concerning educational robotics. *International Journal of Social Robotics*, 1-17.
- Chambers, D. J. , & Lavery, S. . (2012). Service-learning: a valuable component of pre-service teacher education. *Australian Journal of Teacher Education*, 37(4), 128-137.

- Connelly, F. M., & Clandinin, D. J. (1985). Personal practical knowledge and the modes of knowing: Relevance for teaching and learning. In E. Eisner (Ed.), *Learning and teaching the ways of knowing*. Chicago, IL: University of Chicago Press.
- Connelly, F. M., & Clandinin, D. J. (1988). *Teachers as curriculum planners: Narratives of experience*. New York: Teachers College Press.
- Delano-Oriaran, O. (2014). Engaging pre-service teachers in diverse communities through servicelearning: A practical guide for application. *Journal of Education for Teaching*, 40(2), 186–188. doi:10.1080/02607476.2013.869968.
- Donaldson, L., & Daughterty, L. (2011). Introducing asset-based models of social justice into service learning: A social work approach. *Journal of Community Practice*, 19(1), 80–90. doi:10.1080/10705422.2011.550262.
- Driel, J. H. V. , Beijwaard, D. , & Verloop, N. . (2001). Professional development and reform in science education: the role of teachers' practical knowledge. *Journal of Research in Science Teaching*, 38(2), 137-158.
- Dukhan, N.; Schumack, M. R.; Daniels, J. J. (2008): Implementation of service-learning in engineering and its impact on students' attitudes and identity. In *European Journal of Engineering Education* 33 (1), pp. 21–31.
- Eyler, J. S., & Giles, D. E. (1999). *Where's the learning in service-learning?* San Francisco, CA: JosseyBass.
- Foong, L., Binti, M., & Nolan, A. (2018). Individual and Collective Reflection: Deepening Early Childhood Pre-service Teachers' Reflective Thinking during Practicum. *Australasian Journal of Early Childhood*, 43(1), 43–51. doi:10.23965/ajec.43.1.05.
- Geddis, A.N. (1993). Transforming subject-matter knowledge: The role of pedagogical content knowledge in learning to react on teaching. *International Journal of Science Education*, 15, 673 - 683.
- Grossman, P., Wilson, S., & Shulman, L. (1989). Teachers of substance: Subject matter knowledge in teaching. In M. C. Reynolds (Ed.), *Knowledge base for the beginning teacher*. New York: Pergamon Press/American Association of Colleges of Teacher Education.
- Huband, F.L., 2006. Service with a smile. PRISM, *American Society of Engineering Education*, 15 (9), 5.
- Jacoby, Barbara (1996). *Service-Learning in Higher Education: Concepts and Practices*. Jossey-Bass. ISBN 978-0787902919.
- Jamieson, L. H. . (2002). Service learning in computer science and engineering. Proceedings of the 33rd SIGCSE Technical Symposium on Computer Science Education, 2002, Cincinnati, Kentucky, USA, February 27 - March 3, 2002. ACM.
- Jawaharlal, M., Fan, U.J., and Monemi, S., (2006). Implementing service-learning in engineering curriculum. ASEE Annual Conference and Exposition, Chicago, paper 2614.
- Jie Ding. (2016). A study of novice teacher's practical knowledge acquisition. (Doctoral dissertation).
- Kenworthy-U'Ren, A. L. , & Peterson, T. O. . (2005). Service-learning and management education: introducing the we care approach. *Academy of Management Learning and Education*, The, 4(3), 272-277.
- Lanterman, C. S., & Applequist, K. (2018). Pre-service Teachers' Beliefs: Impact of Training in Universal Design for Learning. *Exceptionality Education International*, 28(3), 95.
- Linos, P. K. , Herman, S. , & Lally, J. . (2003). A service-learning program for computer science and software engineering. *ACM SIGCSE Bulletin*, 35(3), 30.
- Ma, J. L., Yuan, R. R., Leung, T. Y., & Wong, O. L. (2018). Learning Outcome of a Family Therapy Training Course for Psychiatric Nurses in a Chinese Context. *Contemporary Family Therapy*, 40(2), 119-127.
- McLean, N., & Price, L. (2019). A longitudinal study of the impact of reflective coursework writing on teacher development courses: a legacy effect of iterative writing tasks. *Higher Education*, 77(5), 949-962.
- Moll, L. C., Amanti, C., Neff, D., & González, N. (1992). Funds of knowledge for teaching: Using a qualitative approach to connect homes and classrooms. *Theory into Practice*, 31(2), 132–141. doi:10.1080/00405849209543534.
- Morgan, W. , & Streb, M. . (2001). Building citizenship: how student voice in service-learning develops civic values. *Social Science Quarterly*, 82(1), 154-169.
- Oonk, W. , Verloop, N. , & Gravemeijer, K. . (2015). Enriching practical knowledge: exploring student teachers' competence in integrating theory and practice of mathematics teaching. *Journal for Research in Mathematics Education*, 46(5), 560-563.

- Oss, Débora Izé Balsemão. (2018). The relevance of teachers' practical knowledge in the development of teacher education programs. *Profile Issues in Teachers Professional Development*, 20(1), 167-178.
- Ouadoud, M., Chkouri, M. Y., & Nejari, A. (2018). Learning management system and the underlying learning theories: towards new modelling of an LMS. *International Journal of Information Science and Technology*, 2(1), 25-33.
- Pajares, M.F. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research*, 62, 307 - 332.
- Prayogi, S., & Yuanita, L. (2018, January). Critical-Inquiry-Based-Learning: Model of Learning to Promote Critical Thinking Ability of Pre-service Teachers. In *Journal of Physics: Conference Series* (Vol. 947, No. 1, p. 012013). IOP Publishing.
- Pu, S. , & Xiang, L. . (2017). On the components and generation path of preschool education students' practical knowledge. *Studies in Early Childhood Education*, 1 (1), 34.
- Pu Song. (2015). Practice knowledge oriented service learning research. (Doctoral dissertation, YunNan University).
- Resnick, P. . (2012). Service-learning in the computer and information sciences: practical applications in engineering education. *Michigan Journal of Community Service Learning*, 19(4), 3-6.
- Selinger, J., 2006. May I help you? PRISM, *American society of engineering education*, 15 (9), 41–45.
- Silvovsky, L. A. , Derego, F. R. , Jamieson, L. H. , & Oakes, W. C. . (2004). Developing the reflection component in the EPICS model of engineering service learning. 33rd Annual Frontiers in Education, 2003. FIE 2003.. IEEE.
- Swafford, J. O. 1995. Teacher preparation. In *Prospects for School Mathematics*, I. M. Carl Ed., National Council of Teachers of Mathematics, Reston, VA, 157–174.
- Thanasiu, P. L., Rust, K. L., & Walter, S. M. (2018). Service learning and live supervision as early components in play therapy training. *International Journal of Play Therapy*, 27(2), 103.
- Van Driel, J.H., Verloop, N., & De Vos, W. (1998). Developing science teachers' pedagogical content knowledge. *Journal of Research in Science Teaching*, 35, 673 - 695.
- Van Driel, J. H., Beijaard, D., & Verloop, N. (2001). Professional development and reform in science education: The role of teachers' practical knowledge. *Journal of Research in Science Teaching*, 38(2), 137–158.
- Verloop, N., Van Driel, J., & Meijer, P. (2001). Teacher knowledge and the knowledge base of teaching. *International Journal of Educational Research*, 35(5), 441–461. doi:10.1016/S0883-0355(02)00003-4.
- W. Oakes, W. Coyle, and L. Jamieson., 2000. EPICS: A Model of Service-Learning in an Engineering Curriculum, *Proceedings of the ASEE Annual Conference*, 6-7.
- Zanting, A. , Verloop, N. , & Vermunt, J. D. . (2001). Student teachers eliciting mentors' practical knowledge and comparing it to their own beliefs. *Teaching & Teacher Education*, 17(6), 725-740.
- Zhou, Q. G., Guo, S. C., & Zhou, R. (2018). Investigation about participatory teachers' training based on MOOC. In *Teacher Training and Professional Development: Concepts, Methodologies, Tools, and Applications* . IGI Global.



## Relationship between Career Future Concern, Personal Goal Orientation, and Perceived Social Support to Career Adaptability among Malaysian Vocational College

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### ABSTRACT

*The swift of the boundary less technology advancement due to the expansion of Industrial Revolution 4.0 has indirectly impacted the national development and the employment trend. This situation has embarked concerns among educational stakeholders especially in Technical and Vocational Education and Training (TVET) stream to meet the industrial requirements. The graduates, in general, have received criticism due to their lackluster performance when entering job and this environment brings into serious matter in round table discussion especially issues related to graduates lack of skills, job mismatches, and lack of industrial participations. Far little attention has been paid on TVET streams, however, received astonish promotion due to political empowerment and government proactive action to combat lack of skilled-employees in the nation. This article frames the career adaptability as primal factors in synchronizing graduates workforce readiness with the employment landscape. The discussion leads to understanding the career adaptability dimension progression among Malaysian vocational college students. The relationship between selected variables of career future concern, personal goal orientation, perceived social support and career adaptability was investigated. The research was conducted using quantitative approach by self-administering questionnaire booklet and distributed to 226 students in six fields of study who are currently enrolling in Diploma program using purposive sampling technique. Descriptive and inferential statistics was utilized using SPSS Versions 23 to acquire the relationship based on the formulated research questions. Future direction towards understanding the relationship that may exist between career adaptability and the aforementioned variables will suggest evocative improvements in TVET curriculum implementation and rife among the coteries of TVET stakeholders who uphold the betterment for the future grassroots of the nation.*

**KEYWORDS:** Career adaptability, Technical and Vocational Education and Training (TVET)

### 1.0 INTRODUCTION

Career adaptability refers to individual flexible features that work towards their careers to cope with uncertain conditions. In the pursuit of Malaysia's goal of becoming an industrialized nation by 2020 and increasing population aging by 2030, there is a need to prepare workforce with a degree of career adaptability in order to improve the efficiency of the workforce. It is estimated that 3.3 million jobs will be created by 2020 in the government's initiative through (National Key Economic Area) NKEA where 1.3 million of those jobs need to be filled by graduates of Technical and Vocational Training Education (Department of Human Resources Development, 2011). This mission is achievable by having intellectual graduates, positive, spontaneous and flexible work attitudes to equip themselves with relevant and current skills and possess technical information appropriate to the labour market in the country.

Structural changes and work environments have merged new technologies that require multiples career skills effectively. This drastic change has changed the norm of career and made it unlimited in the field that career development is more relevant to the 21st century. The change of structure also moves in tandem with post-modern globalization in the global economy. Therefore, the job market requires a career adaptability skills among the workforce. As such, career adaptability skills are based on self-aspiration in knowledge-driven economies with the continuity of new technology, international business, and worldwide services that are most important in the job market today (Dickmann & Doherty, 2008; Maimunah Ismail, Azlini Ali, & A. Lawrance, 2012).

Therefore, Technical and Vocational Education and Training (TVET) students in Malaysia to be exposed to the idea of career adjustment skills to enable them to compete in an ever-changing job market

in line with the ability to compete. Students may be exposed to learning to identify themselves and the environment in an effort to understand their tendencies and values, and motivations to equip them in with the chosen course for future careers. Indirectly, they create awareness of career adjustment skills within themselves. However, this study predicts career adjustment skills among students who are related the variables of career future concern, personal goal orientation, and perceived social support.

### **1.1 Changes in Career Structures**

The history of human civilization and development is always related to the role of work and structure as well as environment that are constantly changing. Since childhood, an individual's vocational identity is being moulded in the family and that identity is further developed in the community, and school environment to enable them to prepare themselves in stepping into the occupation world (Savickas, 2013). Vocational personality determines the abilities related to career, interest, values, and needs. These individuals develop good and strong basis in any job or career. Career acts as the mediating factor between internal personal world and external world- community (Parker, 2002). This relationship or medium is important for an individual in making their life significant through chosen job or career. The term career, according to Sullivan and Baruch (2009) is defined as the relationship of an individual with job's organisation.

Continuous changes in career norms have given rise to a new term which is borderless career or smart career that is more relevant with the 21<sup>st</sup> century. This structural change encouraged the need for work force to possess career adaptability skills in order to adapt themselves with the new career changes. The limitations of organisations have gone through transformation towards more flexible organisations where previous traditional career based on hierarchical development have been changed to career that are aspiration determinant and more individual aspiration (Dickmann & Doherty, 2008; Maimunah Ismail, Azlini Ali, & A. Lawrance, 2012). However, what becomes the utmost priority in the job market is the economy driven by new knowledge and technology as well as wide global market.

Technology changes jobs, along with the environment and skills that are needed in respective career in order to allow it to function effectively (Ajake, Oba, & Ekpo 2014). It is evident that today changes have overpowered organisations and variety of new changes are about to follow soon. These changes require career adaptability skills as a way of overcoming new job needs because the job environment itself is going to change with the presence of new technology in the form of tools and machines which will reduce the dependency on physical energy resources (Hartung, Porfeli, & Vondareck, 2008). These changes certainly bring in new challenges in the field of career development.

In addition to that, the influence of information technology and computer (ICT) reduced the labour force drastically in the job market (Obi, Oye, Mohd, & Bernice, 2012). The presence of new technology and economic landscape changes are no longer questioned in its ability of creating new career opportunities that need new knowledge and adaptability skills in order to work effectively. The reshuffle of organisations those are continuous in the aspect of job structure also encouraged international economic landscape changes that need employers and employees to equip themselves with career adaptability skills. It is clear that in the traditional model, hierarchical employer skill focus contributed towards a few career skills and self-management today (Ebberwein, Krieschok, Ulven, & Prosser, 2004). According to Rashid (2011), the diversity of work skills include practical and communication skills that are relevant to the industry, which may not be taught in the classrooms. He also asserted that the needs of the workers in the future will depend on the career adaptability and needs of job market, more than academic qualifications. These changes show the need for career adaptability skills to enable the technical and vocational training students to adapt effectively in the constantly changing world of economy.

## **2.0 BACKGROUND OF STUDY**

Career adaptability is a psychosocial construct that refers to the individual's ability to cope with current or future assignments in career, career transition, and trauma (Savickas, 1997). At present, the need for career modifications in the local and world work market is increasing (Eichhorst et al., 2012). The need for these career modifications is seen to be more dynamic from developing countries as well as with low unemployment rates compared to developing countries with high unemployment rates.

Career adaptability is an important psychosocial construct as it easily shows career readiness to tackle changes in work environments (Savickas, 1997). Career adaptability cannot be separated from the

21st century labour market. This is because the traditional work structure has opened up new space to open up the way to implement it. It is also a custom if today there is a necessary skill in the 20th century, but it is no longer needed at this time. This is because; most employers will be looking for workers with diverse skills capable of solving tasks and problems in the organization (Barto, Lambert & Brott, 2015). So unquestionably, career adaptability is needed in today's workforce to effectively address the changes that take place in the change of the career structure and the environment.

This drastic change is driven by the constant impact of new technologies in all areas and has indirectly created some new job opportunities with existing skills (Stoltz, Wolff, Monroe, Farris, & Mazahreh, 2013). This change in work and job situation requires highly skilled worker employees. Those who have worked as well, such as graduates and students who are not yet graduates also need to have career modality skills to cope with these challenges. Career diversity allows employees to easily change their careers, deal with changes in recent situations, and also feel satisfied with their work (Eshelman, 2013). Students, as well as adolescents, need a career adjustment for a smooth transition from school to a career realm. Career qualification is crucial for the preparation of the career preparation process and the readiness of students of higher education institutions especially Technical and Vocational Education and Training (TVET) students as they will experience the most difficult and sensitive levels in determining their choice of career which will affect the process of career transition them (Magruder, 2013).

At this stage, it is important to differentiate some terms and related terms such as career paths, career flexibility, and career readiness used in this study. Marketability is defined as a set of achievements such as attributes, skills, and knowledge required by every job market participants to enable all parties like themselves, employers, communities, and economies to benefit from such skills (Poon, 2014). Career readiness at other angles has been defined as an individual's capacity to correctly take career-related decisions (Coetzee, Ferreira, & Potgieter, 2015). From these writings and sources, it is found that there is a subtle link between career paths, career modality, and career readiness. In conclusion, career adaptability relates to the career preparedness needed to overcome the changing marketplace of work.

In general, this study aims to examine the career adaptability among students who take the final year diploma program at Vocational College in Selangor. The specific objectives are:

1. To identify respondents' demographics in terms of gender
2. To identify respondents' demographics in terms of field of study
3. To determine the relationship between future career concerns, personal goal orientation, perceived social support.

### **3.0 LITERATURE REVIEW**

Career adaptability skills are seen as an ability to enable someone to adapt or adapt to changing work situations (Ebenehi, Rashid & Bakar, 2016). Career adaptability skills make individuals ready for constant change in ensuring the suitability of changing job changing situations. Savickas (1997) describes career adjustment skills are a willingness to adapt to the expected task and prepare the role of work with unexpected changes driven by the situation of the work situation. Career adaptability skills are also seen as an individual tendency in looking at the ability to plan and alter career plans in unpredictable situations (Rottinghaus, Day, & Borgen, 2005). Hirschi (2010) also describes career adaptability as a model where the willingness to choose, plan, explore and optimize to produce high career modifications. Many researcher and career development theorists see career modifications in terms of management and engagement (Rottinghaus, Buelow, Matyja, & Schneider, 2012).

From the perspective of career development theorists Savickas and Porfeli (2011) there are 4C which make resources in career adaptability include concern, control, curiosity and confidence. Each dimension contains attitude variables, beliefs and competencies to shape behavior that can be used for adaptability. Attitudes affect behaviour while beliefs determine behavior (Hagger, Polet, & Lintunen, 2018). Concerns include the willingness to respond to the needs of the future work environment. This willingness is important for someone's future. Control is the tendency to think in a manageable way, it requires the use of strategies to match the needs of different backgrounds and external influences in certain contexts. Curiosity refers to the exploration of opportunities and social possibilities. Confidence is one's aspiration and objective regardless of difficulty (Savickas et al., 2009; Savickas & Porfeli, 2011). All 4C are important for predicting career adaptability among highly educated students (Hinrichs & Is, 2014).

Highly educated students, for example, youths most express their concern for future careers that result in the anxiety, stress and depression experienced by those youths who influence their level of confidence. Furthermore, social support receipts help them to reduce stress and increase confidence in the process of choosing a career. More confidence is needed in them to develop self-directed goals that will shape their career modality skills. In conclusion, highly educated learners need career future concern, personal goal orientation, and perceived social support capable of defining career adaptability skills (Ebenehi et al., 2016).

### **3.1 Career Future Concern**

In general, young people around the world are concerned about their future and it is manifested through personal welfare, academic success, social life, family background, marriage, career choice and employment. One of the issues in career development involving a career involving highly educated students is the future career concern which relates to their career professionalism skills. Future career concern also relate to individual feelings including dislike, uncertainty, and concerns associated with future working life. Future career concerns are explained through individual concerns over careers whether they are worried or sorry, depression, excitement or pressure in planning future work (Savickas, Passen, & Jarjora, 1988). Future career concerns also refer to the interpretation of an individual in managing what is important and necessary to the individual's career development (Code & Comm, 2006).

Future career concerns have four dimensions where it can be understood and measurable. These dimensions illustrate individual careers' careers about their future career and it encompasses self-potential, negative outlook, career awareness and balance of life and career (Rottinghaus et al.2012). A study in Iran among Isfahan university students from (Yousefi et al., 2011) shows career concern has demonstrated career adaptability skills.

### **3.2 Personal Goal Orientation**

Self-oriented goals refer to self-driven attitude or behavior toward a particular task in a given situation. Human behavior is usually oriented towards goals and behaviors identified in positive attainment or to avoid negative attitudes (Bandura, 1986). A person's experience, behavior, and understanding in a situation illustrate the type of self-determination of goals, and the theorists consider that it is very important in the career development process such as the highly educated student (Elliot & Harackiewicz, 1996).

Researchers have proven that individuals with high orientation goals tend to learn new skills, tough tasks, and to succeed in overcoming the challenges (Garcia et al., 2012). Students with high learning-oriented goals tend to have high career-oriented skills as their characteristics always want to learn new skills, solve tasks, and deal with problems are fundamental to career adaptability skills (Ebenehi, Rashid & Bakar, 2016).

### **3.3 Perceived Social Support**

Received social support is important to the younger generation, especially at the stage of making important decisions in life such as, choosing future careers. Acceptance of social support can be described as a form of self-perception or other person's caring feelings toward someone, where it comes in the form of moral or physical from social communities. Conceptually, received of social support is seen as a person's understanding of being guarded and loved, formed with value and identity and accepted in the community (Cobb, 1976). Among the highly educated students receiving social support is sourced from family, friends, students, lecturers, educational institutes and the like (Wiesenbergs & Aghakhani, 2006). Social support receipts are identified as potential resources for specific career information and advice. The social support acceptance function for higher education students is to help their shift from school to working life (Murphy et al., 2010).

Social support receipts are synonymous and positively related to career development (Chen et al., 2012). It explains that support for social support acceptance can contribute to the development process of career adaptability skills among youth, such as highly educated students in Malaysia. In a study that has been conducted in Turkey to study whether acceptance of social support can determine the career exploration has proven that families and friends have relationships with career exploration(Turan, Çelik, & Turan, 2014).The study also reports that families, friends and the like also expect a career exploration of highly educated youth.

#### 4.0 METHODOLOGY

This research employed the quantitative approach in the implementation of the study through the survey method by making the questionnaire as a data collection medium to identify aspects that may influence the study variables (Creswell, 2014; Gay, Mills, & Airasian 2009). Among the reasons for the survey method selected in this study is the suitability of the research situation to be implemented at a particular time only in addition to the highly effective and satisfactory descriptive information acquisition. In addition, this study chose the survey method because of the larger sample size that makes the use of standard questionnaires in the process of collecting data is more practical and relevant (Gay & Arasian, 2003). In this questionnaire, researchers have adopted five point likert scales. Researchers can also identify the consistency between each variable found in the study in the form of these descriptive-correlations. (Sekaran, 2003).

The sample comprises of 226 vocational college students, specifically final year diploma students majoring in electrical and electronic engineering technology, civil engineering technology, mechanical and manufacturing engineering, business, information and communication technology, as well as hospitality and tourism. 122 participants are male students (54%) and 104 (46%) are aged 19 years old. They are studying electrical and electronic engineering technology, (8.8%), civil engineering technology (4.0%), mechanical and manufacturing engineering technology (33.2%), business (28.8%), information and communications technology (10.6%), and hospitality and tourism (14.6%).

Each Vocational College student who has been chosen as a sample of the study needs to answer the questionnaire which consists of five parts, namely A, B, C, D, and E. While the research instrument has been broken down into five different parts which have different functions to measure each of the variables found in this study:

- I. Part A: Student profile questionnaire
- II. Part B: Career future concern
- III. Part C: Personal goal orientation
- IV. Part D: Perceived social support
- V. Part E: Career adaptability

#### 5.0 FINDINGS AND IMPLICATIONS

The *t*-test analysis was used to determine whether there is a significant difference between the mean of career adaptability across genders. The result indicated that there is no significant difference between career adaptability for male ( $M = 4.1974$ ,  $SD = 0.3444$ ) and female ( $M = 4.1202$ ,  $SD = 0.03488$ ;  $t(224) = 1.567$ ,  $p = 0.119 > 0.05$ ).

**Table 1: *t* test analysis across gender**

Group	Number of students	Mean	Standard Deviation	<i>t</i>	df	Sig.
Male	122	4.1974	.03444	1.567	224	.119
Female	104	4.1202	.03488	1.575	222.056	.117

One-way ANOVA result showed that there is no significant difference between the mean field of studies and career adaptability which the result is  $F(5,225)=1.473$ ,  $p=0.200>0.05$ . Therefore, there is no difference between field of study and career adaptability.

**Table 2: ANOVA analysis**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.000	5	.200	1.473	.200
Within Groups	29.877	220	.136		
Total	30.877	225			

The result of correlation coefficient between career future concern and personal goal orientation are shown in table 3. From the table, the career future concern and personal goal orientation have value [N= 226,  $r = .499^{**}$   $p = 0.01$ ] and this relationship is moderate. It is showed that career future concern and personal goal orientation have moderately positive relationship with career adaptability.

**Table 3: Pearson Correlation for Career Future Concern and the mean of Personal Goal Orientation**

	Mean Personal Goal Orientation	Correlation Interpretation
career future concern	.499**	Moderately positive relationship

Pearson correlation shown that there is positive significant between career future concern with the mean of perceived social support which is [N= 226,  $r = .415^{**}$   $p = 0.01$ ]. This relationship is moderate. This showed that career future concern and perceived social support have moderately positive relationship with career adaptability.

**Table 4: Pearson Correlation between Career Future Concern and mean Perceived Social Support**

	Mean Perceived social support	Correlation Interpretation
career future concern	.415**	Moderately positive relationship

Pearson correlation shown that there is positive significant between personal goal orientation with the mean of Perceived Social Support which is [N= 226,  $r = .209^{**}$   $p = 0.01$ ] and this relationship is weak (Connolly & Sluckin, 1971). This showed that personal goal orientation and perceived social support have weakly positive relationship with career adaptability.

**Table 5: Pearson Correlation between Personal Goal Orientation with the mean of Perceived Social Support**

	Mean Perceived social support	Correlation Interpretation
Personal goal orientation	.209**	Weakly positive relationship

## 6.0 CONCLUSION AND RECOMMENDATIONS

This study proves personal goal orientation, career future concern and perceived social support that statistically predicted career adaptability skills among students of vocational colleges in Malaysia. This study also found that there is no significant difference between career future concern, personal goal orientation, perceived social support and career adaptability skills. Furthermore, this study aims to enrich the existing knowledge on the career development of young adults in Malaysia, specifically TVET students. It has also created awareness and provides information on career adjustment skills among higher education students which is very important to them. However, there are several limitations including, first, not all vocational college students are involved in this study, this calls for careful steps to be taken in making decision and second, t-test analysis was used to analyse the effect of gender on career adaptability. Furthermore, the correlation analysis was used to determine the relationships between the variables. Correlation analysis was chosen as the researcher is interested to understand the relationships between these variables (Creed & Fallon, 2009; Turan et al., 2014; Yousefi et al., 2013). Based on the reasons mentioned, it is suggested for future studies to be conducted on students taking other academic programmes in Malaysian public higher learning institutions, and future researchers should try using multiple linear regression (MLR) to analyse and determine the best variable that could predict career adaptability. Furthermore, having career adaptability skills does not guarantee that the students will use this skill in their career. In this regard, it is also important to conduct a follow-up study to see how graduates use this skill in their workplace. In addition, this study needs to be replicated worldwide, given its importance in providing

students with skills that allow students' smooth transition from the campus environment of Malaysian public skill training institutions into the labour market.

The increase in career adaptability among vocational college students will increase students' engagement in the public economy and indirectly, reduce unemployment. Thus, the implication of this study to technical and vocational education and training (TVET) is that it will facilitate curriculum and practices that encourage higher education students to improve their career adaptability skills by providing opportunities for setting personal goal orientation, career future concern and perceived social support from family, friends, and others. TVET institutions should also put an emphasis towards students' career adaptability skills by providing a database that allows them to explore their career options and to conduct more continuous career intervention programmes with the help of experts in career development.

## REFERENCES

- Ajake, U. E., Oba, A.N., Ekpo, T.E., (2014). Enriching Higher Education Curriculum to Meet the Challenges of 21st Century in Nigeria. *Journal of Educational and Social Research*, 4(3), 21–30. <https://doi.org/10.5901/jesr.2014.v4n3p21>
- Bandura, A. Social foundations of thought and action: social cognitive theory. (1986), Englewood New Jersey.
- Barto, H., Lambert, S., & Brott, P. (2015). Career adaptability, resiliency and perceived obstacles to career development of adolescent mothers. *The Professional Counselor*, 5(1), 53.
- Chen, S. H., Fu, C. M., Li, R. H., Lou, J. H., & Yu, H. Y. (2012). Relationships among social support, professional empowerment, and nursing career development of male nurses: A cross-sectional Analysis. *Western Journal of Nursing Research*, 34, 862-882.
- Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine*, 38(5), 300-314.
- Code, M. N., Comm, B., Bernes, K. B., Gunn, T. M., & Bardick, A. D. (2006). Adolescents' Perceptions of Career Concern. *Canadian Journal of Couseling*, 40(3), 160-174.
- Coetzee, M., Ferreira, N., & Potgieter, I. L. (2015). Assessing employability capacities and career adaptability in a sample of human resource professionals. *SA Journal of Human Resource Management*, 13(1), 1-9.
- Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches - 4th ed. *SAGE Publication, Inc.* 251-260.
- Dickmann, M., & Doherty, N. (2008). Exploring the career capital impact of international assignments within distinct organizational contexts. *British Journal of Management*, 19(2), 145–161.
- Ebberwein, C. A., Krieshok, T. S., Ulven, J. C., & Prosser, E. C. (2004). Voices in transition: Lessons on career adaptability. *The Career Development Quarterly*, 52(4), 292–308. doi:10.1002/j.2161-0045.2004.tb00947.x
- Ebenehi, A. S., Rashid, A. M., & Bakar, A. R. (2016). Predictors of career adaptability skill among higher education students in Nigeria. *International journal for Research in Vocational Education and Training (IJRVET)*, 3(3), 212-229.
- Eichhorst, W., Rodríguez-Planas, N., Schmidl, R., & Zimmermann, K. F. (2012a). A roadmap to vocational education and training systems around the world. *SAGE Journal*, 8(2), 314-337.
- Elliot, A. J., & Harackiewicz, J. M. (1996). Approach and avoidance achievement goals and intrinsic motivation: a mediational analysis. *Journal of Personality and Social Psychology*, 70(3), 461–475.
- Eshelman, A. (2013). Socioeconomic Status and Social Class as Predictors of Career Adaptability and Educational Aspirations in High School Students. *Journal of Southern Illinois University Carbondale*, 46-55.
- Garcia, P. R. J. M., Restubog, S. L. D., Toledano, L. S., Tolentino, L. R., & Rafferty, A. E. (2012). Differential moderating effects of student- and parent-rated support in the relationship between learning goal orientation and career decision-making self-efficacy. *Journal of Career Assessment*, 20(1), 22-33.
- Gay, L. R., & Airasian (2003). Educational Research: Competencies for Analysis and Applications (7th ed.). Upper Saddle River, NJ: Merrill/Prentice Hall.

- Gay, L. R., Mills, G., & Airasian, P. (2009). Ch. 7: Survey Research. *New Scientist*.  
[https://doi.org/10.1016/S0262-4079\(09\)63022-0](https://doi.org/10.1016/S0262-4079(09)63022-0)
- Hagger, M. S., Polet, J., & Lintunen, T. (2018). The reasoned action approach applied to health behavior: Role of past behavior and tests of some key moderators using meta-analytic structural equation modeling. *Journal of Social Science & Medicine*, 213, 85-94.
- Härtung, P. J., Porfeli, E. J., & Vondracek, F. W. (2008). Career adaptability in childhood. *Journal of Career Development*, 57(3), 63–75.
- Hirschi, A. (2010). Swiss Adolescents' Career Aspirations: Influence of Context, Age, and Career Adaptability. *Journal of Career Development*, 36(3), 228-245.
- Jabatan Pembangunan Kemahiran (JPK) Kementerian Sumber Manusia. (2011). *Rationalizing the implementation of Technical Education and Vocational Training (TEVT)*.
- Kayikci, Y. (2018). Sustainability impact of digitization in logistics. *Procedia Manufacturing*, 21(March), 21, 782–789.
- Magruder, J. A. (2013). Psychological birth order and career adaptability in an at-risk college population. *Dissertation Abstracts International: Section B: The Sciences and Engineering*.  
<https://doi.org/10.1017/CBO9781107415324.004>
- Maimunah Ismail Azlini Ali, & A. Lawrance I (2012). Career advancement of academics at public and private universities in Malaysia: Implications for human resource development. *Asia-Pacific Education Researcher*.<https://doi.org/10.1016/j.jormas.2018.06.004>
- Murphy, K., Blustein, D., Bohlig, A., & Platt, M. (2010). The college-to-career transition: An exploration of emerging adulthood. *Journal of Counseling and Development*. <https://doi.org/10.1002/j.1556-6678.2010.tb00006.x>
- Parker, P. (2002). Working with the intelligent career model. *Journal of Employment Counseling*, 39, 83–96.
- Poon, J. (2014). Do real estate courses sufficiently develop graduates' employability skills? Perspectives from multiple stakeholders. *Education and Training*. <https://doi.org/10.1108/ET-06-2013-0074>
- Rashid, A. M. (2011). Career Development interventions in technical and vocational schools in Malaysia. *The Journal of Human Resource and Adult Learning*, 7(2), 23–33.
- Rottinghaus, P. J., Buelow, K. L., Matyja, A., & Schneider, M. R. (2012). The career futures Inventory-Revised: Measuring dimensions of career adaptability. *Journal of Career Assessment*.  
<https://doi.org/10.1177/1069072711420849>
- Rottinghaus, P. J., Day, S. X., & Borgen, F. H. (2005). The career futures inventory: A measure of career-related adaptability and optimism. *Journal of Career Assessment*.  
<https://doi.org/10.1177/1069072704270271>
- Savickas, M. L. (1997). Career Adaptability: An Integrative Construct for Life-Span, Life-Space Theory. *The Career Development Quarterly*. <https://doi.org/10.1002/j.2161-0045.1997.tb00469.x>
- Savickas, M. L. (2013). Career Construction Theory and Practice. In *Career development and counseling: putting theory and research to work*. <https://doi.org/10.4135/9781412952675.n34>
- Savickas, M. L., & Porfeli, E. J. (2011). Revision of the career maturity inventory: The adaptability form. *Journal of Career Assessment*. <https://doi.org/10.1177/1069072711409342>
- Savickas, M. L., Passen, A. J., & Jarjoura, D. G. (1988). Career concern and coping as indicators of adult vocational development. *Journal of Vocational Behavior*. [https://doi.org/10.1016/0001-8791\(88\)90035-8](https://doi.org/10.1016/0001-8791(88)90035-8)
- Sekaran, U. (2003). *Research and Markets: Research Methods for Business - A Skill Building Approach*. John Wiley & Sons. <https://doi.org/http://dx.doi.org/10.1108/17506200710779521>
- Stoltz, K. B., Wolff, L. A., Monroe, A. E., Farris, H. R., & Mazahreh, L. G. (2013). Adlerian lifestyle, stress coping, and career adaptability: Relationships and dimensions. *Career Development Quarterly*.  
<https://doi.org/10.1002/j.2161-0045.2013.00049.x>
- Sullivan, S. E., & Baruch, Y. (2009). Advances in career theory and research: a critical review and agenda for future exploration. *Journal of Management*, 35(6), 1542– 1571.  
doi:10.1177/0149206309350082
- Turan, E., Çelik, E., & Turan, M. E. (2014). Perceived social support as predictors of adolescents' career exploration. *Australian Journal of Career Development*.  
<https://doi.org/10.1177/1038416214535109>
- Wiesenberg, F., & Aghakhani, A. (2006). An Exploration of Graduate Students' Career Transition



- Experiences. *Canadian Journal of Counselling*.
- Yousefi, Z., Abedi, M., Baghban, I., Eatemadi, O., & Abedi, A. (2011). Personal and situational variables, and career concerns: predicting career adaptability in young adults. *The Spanish Journal of Psychology*, 14(1), 23

## Preliminary Study on Identifying Factor That Influence Job Satisfaction among Hospitality Graduates in Hotel Industry

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### ABSTRACT

*In line with the progressive globalisation, the Higher Education of Technical and Vocational Education and Training (TVET) plays a vital role in producing hospitality graduates with multi skills and high sense of competitiveness. Nonetheless, it is found that hospitality graduates are less dominant in achieving satisfaction in career especially in hotel industry. Therefore, a research is conducted to identify the factor that drives the graduates to achieve job satisfaction especially in the hotel industry. The factor chosen is determined based on the readings and literature review from the previous studies. Apart from that, research is also done to measure the level of job satisfaction of the graduates with the job consistency in the hotel industry. Job Satisfaction Model used in this study. The method of quantitative has been chosen as the research method. A number of 30 hospitality graduates from hotel industry have been chosen randomly as respondents. Data is analysed descriptively using frequency, mean score, standard deviation and correlation. Results show that four levels of satisfaction which are work environment, salary, acknowledgement and colleagues, are at high score and there is a correlation between job satisfaction and job consistency.*

**KEYWORDS:** TVET; Hospitality; Job Satisfaction; Graduates

## 1.0 INTRODUCTION

In the competitive global service industry, hospitality industry (i.e. hotels and tourism) is one part of the industries that extensively looking alternative strategies to face the ever-changing demand from customers. Most of the services in the hospitality are mainly provided by employees. Employees play important roles for making sure the services are good and meet the customer's need. In this case, when employees are satisfied with their job such good working hours, healthy working environment) can resulted the high-quality service can be provided to the customers. The satisfied employees can be more productive, positive and creative when dealing with the customers as compared to the dis-satisfied employees. However, one of the main challenges hospitality industries is shortage of the qualified employees with good mental health (Kong et al., 2010; Kim, 2016). Furthermore, hospitality employees show a low level of job satisfaction but a high turnover intention (Kim et al., 2016). Unsatisfied employees show produces low morale among workers and low morale at work is highly undesirable, which in turn decrease service quality and job performance (da Borralha, 2016; Bednarska, 2014; Tuna et al., 2016).

Job satisfaction is one of the main factors of the individual to determine the desire to do works or passion for doing a work. Other scholar defined that job satisfaction is all about an individual's feelings about the work, work environment, pay, organization culture, job security. Job satisfaction is one of the essential elements requires by an employee toward their career. Job satisfaction also acted as one of the factors to achieve the company reputation (Judge et al., 2017). A number of job satisfaction studies was conducted with extensive research in different research objectives various perspectives. For example, some studies analyzed the organizational and individual factors that influence job satisfaction (Kara et al., 2012; Kong et al., 2018; Mader et al., 2018). Karatepe and Sokmen (2006) explored the influencing

factors from the perspective of work and family life. Besides, previous studies have supported the notion that job satisfaction consist of several factors - such as salary, type of works, position promoting, management and supervision, the relationship among employee, safety, organization structure, personnel and work balance (Hamilton et al, 2017).

Based on the previous study, some of the factors found that influence the work satisfaction such as financial (i.e. salary received is no suitable with the work given) (Wahab et al 2009). Ariza, et al.,(2018) reaffirmed these factors, holidays, weekend and break), work during the weekend, a competitive salary, less staff training, low professional, no appreciation, and low-class status can affect the work satisfaction. In this regards, all the aforementioned factors on achieving job satisfaction in hotel industry, it is bring to the educational challenges. There is a positive effect on graduates to be continued to work in that organization. Besides, some finding shows high salary offers high work satisfaction if compared to the low-income employee (Kien, Kok & Bujang, 2010).

Therefore, this study was conducted to determine the main factors that contribute to the job satisfaction among hospitality's workers/graduate. The rest of this paper is discussed as Section 2.0 is literature review, Section 3.0 is Methodology, Section 4.0 is Findings, Section 5.0 Discussion and Section 6.0 is Conclusion

## **2.0 LITERATURE REVIEW**

Job satisfaction has been defined in a variety of ways. Job satisfaction is defined as the pleasurable emotional state resulting from the appraisal of one's job as achieving or facilitating the achievement of one's job values (Ramoo, Abdullah & Chua, 2010). One of the critical factors that increase work satisfaction is good salary (Kaliski, 2007). Job satisfaction is an essential element in an industry other than the academic field. Based on Egan, Yang & Barlett (2004), job satisfaction is also influenced by climate change in the organization in order to fulfil the individual need. There is the number of needs and values requires and it depends on the works and how work can be done based on different employee's needs.

Various theories are forwarded in job satisfaction literature. According to the Herzberg's Theory (1959), one of the issues need to be concerned is salary. Employees expect to be fairly paid for the work they've done. If this expectation is not met, then employees will probably be dissatisfied with their jobs, adversely affecting their productivity. Herzberg's theory can be very helpful for top management or human resource in advising organizations on how to maintain employee satisfaction. Halim (2016) stated that Job satisfaction level is a reflection of the employee in doing the job. Maslow Theory (1954), however, discussed on achieving something that hard, employee needs to start from the beginning. Kaliski (2007) stated that Job satisfaction level such as appreciation, salary and goals can be satisfaction benchmark for determine employee's career adaptability. Besides, Hsieh (2012) discussed that comfortable of an employee was subjective that influence by personnel. Graduates do not only influence by vacancy, but it is also considered many aspects such as salary and job satisfaction (Nooriah, Zakiah & Norain, 2016).

### **2.1 Antecedent of Job Satisfaction**

Salary or pay is a form of episodic compensation from a firm to its worker, which is completely stated in an employment contract. There are a number of studies that proposed the Robst et al (2016) have studied compared labor market outcomes for graduates with economics and business administration majors. They have stated that economics graduates earn higher wages than business graduates. Basically, economics graduates were more likely to work in jobs unrelated to the degree field. Amismatch had greater wage effects for business majors, and also leads to lower job satisfaction. Lee and Sabharwal (2016) have examines how job matching and salary can explain recent college graduates' job satisfaction in different sectors (i.e. public, non-profit, and for-profit). The results imply that while education-job match increases job satisfaction in all three sectors, for-profit workers may compensate the loss in job satisfaction due to poor match with increased satisfaction from higher salary.

Besides, colleagues also play an important factors as the In an organization, people work in groups and interact with them regularly, either formally or informally, which has a great impact on the level of their satisfaction. Employees whose job is similar communicate with one another and tend to share ideas

and thought for job elements like the work itself, pay, working conditions, rules, supervisor, manager, (Wahab, 1992). Nurul, Nawi, Ma'rof dan Noor (2016) stated that a person who is offered with a higher salary and surrounded by good workmate's attitudes could influences employee to be favourable toward their work. Supervisor, workmate, sub-ordinate and organization play an essential role in hospitality's graduate to achieve high work satisfaction. However, if all the stakeholders do not take play their roles equally, employees will tend to not satisfied with the job given (Azlina & Shiqah, 2010). Therefore, a good relationship among employees/ workmates is needed to determine the high level of working satisfaction, specifically hospitality graduates.

### 3.0 METHODOLOGY

A quantitative research design was utilized for this phase of the study in order to determine job satisfaction level among hospitality graduates. To support the descriptive analysis, an observation was conducted in this study as suggested by Hamidah, (2007). Data was collected from primer (i.e. available in journal) and secondary (i.e. article dah related to the research). From the selected journal, all the effects and factors that contributes to the job satisfaction study was sorted. Corresponding to the selected factors, a survey questionnaire was developed. The questions/items in the questionnaire was adopted and modified that suggested by Spector, 1996. The target population for this research study was graduates from hospitality, tourism, and culinary arts programs from Vocational College Alumni the last three years. From the employment database, a total of 50 graduates were randomly selected. However, a total 30 graduates took part on this study.

#### 3.1 Research Instrument

The instrument for data collection was a structured questionnaire. This questionnaire consists of six sections; Section A is demographic profile; Section B, C, D and E are levels of job satisfaction in Hotel Industry; and Section F is graduates consistency. The reliability and validity of this questionnaire were determined by *Cronbach's Alpha* ( $\alpha$ ) analysis. The *Cronbach's Alpha* ( $\alpha$ ) is 0.910 was obtained for each of the items provided.

#### 3.2 Data Analysis

To analyse the problem of this study, descriptive statistics and inferential statistics was used. Descriptive statistics was used to summarize a set of data, while inferential statistics was used to create a summary of the population's perceptions based on the population sample data (Idris, 2013). A Statistical Package for Social Science for Windows Version 22.0 (SPSS V22.0) was used as the analysis tool. While results from Section A is obtained using a descriptive statistical method to find percentage and frequency values. Section B is obtained in a mean score and standard deviation. To conduct the inference statistics analysis such as correlation, a group distribution needs to be determined first. A normal distribution can be determined based on *Kolmogorov-Smirnov*, *Shapiro-Wilks*, *Skewness* & *Kurtosis*. In this study, data is usually normal distributed and parametric analysis can be conducted.

### 4.0 FINDING

#### 4.0.1 Respondent's profile

A total of 30 graduates were involved in this study. Table 1 shows the respondent's profile, which the majority of female graduates, 63.3% and only 36.7% of male graduates were involved. The respondent's that aged 15 – 25 years old, 73.3%; 25 – 34 years old, 20% and 6.7% that 35 -44 years old took part in this survey. Most of the respondents were graduates in Diploma, 73.3%, and the rest of 16.7% were bachelor degree, and the remaining 10% only had a certificate in Hospitality-related courses. For the year of working experiences, most of the respondents were only have less than five years of working experiences, 83.3% and 13.3% that was having 5 – 14 years. Only one respondent that was having more than 15 years of working experience was recorded. From that, 23 of respondents were gained RM900-RM2000 of income, 20 % that gained RM2000-RM5000, and only one respondent that obtained income

in the range of RM5001-RM 10000.

Table 1 Respondent's Profiles

Demographic	Category	Frequency (n)	Percentage (%)
Gender	Male	11	36.7
	Female	19	63.3
Age	15 – 25 years old	22	73.3
	25 – 34 years old	6	20.0
	35 – 44 years old	2	6.7
Education Level	Certificate	3	10.0
	Diploma	22	73.3
	Bachelor Degree	5	16.7
Working Experience	Less than 5 years	25	83.3
	5 – 14 years	4	13.3
	15 – 24 years	1	3.3
Income	RM 900 – RM2000	23	76.7
	RM 2001 – RM5000	6	20.0
	RM 5001 – RM10000	1	3.3

#### 4.0.2 Job satisfaction level of hospitably graduates in Hotel Industry.

Table 2 shows the mean score, standard deviation, SD of high-level of working satisfaction in terms of colleagues factors. In overall, (M= 3.97, SD= 0.64) shows the interpretation of higher working satisfaction. The item '*My colleagues always have given helps when needed*' obtained the higher mean score (M= 4.13, SD= 0.57). Item '*My colleagues always shared ideas*' shows the lowest mean score (M= 3.87, SD= 0.68). However, it is still in higher job satisfaction levels.

Table 2: Interpretation of Higher Mean Score for Work Satisfaction in terms on Colleagues

No	Items	SD	Mean	Interpretation
1	My colleagues always shared ideas	0.68	3.87	High
2	My colleagues are a responsible person	0.55	3.90	
3	The relationship among colleagues is always understood to each other	0.71	3.90	
4	My colleagues always have given help when needed	0.57	4.13	
5	My colleagues always act nicely	0.67	4.03	
6	My colleagues always gives support to continuously work hard	0.64	3.93	
7	I have positive relationship among my colleagues	0.59	4.00	
8	My colleagues always give co-operations in doing jobs	0.61	3.97	
9	In overall, I am satisfied working with my colleagues	0.76	4.03	

Table 3 shows the interpretation of the lowest mean score of Job Satisfaction in term of salary domain. In overall (M= 3.23, SD= 0.89) shows the medium/moderate satisfaction of working satisfaction. Item '*Salary was given more than normal rate*' obtained lower mean score in this section (M=3.07, SD= 0.87). Item '*Salary given based on my preference.*' is obtained a higher score of the moderate satisfaction section (M=3.43, SD= 0.94).

Table 3: Interpretation of Lowest Mean Score for Work Satisfaction in Term on Salary

No	Items	SD	Mean	Interpretation
1	Salary given based on my preference	0.94	3.43	
2	Salary given more than normal rate	0.87	3.07	
3	Salary given enough to support my family	0.88	3.30	
4	I can saving my salary	1.09	3.10	Medium
5	I receive salary increments based on collected points	0.90	3.13	
6	Salary received is equivalent with work given	0.89	3.20	
7	In overall, I am satisfied with the salary and rewards given from this hotel management.	0.67	3.40	

#### 4.0.3 Relationship between Job satisfaction level with graduate consistency in Hotel Industry

To determine the relationship status, whether it is stronger or weak between satisfaction and with graduate consistency, the Pearson correlation value was used. Based on the finding in Table 4,  $r$  value = -0.28 and  $p$ -value = 0.025 where  $p > 0.01$  was obtained. The finding shows that the null hypothesis is accepted where there is no significant relationship between Job Satisfaction and with graduate's consistency. The negative,  $R$ -value is low shows that the level of Job Satisfaction and graduate consistency is also weak.

Table 4 Correlation

Variable	Level of Job satisfaction	
	R	Signifant value, $p$
Graduate's consistency in Hotel Industry	- 0.238	0.205

## 5.0 DISCUSSION

This study examines factors that influence job satisfaction among hospitality graduates in term of graduate consistency. Findings show the colleagues or teammate contribute the higher impact in pertaining higher level of job satisfaction. The effective working relationships can potentially contribute to future company ventures and makes employee become more productive and positive workplace. The relationships at work can have an impact on job satisfaction, learning and using skills, staff turnover, morale, taking time off, and even our quality of life (Bakotić, et al., 2016). It is reaffirm by Wang (2017) study that revealed employees' affective commitment moderates the effects of work related roles on job satisfaction. Besides, Chen (2016) have studied the relationship of workplace humor and employee's job embeddedness can affect the job satisfaction. The finding stated that the positive working environment with humor can positively related to workplace fun and at the same time, improve companies' productivity.

Furthermore, the result of the relationship of salary with the job satisfaction was medium interpretation. It is shows that a medium salary and job satisfaction is moderate up in factors to consider in hospitality industry. However, Gupta & Grag (2017) that stated salary has major impact on job satisfaction in every individual when employed; firstly look for sufficient monetary benefits, which are reflected by person's salary. Besides, Jung & Yoon (2015) stated that employees' benefits pay level and pay structure had a significant effect on employees' job engagement, while employees' pay structure pay level pay raise and benefits affected employees' job withdrawal.

## 6.0 CONCLUSION

The employee's attitude towards the job and organization as well becomes positive when they realize that their job facilitates them in achieving their needs and values, directly or indirectly. In short, it represents the difference between employee's expectations and experience he/she derives from the job. Hotel organizations face tremendous challenges in the need to attract and retain a productive workforce.

Organizations must create new ways to keep their employees satisfied at all levels. These surveys can be conducted as a way to find out what is causing workers to be dissatisfied. Hotel industry must be willing to do what is necessary to close possible satisfaction gaps. Therefore, hotel industry need to concern about employee's so that they can offers the good quality services. To fulfil the country desired which be one of the best countries; hotel industry can be important benchmark in terms of tourism.

## REFERENCES

- Ariza, Arjona, Juan, Han, Heesup Law, Rob (2017) 'The Price Of Success: A Study On Chefs' Subjective Well-Being, Job Satisfaction, And Human Values'. *International Journal Of Hospitality Management*, Volume 69, January 2018, Pages 84-93. <https://doi.org/10.1016/j.ijhm.2017.10.006>
- Azlina Mohd Kosnin, & Shiqah Jantan. (2010). 'Tahap Stres & Tahap Kepuasan Kerja Dalam Kalangan Pensyarah Universiti Teknologi Malaysia'. *Fakulti Pendidikan, Universiti Teknologi Malaysia*, 1–8. [https://doi.org/10.1007/978-3-322-93218-1\\_17](https://doi.org/10.1007/978-3-322-93218-1_17)
- Bakotić, D. (2016). Relationship between job satisfaction and organisational performance. *Economic research-Ekonomska istraživanja*, 29(1), 118-130.
- Bednarska, M. A. (2014). Linking quality of work life to employee lifetime value in service industries—towards a research agenda. *Service Management*, 14(3), 31-38.
- Chen, P., Sparrow, P., & Cooper, C. (2016). The relationship between person-organization fit and job satisfaction. *Journal of Managerial Psychology*, 31(5), 946-959.
- da Borralha, S., de Jesus, S. N., Pinto, P., & Viseu, J. (2016). Job satisfaction in hotel employees: A systematic review of the literature. *Journal of Spatial and Organizational Dynamics*, 4(1), 4-20.
- Davis K & Nestrom JW (1985). 'Human Behavior at work.' *Organizational Behavior*, 7 edition, McGraw Hill, New York
- Egan TM, Yang B & Bartlett KR (2004). 'The Effect Of Organizational Learning Culture And Job Satisfaction On Motivation To Transfer Learning And Turnover In Tension'. *Human Resource Development Quarterly*, Vol. (15(3)
- Halim ANH (2016). 'Kecerdasan Emosi & Kepuasan Kerja Dalam Kalangan Pensyarah Di Politeknik Seberang Prai, Pulau Pinang.' Tesis UTHM
- Gupta, K., & Garg, I. (2017). Investigation of job satisfaction among employees: A case of hospitality industry in Ambala (India). *Voice of Research*, 6(1), 50-56.
- Hsieh CM (2012) 'Importance Is Not Unimportant: The Role Of Importance Weighting In QOL Measures.' *Social Indicators Research* 109 (2), 267-278.<http://www.ukm.my/geografia/images/upload/4.geografia-tourismdec14-kiki-ok.pdf>
- (Hospitaliti Dalam Pembangunan Pelancongan Di Indonesia: Perspektif Psikologi Positif Kiki Rizki Makiya1 , Habibah Ahmad1 , Hamzah Jusoh1 , Amriah Buang1 , Noralyanie Nor Azazi1 , Sri Winarni Samsir1 , Er Ah Choy Pusat Pengajian Sosial, Pembangunan & Persekitaran, Fakulti Sains Sosial & Kemanusiaan, Universiti Kebangsaan Malaysia, 43600 Bangi, Malaysia)
- Kaliski BS (2007). 'Encyclopedia of Business and Finance', Second edition, Thompson Gale, Detroit
- Kien SH, Kok WT & Bujang S (2010) 'Relationship Between Work Life Quality Of Teacher With Work Commitment, Stress And Satisfaction : A Study In Kuching Sarawak, Malaysia'. *Jurnal Teknologi*. 2010. Pp:1-15
- Kong, H., Jiang, X., Chan, W., & Zhou, X. (2018). Job satisfaction research in the field of hospitality and tourism. *International Journal of Contemporary Hospitality Management*, 30(5), 2178-2194.
- Kong, H., Cheung, C. and Zhang, H. (2010). "Career management systems: what are China's state-owned hotels practising?" *International Journal of Contemporary Hospitality Management*, Vol.22 No.4, pp.467-482.
- Kim, M., Knutson, B.J. and Choi, L. (2016), The effects of employee voice and delight on job satisfaction and behaviors: Comparison between employee generations, *Journal of Hospitality Marketing & Management*, Vol. 2 No.5, pp.563-588.
- Judge, T. A., Weiss, H. M., Kammeyer-Mueller, J. D., & Hulin, C. L. (2017). Job attitudes, job satisfaction, and job affect: A century of continuity and of change. *Journal of Applied Psychology*, 102(3), 356.
- Lee, Y. J., & Sabharwal, M. (2016). Education–job match, salary, and job satisfaction across the public,

- non-profit, and for-profit sectors: Survey of recent college graduates. *Public Management Review*, 18(1), 40-64.
- Wang, I. A., Lee, B. W., & Wu, S. T. (2017). The relationships among work-family conflict, turnover intention and organizational citizenship behavior in the hospitality industry of Taiwan. *International Journal of Manpower*, 38(8), 1130-1142.
- Mader, X., dos Santos, J. V., & Gonçalves, G. (2018). Job Satisfaction In A Tourist Resort In Portugal. *Journal of Spatial and Organizational Dynamics*, 6(3), 314-325.
- Mohamad Najib Abdul Ghafar (1999). 'Penyelidikan Pendidikan' (M/S 45). Johor: Universiti Teknologi Malaysia.
- Nurul Hudani Md. Naw, Ma'rof Redzuan & Noor Hisham Md Naw. (2016). 'Hubungan Antara Tret Personaliti Kehematan, Keterbukaan Pada Pengalaman, Ekstraversi & Kesetujuan Dengan Prestasi Kerja Dalam Kalangan Pemimpin Pendidik Bagi Sekolah Prestasi Tinggi (SBT) di Malaysia.' *Jurnal Psikologi Malaysia*, 30(1), 102-112
- Najib. M, A. G. (1999). 'Penyelidikan Pendidikan.' Skudai: Universiti Teknologi Malaysi
- Nooriah Yusof, Zakiah Jamaluddin, & Norain Mat Lazim. (2013). 'Persepsi Pelajar Prasiswazah Terhadap Kebolehpasaran Graduan & Persaingan dalam Pasaran Pekerjaan.' *Jurnal Personalia Pelajar*, 16, 77-92.
- Ramoo V, Abdullah KL & Chua YP (2010). 'The Relationship Between Job Satisfaction And Attention To Leave Current Employment Among Registered Nurses In A Teaching Hospital In Malaysia.' *Journal Of Clinical Nursing*
- Riketta, M. (2002). 'Attitudinal organizational commitment and job performance : a meta-analysis.', 266(March 2001), 257-266.
- Robst, J., & VanGilder, J. (2016). Salary and job satisfaction among economics and business graduates: The effect of match between degree field and job. *International Review of Economics Education*, 21, 30-40.
- Spector P.E. (1994). 'Job Satifaction Survey.' Department Of Pyschology: Universiti Of South Florida
- Tuna, M., Ghazzawi,I., Yesiltas, M., Tuna, A. A. and Arslan, S.(2016), "The effects of the perceived external prestige of the organization on employee deviant workplace behavior", *International Journal of Contemporary Hospitality Management*, Vol. 28 No.2, pp.366-396.



## Motivations to Continue Teaching for Experienced High School Agriculture Teachers

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### ABSTRACT

*The purpose of this study was to understand how different types of motivation (intrinsic, extrinsic, and altruistic) influence experienced high school agriculture teachers who are using the Curriculum for Agricultural Science Education (CASE) to continue teaching. CASE serves as a teaching aid for agriculture teacher to have a better interaction with students in teaching and learning. We applied qualitative research methods in this study by using an open-ended semi-structured interview approach with high school agriculture teacher. In our data collection, we used phone interviews, which were audiotaped and transcribed. Data was coded and member checked. Six themes emerged from this study. These included one major themes (motivations to teach) and five sub-themes (intrinsic motivation, extrinsic motivation, altruistic motivation, teachers' supports, and curriculum guidance). Nearly, all of the agriculture teachers mentioned intrinsic and altruistic motivations as a primary reason for them to continue teaching in an agricultural education program. From the results, these motivations may affect high school agriculture teacher's retention. Hence, the study suggested school administrator to enhance agriculture teachers' motivations by providing full support to a teacher through mentoring, coaching and professional development.*

**KEYWORDS:** Motivation to teach, intrinsic, extrinsic, altruistic, CASE, high school agriculture teacher

## 1.0 INTRODUCTION

Teacher retention has become a central issue in the teaching profession. Investigating factors that motivate teachers to continue teaching will aid in understanding what exactly makes teachers stay in schools and reduce numbers of teacher shortage. Teacher shortage is a grave problem not only in the teaching profession but also in the agricultural education field. Data from the National Agricultural Education Supply and Demand Study (Smith, Foster, & Lawver, 2015) reported that 548 school-based agricultural education teachers (SBAE) left teaching due to many reasons such as retirement, employed in industry or business, not offered a contract or terminated, and unknown reasons. With that, an inclusive study of motivations that influence high school teachers to teach in Iowa is needed. Majority of agriculture teachers in Iowa are using the Curriculum for Agricultural Science Education (CASE). CASE serves as a teaching aid for agriculture teacher to have a better interaction with students in teaching and learning (CASE, 2012). However, there is no current literature on how CASE relates to experienced high school agriculture teachers' motivation to continue teaching. Therefore, this study aims to understand how different types of motivation (intrinsic, extrinsic, and altruistic) influence experienced high school agriculture teachers who are using the CASE Curriculum to continue teaching.

## 2.0 FACTORS THAT MOTIVATE HIGH SCHOOL AGRICULTURE TEACHERS TO TEACH

Priority 4 of the National Research Agenda focuses on creating a sufficient professional workforce that addresses the challenges of 21st century (Roberts, Harder, & Brashears, 2016). In regards to this, it is crucial to study what motivates experienced high school agriculture teachers in to remain teaching. Extensive research has shown that intrinsic, extrinsic, and altruistic are three common categories for

teachers' motivation to teach (Moran, Kilpatrick, Abbott, Dallat, & McClune, 2001). These motivations are indispensable for teacher retention. Ryan and Deci (2000); Hardre and Reeve (2003); Reeve, Deci and Ryan (2004) found the motivation to teach theory is well grounded from self-determination theory (SDT). The theory differentiates two types of motivations, intrinsic and extrinsic motivations. Self-determination theory (SDT) explains intrinsic and extrinsic motivations but not altruistic motivations. Little attention has been focused on altruistic motivations because this type of motivation is an important motivator for new teachers to remain in the teaching profession. Brown (1992) found teachers within their first year perceived altruistic motivations as the reason they want to teach.

Realizing the gap in literature about the motivation's agriculture teachers have to teach, the authors developed a new conceptual framework, which includes altruistic motivations. The new conceptual framework (refer Figure 1) was developed by reviewing previous theories and empirical findings. Studies related to teacher's motivation from 1990-2016 were used to develop the framework. The authors reviewed articles from the Journal of Agricultural Education, Research in Higher Education, Journal of Educational Psychology, Journal of Career and Technical Education, and Teaching and Teacher Education.

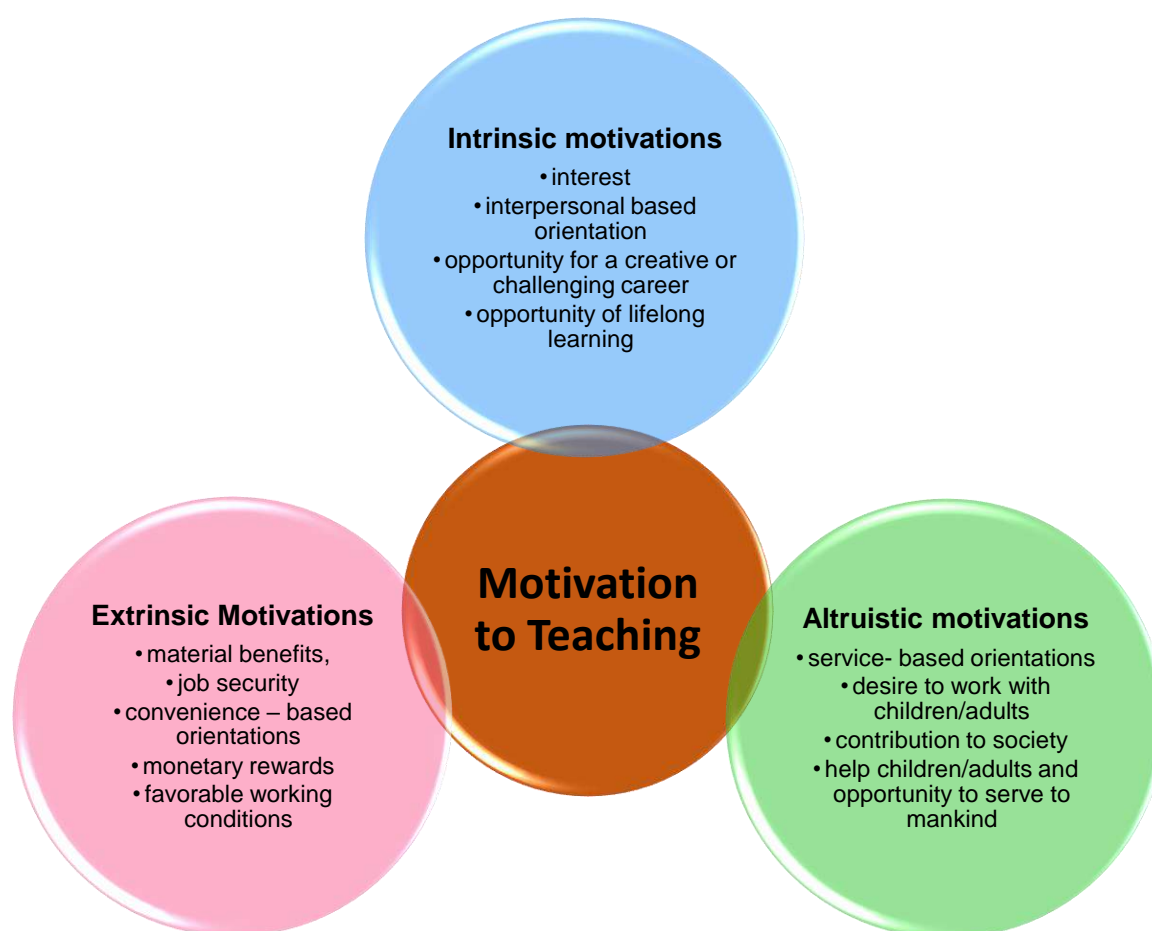


Figure 3: Conceptual Framework of Factors that Motivate High School Agriculture Teachers to Teach

Based on the conceptual framework, the authors aimed to focus this study on three types of motivations; a) intrinsic, b) extrinsic, and c) altruistic motivations. Intrinsic motivation is an internal form of motivation. Teachers intrinsically motivated because of their internal desire to do something for its own sake. Intrinsic motivation involves engaging in a behavior because it is personally rewarding; principally, performing an activity for its own sake rather than the desire for some external reward. Essentially, the behavior itself is its own reward. Intrinsic motivations usually related to individual interest, interpersonal-based orientation, opportunity for a creative or challenging career, and opportunity of lifelong learning.

Extrinsic motivation, however, is an external form of motivation. Extrinsic motivation doesn't always have to be another person, but it is some outside demand, obligation, or reward that requires the achievement of a particular goal. Extrinsic motivation occurs when individuals are motivated to perform a

behavior or engage in an activity to earn a reward or avoid punishment. Many external factors can be considered to extrinsic motivations such as material benefits, job security, convenience-based orientations, monetary rewards, and favorable working conditions.

The term altruistic is defined as a concern for other's welfare as a consequence of overcoming self-interest. An altruistic motivation has to follow two conditions; a) has to reflect the high moral quality of helping behavior and b) has to be identifiable. In addition, altruistic motivations benefits another person, performs voluntarily and intentionally, benefits the goal by itself, and performs without expecting any external rewards. In the framework, the researchers focus on altruistic motivations which include service-based orientations, desire to work with children and adults, contribution to society, and help children and adults to serve to mankind.

### **3.0 RESEARCH OBJECTIVES**

This paper aims to accomplish the following objectives:

- a) Assess high school agriculture teachers' motivations (intrinsic, extrinsic, and altruistic) to continue teaching among experienced high school agriculture teachers.
- b) Understand the prominent motivations that lead experienced high school agriculture teachers to continue teaching.
- c) Understand how the CASE curriculum has influenced experienced high school agriculture teacher's motivations.

### **4.0 RESEARCH METHODOLOGY**

The constructivist paradigm approach is used to understand different perspectives and meaning of an individual's experience (Schwandt, 2000). For this purpose, interviews were conducted to understand experienced high school agriculture teachers' motivations to continue teaching and how it is related to their experience using CASE. Data was collected using semi-structured interviews with open-ended questions. The subjects for this study included all experienced high school agriculture teachers in the United States. The authors used purposive sampling to select the participants. In the present study, the researchers selected five participants from across the United States with specific requirements to be interviewed. Participants needed to be high school agriculture's experienced teachers, have more than five years of teaching experience in SBAE and use the CASE curriculum. However, researchers only used three out of the five interview data sets due to lack of information from two participants after follow-up questions. The reason for this requirement for participants was to provide better insight on motivations that lead teachers to keep teaching, and a better understanding on participant's experiences using CASE.

Researchers audiotaped the entire interview using phone, then transcribed and coded the data. Researchers used the framework analysis for coding the data. The other distinctive aspect of framework analysis is the use of a thematic approach, which allows themes to develop both from the research questions and from the narratives of research participants (Ritchie, Spencer, Bryman & Burgess, 1994). Following this path provides a trail of evidence, as well as increasing the extent of dependability, consistency, and confirmability. Moreover, the intent of this study is not to generalize the results to all high school agriculture teachers that are CASE certified.

### **5.0 FINDINGS**

From the interviews, we determined the backgrounds of participants including years of teaching experience, gender, and status. Participants' years of teaching experience were 8, 11, and 29 years. Three participants were interviewed and identities were coded as T1, T2, and T3. There were two males and one female participant. In addition, it was also found one of the participants grew up on a farm, whereas the other two had no previous background in agriculture. Six themes emerged from the data analysis and the researchers classified the data for one major theme and five sub-themes. Motivations to teach were identified as the major theme in this study. The five sub-themes were intrinsic motivation, extrinsic motivation, altruistic motivation, teacher's support, and curriculum guidance.

### 5.1 Motivations to Teach

We found teachers are most likely motivated to teach because of their ability to work and build a relationship with students. One of the participants understood motivation to teach as an ability of working with students. T1 indicated: "I think, it is the ability to help a student to understand what agriculture is about."

### 5.2 Intrinsic motivation

T1 respondent mentioned, *"I like that every day is different. I get to learn along with kids"*. T2 participant agree teaching is creative and challenging and indicated *"Yes, I think it is a lot of different thing...I think it is more relatable, than reading from a book."*

### 5.3 Extrinsic motivation

Two of the participants articulated extrinsic motivations to keep teaching (adequate facilities, spending time with family and monetary rewards). T3 respondent stated views of monetary rewards and mentioned *"I need a pay check, we need money in the same time, I think that's important"*. Adding to that, T2 said time with family motivated him to teach *"I still have an opportunity to spend with family, so that I want to do it"*. The same participant also mentioned about having adequate facilities to teach, *"I have very nice facilities...I have a classroom and a small shop...so be able to have those, it's really nice."*

### 5.4 Altruistic motivation

All of the respondents mentioned they have altruistic motivations (teaching agriculture to students, and make a difference). T3 participant stated, *"Yes, I like to see the kids grow interest in something whether in Agriculture...you know, you make a difference on students..."*

### 5.5 Teacher's Support

Teacher support theme can be explained as how school administrators make high school agriculture teachers feel important to a school. T1 respondent said, *"Be aware what is going on with the program, and support it in any way possible by understanding the time and effort that a teacher puts in."*

### 5.6 Curriculum Guidance

Curriculum Guidance: All of the participants teach agriculture using CASE. T1 participant indicated, "Okay, I teach Agriculture Food and Natural Resources, Plant Science, Animal Science, Food Science and Safety, and Agriculture Research and Development. In addition, the participants stated, the CASE Curriculum motivates them to continue teaching. Here, T1 respondent mentioned, "Yes, I feel there is a relationship with me, because before my teaching was good, but I didn't have the sequence...., developing the CASE Curriculum which makes sense, and has made me a much better teacher".

## 6.0 CONCLUSION AND RECOMMENDATION

Based on the results, high school agriculture teachers have a variety of experiences in teaching and differ in family backgrounds which influenced them to choose teaching as their career. In this study, participants stated motivations to teach were an ability to work and build relationships with students. The findings are in line with previous research, which found the top motivation for educators to teach was to work with young people (Hellsten & Prytula, 2001). In regards to intrinsic motivation to teach, majority of the participants have this type of motivation to teach which make them feel happy with their work.

Two of the participants stated they were having extrinsic motivations to teach such as adequate facilities, spending time with family, and monetary rewards. The finding agrees with previous research about having a work-balance such as time with family is reason agricultural educators remain in the classroom (Crutchfield, Ritz, & Burris, 2013). Surprisingly, one participant in the study stated extrinsic motivation such as money did not become the factor that motivated teacher to teach. Experienced high school agriculture teachers might perceive extrinsic motivations to teach differently due to gender orientations. All of the participants expressed that altruistic motivation as reasons for them to continue teaching. The findings agree with previous research that altruistic is important motivation for teachers to teach (Roness, 2011).

All of participants think of CASE as curriculum guidance that helped them become more systematic. The CASE curriculum provided high school agriculture teacher's guidance in teaching as well as making lessons more enjoyable. The findings provide insight into how CASE curriculum helps experienced high school agriculture teachers remain longer in the profession. It is suggested educators and school administrators continue to invest in CASE.

In addition, teacher's support through mentoring young teachers is one important approach for engagement and retaining teachers. One way to have good engagement is through a state wide administrators' and teachers' professional development conference. It is suggested at the conference, administrators and teachers focus on high school agriculture teachers' needs along with developing better compensation, and rewards to enhance teacher motivation to continue teaching in schools. According to Delnero and Montgomery (2001), an agriculture teacher who finds success in their work and shares it with other teachers through networking conferences, case studies, or reflective journals will have an enjoyable career. School administrators need to support agriculture teachers with adequate compensation for work, provide positive rewards, continue listening to teachers' needs, and provide them with support such as better working conditions and recognition where needed. The limitation of this study was the sample of the study was small because it specifically focused on experienced high school teachers that teach agriculture education in Iowa and have different ages and demographic backgrounds.

## 7.0 IMPLICATIONS

The present study has an implication for high school agriculture teachers and school administrators. The high school agriculture teacher is inclined to be dedicated to the profession if they maintain the intrinsic and altruistic motivations to teach. Since these motivations will likely influence teachers to remain, it is also suggested school administrators provide support by building good relationships with their teachers and creating good working environments. For theoretical implications, the present data and themes were in line with the research framework, which represents the intrinsic, extrinsic, and altruistic motivations constructs. Under intrinsic motivation construct, the themes (teaching is a creative and challenging career) fall under creative and challenging career components. In contrast, the themes (spending time with family, and monetary rewards) were in line with monetary rewards and convenience-based orientation under extrinsic motivation construct. The altruistic motivation theme, (makes a difference) was under contributions to society. Further research should be conducted to see if similar themes emerge with larger, or more diverse, audiences.

## REFERENCES

- Brown, M. M. (1992). Caribbean first-year teachers' reasons for choosing teaching as a career. *Journal of Education for Teaching*, 18(2), 185-195.
- Curriculum for Agricultural Science Education (CASE). (2012). *CASE lesson development philosophy*. Retrieved from <http://www.case4learning.org/about-case/vision.html>
- Crutchfield, N., Ritz, R., & Burris, S. (2013). Why Agricultural Educators Remain in Classroom. *Journal of Agricultural Education* 54(2), 1-14.
- Delnero, J., & Montgomery, D. (2001). Perceptions of work among California agriculture teachers. *Journal of Agricultural Education* 42(2), 56-67.
- Foster, D. D., Lawver, R. G., & Smith, A. R. (2015). National Agricultural Supply & Demand Study 2015, Executive Summary. Retrieved from: [http://aaaeonline.org/resources/Documents/NSD%20Summary\\_2015.pdf](http://aaaeonline.org/resources/Documents/NSD%20Summary_2015.pdf)
- Hardre, P. L., & Reeve, J. (2003). A motivational model of rural students' intentions to persist in, versus drop out of, high school. *Journal of educational psychology*, 95(2), 347.
- Hellsten, L. M., & Prytula, M. P. (2011). Why teaching? Motivations influencing beginning teachers' choice of profession and teaching practice. *Research in Higher Education Journal*, 13, 34-120
- Moran, A., Kilpatrick, R., Abbott, L., Dallatt, J., & McClune, B. (2001). Training to teach: Motivating factors and implications for recruitment. *Evaluation & Research in Education*, 15 (1), 17-32.
- Reeve, J., Deci, E. L., & Ryan, R. M. (2004). Self-determination theory: a dialectical framework for understanding sociocultural influences on student. *Big theories revisited*, 4, 31.

- Ritchie, J., Spencer, L., Bryman, A., & Burgess, R. G. (1994). Analysing qualitative data.
- Roberts, T. G., Harder, A., & Brashears, M. T. (2016). American Association for Agricultural Education national research agenda: 2016-2020. *Gainesville, FL: Department of Agricultural Education and Communication.*
- Roness, D. (2011). Still motivated? The motivation for teaching during the second year in the profession. *Teacher and Teaching Education*, 27(3), 628-638.
- Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary educational psychology*, 25(1), 54-67.
- Schwandt, T. A. (2000). Three epistemological stances for qualitative inquiry: Interpretivism, hermeneutics, and social constructionism. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., (pp. 189–213). Thousand Oaks, CA: Sage.

## KESAN MODUL PEMBELAJARAN KOPERATIF TEKNIK STAD (STUDENTS TEAMS-ACHIEVEMENT DIVISIONS) SAINS RUMAH TANGGA TERHADAP KEMAHIRAN BERFIKIR ARAS TINGGI

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### ABSTRAK

*Pelan Pembangunan Pendidikan Malaysia (2013-2025) telah menasaskan Kemahiran Berfikir Aras Tinggi (KBAT) sebagai salah satu objektif utama yang perlu dicapai. KBAT adalah kesinambungan daripada Kemahiran Berfikir Kreatif dan Kritis (KBKK) yang diperkenalkan pada tahun 1994. Bagi mata murid Sains Rumah Tangga, didapati penguasaan KBAT dalam kalangan murid sekolah masih lemah dan ini mengakibatkan pencapaian murid berada pada tahap rendah dengan nilai Gred Purata Mata Muridan (GPMP) di bawah 3.0. Berdasarkan temubual berfokus yang dijalankan ke atas guru Sains Rumah Tangga, didapati topik yang sukar dikuasai oleh murid adalah sistem pencernaan dan penyerapan makanan. Oleh yang demikian, kajian ini dijalankan bagi mengkaji keberkesanan Modul Pembelajaran Koperatif menggunakan teknik STAD (students teams-achievement divisions) dalam meningkatkan KBAT dalam mata murid Sains Rumah Tangga. Modul Pembelajaran Koperatif teknik STAD ini dibangunkan sebagai panduan kepada guru dalam menyampaikan topik sistem pencernaan dan penyerapan makanan kepada murid dengan lebih baik. Reka bentuk kuasi eksperimen digunakan dalam kajian ini bagi mengukur keberkesanan modul. Kajian ini melibatkan 197 orang murid tingkatan empat yang mewakili kumpulan eksperimen dan kumpulan konvensional. Dapatan kajian menunjukkan pemahaman murid terhadap topik sistem pencernaan dan penyerapan makanan meningkat. Terdapat perbezaan yang signifikan dalam pencapaian KBAT antara murid kumpulan eksperimen dengan kumpulan konvensional. Dapatan kajian juga mendapati murid kumpulan eksperimen menunjukkan penglibatan yang lebih aktif dalam sesi pembelajaran dan pengajaran bahkan dapat menjawab soalan KBAT dengan lebih berani dan yakin.*

**KATA KUNCI:** Kemahiran Berfikir Aras Tinggi, STAD, Pembelajaran Koperatif, Sains Rumah Tangga

### 1.0 PENGENALAN

Pelan Pembangunan Pendidikan Malaysia 2015–2025 (KPM, 2013) memberi penekanan kepada Kemahiran Berfikir Aras Tinggi (KBAT) dan kemahiran komunikasi menerusi enam aspirasi murid. Bagi menjana KBAT dan kemahiran komunikasi dalam kalangan murid sekolah, pembelajaran aktif yang berpusatkan murid dilihat sangat signifikan (Abd. Rashid, 2015). Berdasarkan pengalaman Jacobson, Davis dan Licklider, (1998), pembelajaran koperatif sesuai dilaksanakan dalam pelbagai bidang khususnya dalam bidang pengajian teknikal. Pembelajaran koperatif adalah satu kaedah pembelajaran yang melibatkan empat hingga lima orang ahli bagi setiap kumpulan dan pembelajaran ini menekankan kepada penguasaan kemahiran, konsep dan maklumat (Gillies, 2014). Pembelajaran koperatif juga menggalakkan kerjasama antara rakan sekumpulan dan berupaya meningkatkan kemahiran kognitif sosial murid (Kim, Cohen & Booske, 1998). Bahkan kaedah ini juga menggalakkan murid untuk berkomunikasi antara satu sama lain. Melalui pembelajaran koperatif, murid dapat mengikis perasaan malu dan takut untuk berbincang dengan rakan sekumpulan semasa menyelesaikan masalah atau tugas berkumpulan. Kaedah pembelajaran koperatif ini turut menerapkan kemahiran-kemahiran yang lain seperti kemahiran sosial, memimpin, mendengar, berfikir dan sebagainya (Nor Hasliza, 2012).

## 1.1 LATAR BELAKANG KAJIAN

Berdasarkan Kurikulum Standard Sekolah Menengah (KSSM), Sains Rumah Tangga (SRT) merupakan mata muridan elektif ikhtisas (MPEI) dalam kumpulan *Science, Technology, Engineering, and Mathematics* (STEM) bagi tingkatan 4 dan tingkatan 5. Dokumen Standard Kurikulum dan Pentaksiran (DSKP) merupakan jelmaan daripada KSSM yang mengandungi Standard Kandungan, Standard Pembelajaran dan Standard Prestasi. SRT merupakan mata muridan yang dibuat penjenamaan semula daripada mata muridan Ekonomi Rumah Tangga (ERT) tingkatan 4 dan tingkatan 5. Mata muridan ERT ini telah dilaksanakan sejak tahun 1992 dalam Kurikulum Baharu Sekolah Menengah (KBSM). Penjenamaan semula bagi mata muridan SRT dibuat dengan bermatlamat untuk memberikan ilmu pengetahuan berkaitan bidang sains Rumah Tangga di samping menyediakan murid dengan pelbagai kemahiran. Antara objektif SRT yang ditekankan dalam KSSM adalah pembangunan kemahiran insaniah iaitu kemahiran berfikir kritis, kreatif dan inovatif (KBAT) serta sikap positif dalam kalangan murid. Bagi merealisasikan matlamat utama Falsafah Pendidikan Kebangsaan, enam tunjang Kerangka KSSM telah disepadukan iaitu mengintegrasikan pengetahuan, kemahiran dan nilai serta dicakup dengan Kemahiran Abad Ke-21 dan Kemahiran Berfikir Aras Tinggi (KBAT).

Di Malaysia pengajaran dan pembelajaran yang dijalankan dalam bilik darjah masih berpusatkan kepada guru. Murid perlu menghafal kandungan mata muridan bagi menghadapi peperiksaan. Hal ini, telah menyebabkan murid menghadapi kesukaran untuk mengaplikasikan kemahiran berfikir kerana mereka diajar untuk menghafal. Melalui kaedah pembelajaran tradisional yang berfokus kepada hafalan, murid tidak dapat mengaplika ilmu pengetahuan dan kemahiran yang dimuridi dalam konteks kehidupan sebenar (Kose, 2010). Apa yang membimbangkan, merujuk kepada format baharu struktur soalan Penilaian Tingkatan Tiga (PT3), murid perlu menguasai kandungan pembelajaran dengan baik bagi membolehkan mereka menjawab soalan yang melibatkan kemahiran berfikir aras tinggi. Berbanding format peperiksaan terdahulu yang lebih berfokus kepada soalan objektif yang memerlukan murid menghafal kandungan muridan bagi memperoleh keputusan cemerlang (Ketua Pengarah Muridan Malaysia, 2014).

Merujuk kepada statistik pendidikan Malaysia pada tahun 2013 di laman sesawang portal Emis, didapati bilangan murid yang memilih aliran teknik dan vokasional di sekolah menengah harian menurun daripada 56,200 orang pada tahun 2012 kepada 55,576 orang. Angka penurunan ini melibatkan juga murid yang mengambil elektif mata muridan SRT. Malah dilaporkan bahawa penguasaan murid SRT terhadap kemahiran berfikir aras tinggi (KBAT) berdasarkan pencapaian peperiksaan Sijil Muridan Malaysia adalah tidak memuaskan dan Gred Purata Mata Muridan (GPMP) murid SRT juga tidak mencapai tahap 3.00. Bagi membantu mengatasi masalah ini, satu modul pembelajaran koperatif teknik STAD telah dibangunkan bagi membantu murid SRT menguasai topik yang sukar seperti pencernaan makanan. Kertas kerja ini mengkaji keberkesanan penggunaan Modul STAD SRT dalam menjana kemahiran berfikir aras tinggi (KBAT) dalam kalangan murid SRT.

## 2.0 OBJEKTIF KAJIAN

Kajian ini dijalankan bagi mencapai objektif seperti berikut:

1. Mengkaji keberkesanan pembelajaran koperatif menggunakan Modul Teknik STAD SRT dalam meningkatkan kemahiran berfikir aras tinggi dalam kalangan murid SRT.
2. Mengkaji perbezaan pencapaian kemahiran berfikir aras tinggi (KBAT) murid-murid SRT sebelum dan selepas melalui pembelajaran koperatif.

## 3.0 KONSEP PEMBELAJARAN KOPERATIF

Pembelajaran koperatif biasa dikenali dengan pembelajaran secara berkumpulan. Pembelajaran koperatif merupakan satu kaedah pembelajaran yang lebih menekankan kepada penguasaan kemahiran, konsep dan maklumat di mana murid dikelaskan kepada kumpulan tertentu (Nurulhuda Ngasiman, 2014). Kaedah pembelajaran ini, akan mengajar murid cara untuk berinteraksi, dan bersosial dengan lebih baik. Mengikut Kamus Dewan (1998), koperatif bermaksud kerjasama. Oleh itu, Pembelajaran koperatif merujuk kepada pembelajaran yang menggalakkan murid belajar bersama, bertukar pendapat, berkongsi maklumat, dan berinteraksi antara satu sama lain dalam bentuk kumpulan kecil. Menurut Johnson dan Johnson (1991)



dan Slavin (2008), murid yang belajar secara bekerjasama dalam kumpulan berupaya meningkatkan prestasi mereka kerana dapat belajar dengan lebih baik dan dapat melahirkan murid yang bertanggungjawab kerana mereka mempunyai matlamat kumpulan yang perlu dicapai bersama.

Pembelajaran koperatif merupakan strategi pembelajaran berkesan kerana melalui kaedah ini, murid yang mempunyai pelbagai tahap kebolehan, kemahiran dan pemikiran akan belajar bersama-sama dalam satu kumpulan. Untuk memastikan proses pembelajaran koperatif berjaya, setiap murid bertanggungjawab untuk berkongsi pengetahuan serta kemahiran yang sedia ada bagi membantu ahli kumpulan yang lain. Seterusnya, setiap ahli kumpulan perlu memberikan komitmen yang tinggi pada tugas yang diberikan. Ketidakupayaan murid dalam menguasai pengetahuan secara berterusan dan memahami topik-topik yang dimuridi adalah disebabkan oleh proses pembelajaran yang tidak melibatkan murid secara aktif (Salleh, Bakar & Abdul Raffar, 2005). Pembelajaran koperatif akan menggalakkan murid berinteraksi secara aktif dan positif dalam kumpulan. Penglibatan dalam aktiviti kumpulan kecil dapat membangunkan kemahiran berfikir aras tinggi dan memantapkan kebolehan individu untuk mengaplikasikan pengetahuan (Gan Teck Hock, 1999) dan juga dapat meningkatkan motivasi murid semasa perbincangan dalam kumpulan.

Secara umumnya, Pembelajaran Koperatif adalah pembelajaran berbentuk kerjasama yang melibatkan kumpulan kecil yang terdiri daripada pelbagai tahap kebolehan dan pencapaian, jantina, bangsa dan agama. Untuk mencapai matlamat bersama di dalam kumpulan, sifat paling penting adalah kejayaan seorang murid dalam membantu rakan-rakan lain untuk mencapai matlamat dan objektif dalam pembelajaran masing-masing. Dalam modul ini, Pembelajaran Koperatif dengan teknik *Students Teams-Achievement Divisions* (STAD) digunakan bagi mencapai objektif pengajaran dan pembelajaran yang telah ditetapkan.

## 2.1 TEORI PEMBELAJARAN KONSTRUKTIVISME

Berdasarkan teori konstruktivisme, pengetahuan dibina secara aktif oleh individu yang berfikir. Individu pasif tidak menyerap sebarang pengetahuan yang disampaikan oleh gurunya. Murid akan menyesuaikan sebarang maklumat baharu dengan pengetahuan sedia ada mereka untuk membentuk pengetahuan baharu dalam mindanya. Apabila mereka bertemu dengan objek, idea atau perkaitan yang tidak bermakna kepada mereka, maka mereka akan menginterpretasi apa yang mereka lihat dan menyesuaikan peraturan mereka agar mereka dapat menerangkan maklumat baharu ini dengan lebih baik. Implikasi konstruktivisme ialah pengajaran dan pembelajaran akan berpusatkan murid. Guru berperanan sebagai fasilitator yang membantu murid membina pengetahuan dan menyelesaikan masalah. Guru juga akan mengenalpasti pengetahuan sedia ada murid dan merancang kaedah pengajarannya dengan sifat asas pengetahuan tersebut. Selain itu, guru berperanan sebagai pereka bentuk bahan pengajaran yang menyediakan peluang kepada murid-murid untuk membina pengetahuan baharu. Pembelajaran berasaskan teori konstruktivisme ini merupakan satu proses di mana murid membina idea baharu atau konsep berasaskan kepada pengetahuan semasa mereka. Murid akan memilih dan menginterpretasikan maklumat, membina hipotesis dan membuat keputusan berasaskan kepada pengetahuan semasa mereka memberikan makna dan pembentukan pengalaman (Zainal Abidin, 2007).

## 2.2 KEMAHIRAN BERFIKIR ARAS TINGGI

Kemahiran Berfikir Aras Tinggi (KBAT) merupakan keupayaan untuk mengaplikasikan pengetahuan, kemahiran dan nilai dalam membuat penaaakulan dan refleksi bagi menyelesaikan masalah, membuat keputusan, berinovasi dan berkeupayaan untuk mencipta sesuatu yang baharu. Menurut Newman (1990) pula, KBAT didefinisikan sebagai cabaran dan penggunaan minda secara meluas bila seseorang perlu membuat interpretasi, menganalisis atau memanipulasi maklumat untuk menjawab sesuatu persoalan. Menurut Lembaga Peperiksaan Malaysia (2013), KBAT ialah keupayaan untuk mengaplikasikan pengetahuan, kemahiran dan nilai dalam membuat penaaakulan dan refleksi bagi menyelesaikan masalah, membuat keputusan, berinovasi dan berupaya mencipta sesuatu. Asas proses kognitif adalah menjana dan mengorganisasikan maklumat, kemahiran analisis, sintesis dan proses kreativiti dan penilaian.

Kemahiran berfikir adalah satu daripada enam ciri utama murid yang perlu ada bagi memastikan semua murid mencapai potensi sepenuhnya dan mampu bersaing di peringkat global (Kementerian Pendidikan Malaysia, 2013). Menurut Nessel dan Graham (2007), kemahiran berfikir merupakan

kemahiran yang paling asas yang boleh dikembangkan di dalam bilik darjah dan merupakan kunci kepada pencapaian yang tinggi bagi semua murid. Oleh itu, KBAT mulai dilaksanakan melalui pelaksanaan tujuh elemen iaitu kurikulum, pedagogi, pentaksiran, kokurikulum, sokongan komuniti swasta, bina upaya dan sumber.

Pendekatan KBAT berdasarkan taksonomi ini telah menjadi asas utama di dalam kerangka pembentukan sistem pendidikan di dunia dan tidak terkecuali Malaysia yang mengadaptasikan taksonomi Bloom dan Anderson menerusi PPPM 2013-2025 (Kementerian Pendidikan Malaysia, 2013). Kementerian Pendidikan Malaysia telah memberi penekanan terhadap KBAT dalam sistem persekolahan dengan memperkenalkan program *I-THINK* yang dimulakan dengan 10 buah sekolah rintis pada tahun 2011 dan melaksanakan program ini kepada semua sekolah pada tahun 2014 sebagai langkah persediaan pelaksanaan KBAT dalam kurikulum di Malaysia (Kementerian Pendidikan Malaysia, 2013).

### **2.3 MODUL TEKNIK STAD**

Modul Teknik STAD dibina hasil daripada pengumpulan maklumat melalui analisis dokumen yang melibatkan isi kandungan mata muridan, Dokumen Standard Kurikulum dan Pentaksiran (DSKP) SRT serta soalan-soalan SPM tahun sebelumnya. Selain itu, pembinaan modul ini juga merujuk kepada maklum balas yang diperoleh hasil temu bual secara separa berstruktur bersama guru pakar pedagogi SRT dan guru yang berpengalaman. Berdasarkan maklumat yang diperoleh, pengkaji memilih untuk membina modul dengan mengambil tajuk sistem pencernaan penyerapan makanan. Tajuk ini merupakan topik yang paling sukar untuk dikuasai oleh murid SRT kerana melibatkan proses sains dan enzim-enzim yang perlu difahami. Modul Teknik STAD ini dibina dalam dua edisi iaitu edisi guru dan edisi murid.

Modul Teknik STAD edisi guru dibina sebagai panduan bagi memudahkan guru melaksanakan pembelajaran koperatif dengan lebih berkesan mengikut prosedur yang telah ditetapkan. Modul edisi guru mengandungi pengenalan pembelajaran koperatif, rancangan pengajaran harian (RPH), mengandungi contoh set induksi yang boleh digunakan oleh guru, huraian terperinci langkah pelaksanaan aktiviti pembelajaran koperatif, nota edaran untuk murid, disertakan enam jenis latihan yang berlainan mengikut topik, soalan kuiz dan soalan ujian berbentuk esei pendek dan KBAT serta skema jawapan. Manakala modul edisi murid pula dibina sebagai bahan pembelajaran yang mengandungi nota pengenalan kepada pembelajaran koperatif, enam jenis latihan yang berbeza mengikut topik dan mengikut kumpulan, soalan kuiz dan soalan ujian serta mengandungi nota tambahan untuk rujukan murid selain buku teks.

Teknik STAD ini merangkumi empat komponen penting yang melibatkan aktiviti guru dan murid dalam aktiviti pengajaran dan pembelajaran, penyampaian isi pengajaran, pembahagian kumpulan dan pembelajaran secara berkumpulan, kuiz dan pengiktirafan kumpulan. Penyampaian isi pengajaran oleh guru melibatkan menyampaikan bahan pengajaran berdasarkan topik yang hendak disampaikan. Kemudian, untuk memudahkan lagi pemahaman murid, aktiviti secara berkumpulan dijalankan bagi membolehkan murid berkongsi idea, pandangan dan maklumat dengan rakan-rakan lain. Setelah selesai satu topik/tajuk pengajaran, kuiz akan dijalankan bagi mengukur tahap penguasaan murid terhadap topik/tajuk tersebut. Sebagai motivasi dan dorongan kepada murid agar sentiasa bersemangat dan bersungguh-sungguh dalam melakukan setiap aktiviti pembelajaran berkumpulan, pengiktirafan kumpulan akan diberikan berdasarkan skor kumpulan yang diperoleh.

## **3.0 METODOLOGI**

### **3.1 REKA BENTUK KAJIAN**

Bagi menguji keberkesanan penggunaan Modul Teknik STAD dalam kalangan murid SRT, satu kajian kuasi eksperimental telah dijalankan selama lima minggu. Kajian ini menggunakan reka bentuk kuantitatif yang melibatkan ujian pra dan pasca kepada murid yang menerima rawatan melalui pembelajaran koperatif dan juga kepada murid dari kumpulan kawalan yang melalui pengajaran secara konvensional. Seramai 198 orang responden yang terdiri dari murid tingkatan empat yang mengambil mata muridan SRT terlibat dalam kajian ini. Kajian ini telah melibatkan dua buah sekolah di negeri Selangor dan Negeri Sembilan. Pemilihan responden dibuat secara rawak bertujuan bagi memenuhi ciri-ciri responden yang dikehendaki.

### 3.2 INSTRUMEN KAJIAN

Instrumen kajian ini terbahagi kepada soalan ujian dan soal selidik. Pengkaji membina soalan ujian untuk menguji KBAT murid berdasarkan topik yang terkandung dalam Dokumen Standard Kurikulum dan Pentaksiran Tingkatan 4. Sebelum modul dan soalan ujian dibina, pengkaji telah menemu bual lima orang guru berpengalaman dan pakar dalam bidang SRT. Kajian rintis telah dilaksanakan bagi menguji kebolehppercayaan setiap item dan soalan ujian yang dibina. Maklum balas yang diterima melalui kajian rintis dijadikan panduan dalam membina modul ini. Kesahan muka dan kesahan kandungan telah dibuat bagi memastikan soalan ujian, soal selidik dan modul yang dibina mantap dan sesuai digunakan pada murid SRT.

Dalam kajian ini, satu set instrumen yang merangkumi tiga bahagian iaitu Bahagian A (demografi), Bahagian B (soal selidik) dan Bahagian C (soalan ujian) digunakan. Dapatan yang diperolehi dianalisa secara berkomputer dengan menggunakan perisian SPSSv 23.0 bagi mengetahui keberkesanan modul pembelajaran koperatif yang dibangunkan.

### 4.0 DAPATAN KAJIAN DAN PERBINCANGAN

#### 4.1 Pencapaian KBAT Murid dalam Ujian Pra antara Kumpulan Koperatif dengan Kumpulan Konvensional

Jadual 1 menunjukkan pencapaian murid berdasarkan Ujian Pra yang telah dijalankan kepada responden yang mengikuti kaedah pembelajaran koperatif dan kaedah pembelajaran konvensional. Berdasarkan analisa, min markah bagi kumpulan koperatif adalah 31.67 (S.P.=11.32). Manakala nilai min bagi kumpulan konvensional adalah 29.67 (S.P.=12.42). Dapatan kajian menunjukkan bahawa tidak terdapat perbezaan yang signifikan skor min antara murid kumpulan koperatif ( $M=31.67$ ,  $S.P.=11.32$ ) dengan murid kumpulan konvensional ( $M=29.67$ ,  $S.P.=12.42$ ;  $t(196)= 1.182$ ,  $p=.239>.05$ ).

Jadual 1: Pencapaian KBAT dalam Ujian Pra antara Kumpulan Koperatif dengan Kumpulan Konvensional

Kumpulan	Bilangan Murid	Min	Sisihan Piawai	Nilai t	Darjah Kebebasan	Signifikan
Koperatif	96	31.67	11.32	1.182	196	.239
Konvensional	102	29.67	12.42			

Dapatan ini menunjukkan bahawa sebelum murid menerima rawatan, tahap pengetahuan antara kumpulan koperatif dan kumpulan konvensional adalah sama. Oleh itu, kedua-dua kumpulan ini sesuai digunakan dalam menjalankan kajian ini. Selain itu, dapatan ini juga menunjukkan bahawa ancaman dari segi pemilihan sampel telah dapat dikurangkan sebelum eksperimen dijalankan.

#### 4.2 Pencapaian KBAT Murid dalam Ujian Pasca antara Kumpulan Koperatif dengan Kumpulan Konvensional

Jadual 2 menunjukkan pencapaian murid berdasarkan Ujian Pasca yang telah dijalankan kepada responden yang mengikuti kaedah pembelajaran koperatif dan kaedah pembelajaran konvensional. Berdasarkan analisa, min markah bagi kumpulan koperatif adalah 53.104 (SP=13.25). Manakala nilai min bagi kumpulan konvensional adalah 36.205 (SP=10.21). Dapatan kajian menunjukkan bahawa terdapat perbezaan yang signifikan skor min antara murid kumpulan koperatif ( $M=53.104$ ,  $SP=13.25$ ) dengan murid kumpulan konvensional ( $M=36.205$ ,  $SP=10.21$ ;  $t(196)= 10.08$ ,  $p=.000<.05$ ).

Jadual 2: Pencapaian KBAT dalam Ujian Pasca antara Kumpulan Koperatif dengan Kumpulan Konvensional

Kumpulan	Bilangan Murid	Min	Sisihan Piawai	Nilai t	Darjah Kebebasan	Signifikan
Koperatif	96	53.104	13.25			
Konvensional	102	36.205	10.21	10.08	196	.000

Dapatan ini menunjukkan bahawa Modul Teknik STAD yang dibangunkan dapat meningkatkan pemahaman murid tentang topik pencernaan makanan. Dapatan ini menunjukkan bahawa walaupun murid terdiri daripada murid yang lemah namun setelah dibimbing dengan baik mengikut pembelajaran koperatif, pencapaian mereka meningkat. Ini bermakna murid dapat mengaplikasikan dan mengingat proses pembelajaran menggunakan kaedah pembelajaran koperatif dalam pengajaran dan pembelajaran Sains Rumah Tangga dengan baik. Ini terbukti apabila murid kumpulan koperatif mempunyai pencapaian yang lebih baik berbanding dengan murid kumpulan konvensional. Dapatan yang diperoleh menyokong teori pembelajaran koperatif yang diutarakan oleh Johnson & Johnson (1994). Dapatan ini jelas menunjukkan bahawa kegagalan murid dalam menjawab soalan ujian khususnya berbentuk KBAT bukanlah berpunca dari kelemahan murid itu semata-mata. Guru sebagai pendidik perlu kreatif dalam mencari penyelesaian bagi memastikan kaedah penyampaian yang digunakan sesuai dengan tahap kecerdasan murid yang pelbagai.

#### 4.3 Taburan Markah Minimum dan Maksimum Ujian Pra dan Ujian Pasca bagi Kumpulan Koperatif dan Kumpulan Konvensional.

Jadual 3 menunjukkan taburan markah minimum dan maksimum ujian pra dan ujian pasca bagi murid kumpulan koperatif dan murid kumpulan konvensional. Taburan markah ini digunakan untuk mengenal pasti markah terendah dan markah tertinggi dalam ujian pra dan ujian pasca bagi kumpulan koperatif dan kumpulan konvensional.

Jadual 3: Taburan Markah Minimum dan Maksimum Ujian Pra dan Ujian Pasca bagi Kumpulan Koperatif dan Kumpulan Konvensional

Markah	Ujian Pra/Murid		Ujian Pasca/Murid	
	Kumpulan Koperatif	Kumpulan Konvensional	Kumpulan Koperatif	Kumpulan Konvensional
0 hingga 40 (Minimum)	76	77	16	60
41 hingga 100 (Maksimum)	20	25	80	42

Berdasarkan data dalam Jadual 3, dapat dilihat bahawa majoriti murid dalam ujian pra bagi kedua-dua kumpulan (koperatif dan konvensional) memperolehi pencapaian markah kurang dari 40 (koperatif 76 orang dan konvensional 77 orang). Pencapaian murid selepas ujian pasca menunjukkan ada peningkatan bagi kedua-dua kumpulan. Namun, peningkatan yang tinggi dapat dilihat dalam kumpulan koperatif dengan bertambah bilangan murid yang mendapat markah lebih dari 40 sebanyak 60 orang. Berbanding kumpulan konvensional yang meningkat sebanyak 17 orang sahaja yang mendapat markah lebih dari 40. Ini bermakna murid yang mendapat markah kurang dari 40 bagi kumpulan koperatif berkurang kepada 16 orang sahaja. Manakala bagi kumpulan konvensional, bilangan murid yang mendapat markah kurang dari 40 masih lagi tinggi iaitu seramai 60 orang.

Secara keseluruhan, bilangan murid yang mendapat markah maksimum ujian pra bagi kumpulan koperatif lebih rendah berbanding kumpulan konvensional. Walau bagaimanapun, dalam ujian pasca bilangan murid yang mendapat markah maksimum bagi kumpulan koperatif adalah jauh lebih tinggi berbanding kumpulan konvensional dengan markah tertinggi bagi kumpulan koperatif adalah 80 markah

dan markah tertinggi bagi kumpulan konvensional adalah 53 markah. Jelas menunjukkan bahawa kaedah pembelajaran koperatif menggunakan Modul Teknik STAD sangat berkesan dalam meningkatkan pencapaian murid dalam menjawab soalan KBAT berbentuk esei pendek. Dapatan kajian ini selari dengan kajian terdahulu yang dijalankan oleh Nurulhuda Ngasiman (2014), Tsay dan Brady (2010), Zahara dan Suzela (2011) yang turut mendapati pencapaian murid meningkat setelah mengikuti pembelajaran koperatif. Oleh yang demikian, pembelajaran koperatif perlu diperluaskan dan digunakan oleh guru SRT dalam pengajaran dan pembelajaran bagi mewujudkan suasana pembelajaran yang aktif, sihat dan bersemangat dalam kalangan murid sepanjang proses pembelajaran berlangsung (Yang Guat See, 2015).

## 5.0 RUMUSAN DAN CADANGAN

Kejayaan sesuatu proses pengajaran dan pembelajaran adalah bergantung kepada aktiviti-aktiviti yang dilaksanakan oleh guru di dalam kelas. Kaedah atau strategi yang guru gunakan dalam menyampaikan ilmu kepada murid mempengaruhi pencapaian murid. Justeru itu, guru perlu bijak merancang dan memilih kaedah dan strategi pengajaran yang difikirkan sesuai mengikut keupayaan dan kecerdasan murid. Kaedah pembelajaran koperatif menggunakan Modul Teknik STAD merupakan antara pendekatan yang boleh digunakan sebagai pelengkap kepada pembelajaran konvensional dalam SRT. Hal ini kerana kaedah pembelajaran koperatif memberi peluang kepada murid untuk menimba ilmu pengetahuan dan menjana kemahiran abad ke-21 yang lainnya seperti kemahiran kerja sepasukan dan berkomunikasi. Selain itu, hasil dapatan ini juga menyakinkan para pendidik khususnya guru SRT bahawa pedagogi yang aktif yang berpusatkan murid lebih sesuai diaplikasikan kepada murid yang lemah.

Hasil daripada dapatan ini juga dapat membuka mata para pendidik bagi mata muridan SRT di sekolah menengah berkaitan dengan modul teknik STAD mampu menjana kemahiran berfikir aras tinggi (KBAT) melalui pembelajaran koperatif. Di samping itu, diharapkan Kementerian Pendidikan Malaysia boleh meningkatkan usaha memperluaskan lagi penggunaan Modul Teknik STAD dalam bidang Pendidikan Teknik dan Vokasional (PTV) dan seterusnya kepada bidang-bidang yang lain demi melahirkan modal insan yang bukan sahaja berkualiti dalam pencapaian akademik. Seterusnya, menyokong hasrat kerajaan untuk melahirkan murid yang lebih berdaya saing bagi membolehkan mereka menyambung pengajian di peringkat yang lebih tinggi serta menjadi pekerja yang berkualiti pada masa akan datang.

## PENAJAAN

Projek ini telah ditaja melalui Geran Universiti Putra Malaysia dengan kod projek GP-IPS/2017/9564800.

## RUJUKAN

- Abd. Rashid, A. (2015). *Inovasi dalam pengajaran kursus-kursus asas Islam (wajib MQA) di IPTS: Perlaksanaan pendekatan pembelajaran aktif (active learning)*. Universiti Kuala Lumpur-Malaysia Spanish Institute.
- Bahagian Pembangunan Kurikulum (2015). *Kurikulum Standard Sekolah Menengah KSSM*. Kementerian Pendidikan Malaysia: Kuala Lumpur.
- Bahagian Pembangunan Kurikulum (2015). *Dokumen Standard Kurikulum dan Pentaksiran Sains Rumah Tangga Tingkatan 4*. Kementerian Pendidikan Malaysia: Kuala Lumpur.
- Djamarah, B. S., & Aswan, Z. (2014). *Strategik Belajar Mengajar*. Rineka Cipta.
- Gan Teck Hock. (1999). Mencari titik keseimbangan di antara keunggulan teori dan kenyataan praktis: Satu kes pelaksanaan pembelajaran koperatif dalam pengajaran matematik sekolah rendah. *Jurnal Penyelidikan Pendidikan Maktab Perguruan Sarawak*, 2(1), 68-85.
- Jacobson, D., Davis, J., & Licklider, B. (1998). Ten myths of cooperative learning in engineering education. *International Journal for Traffic and Transport engineering*, 3(4), 365-376.
- Johnson, D.W. (2009). *Reaching out: Interpersonal effectiveness and self-actualization (10th ed.)*. Boston: Allyn & Bacon.

- Johnson, R. T., Johnson, D. W. and Smith, K. (2003). "Active learning: Cooperation in the college classroom". Dicapai pada Jun 15, 2019, daripada <http://www.cooperation.org/index.html>
- Johnson, D. W., & Johnson, R. (1994). *Leading the cooperative school (2nd ed.)*. Edina, MN: Interaction Book.
- Kementerian Pendidikan Malaysia (2013). *Pelan pembangunan pendidikan Malaysia 2013-2025, pendidikan prasekolah hingga lepas menengah*. Kuala Lumpur: Kementerian Pendidikan Malaysia.
- Kementerian Pendidikan Malaysia (2015). *Ringkasan eksekutif, pelan pembangunan pendidikan Malaysia 2015-2025, pendidikan tinggi*. Kuala Lumpur: Kementerian Pendidikan Malaysia.
- Kim, J.-B., Cohen, A.S., Booske, J.H., S.J. (1998). Application of cooperative learning in an introductory engineering course. Paper presented at the annual meeting of the American Educational Research association, San Diego, CA: April 1998.
- Nazila Rikhtehgar Nezami et.al. (2012). *The effect of cooperative learning on the critical thinking of high school students*. Iran: Department of Education Islamic Azad University.
- Nor Hasliza Mohamed (2012). *Penglibatan murid dalam pembelajaran koperatif di sekolah menengah vokasional*. Johor: Fakulti Pendidikan Teknik dan Vokasional Universiti Tun Hussein Onn Malaysia.
- Nurulhuda Ngasiman (2014). *Kesan kaedah pembelajaran koperatif terhadap pencapaian murid dalam mata muridan matematik*. Johor: Fakulti Pendidikan Teknik dan Vokasional Universiti Tun Hussein Onn Malaysia.
- Pusat Perkembangan Kurikulum (2001). *Pembelajaran secara konstruktivisme*. Kuala Lumpur: Kementerian Pendidikan Malaysia.
- Robyn M. Gillies (2014). *Cooperative learning: Developments in research*. Australia: University of Queensland.
- See Y. G. (2015). *Keberkesanan pembelejaran berasaskan projek terhadap prestasi mata muridan kemahiran hidup bersepadu, kemahiran komunikasi dan penglibatan murid tingkatan satu di Selangor*. Serdang: Sekolah Pengajian Siswazah Universiti Putra Malaysia.
- Tsay, M., & Brady, M. (2010). A case study of cooperative learning and communication pedagogy: Does working in teams make a difference. *Journal of The Scholarship of Teaching & Learning*, 10(2), 78-79.
- Unit Perancang Ekonomi, Jabatan Perdana Menteri (2010). *Rancangan Malaysia Kesepuluh (2011-2015)*. Putrajaya: Jabatan Perdana Menteri.
- Unit Perancang Ekonomi, Jabatan Perdana Menteri (2015). *Rancangan Malaysia Kesebelas (2016-2025)*. Kuala Lumpur: Percetakan National Malaysia Berhad.
- Wan Nazira Wan Jaafar (2015). *Aplikasi kemahiran berfikir aras tinggi murid tingkatan tiga dalam pemahaman puisi dan prosa Bahasa Melayu*. Serdang: Fakulti Pengajian Pendidikan Universiti Putra Malaysia.
- Zahara, A., & Suzela, B. (2011). Kesan strategik pembelajaran koperatif terhadap pencapaian geografi tingkatan 1- topik tumbuhan semula jadi dan kehidupan liar. *Jurnal Pendidikan Malaysia*, 1-10.

# **SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM)**

## STEM dan Kompetensi Guru RBT

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### ABSTRACT

*Meningkatkan sumber tenaga mahir dan pakar dalam bidang penyelidikan dan industri pada era revolusi perindustrian ke-4 adalah usaha yang giat dijalankan oleh pihak kerajaan dalam meningkatkan ekonomi dan pembangunan produk berteknologi dan sistem automasi lebih pintar kearah mencapai sebuah negara maju. Revolusi perindustrian ini juga memberi kesan kepada sistem pendidikan yang mana turut diberi penekanan dalam bidang pendidikan menerusi pendidikan Sains, Teknologi, Kejuruteraan dan Matematik (STEM) yang dapat melahirkan modal insan yang berpengetahuan, kemahiran tinggi, kreatif dan inovatif. Transformasi pendidikan STEM diberi penekanan dalam Pelan Pembangunan Pendidikan Malaysia (PPPM) 2013-2025 untuk memantapkan pendidikan STEM di peringkat sekolah untuk menarik lebih ramai murid menceburi bidang STEM pada masa akan datang. Namun, penambahbaikan dalam proses pengajaran dan pembedahan perlu di beri penekanan pada hari ini sesuai dengan pendidikan abad ke 21. Oleh itu, kertas konsep ini membincangkan kompetensi guru reka bentuk dan teknologi dari aspek pengetahuan, kemahiran dan sikap dalam melaksanakan pendidikan STEM dalam pengajaran Reka Bentuk dan Teknologi (RBT). Kompetensi guru ini dapat meningkatkan pengaplikasian pengetahuan, kemahiran dan nilai dalam konteks kehidupan harian kepada murid untuk menjadi lebih kreatif, imaginatif dan mempunyai nilai estetik dalam mencari penyelesaian kepada sesuatu masalah selari dengan hasrat Kementerian Pendidikan Malaysia dalam meningkatkan kualiti guru lebih kompeten.*

**KATA KUNCI:** Pendidikan STEM, Guru, Kompetensi, Reka Bentuk dan Teknologi (RBT)

### 1.0 PENGENALAN

Perkembangan revolusi industri 4.0 memberi kesan secara langsung dalam pelbagai bidang dan hampir dalam semua aspek kehidupan seharian sejak ianya diperkenalkan oleh warga Jerman sekitar 2011. Revolusi industri ke 4.0 ini berbeza daripada revolusi perindustrian yang pertama yang tertumpu kepada penggunaan mesin berkuasa wap, manakala revolusi ke-2 kepada penggunaan elektrik dan bagi revolusi ke-3 lebih kearah penggunaan teknologi maklumat (IT) dan seterusnya berkembang kepada revolusi ke-4 yang melibatkan teknologi digital dengan manusia dan sistem fizikal yang lain (Risdianto & Mc, 2019). Perkembangan revolusi industri 4.0 ini juga turut memberi kesan kepada bidang pendidikan khususnya yang menjadi asas kepada penyediaan tenaga kerja mahir di masa depan. Oleh itu, Malaysia antara negara yang sedang bergerak menuju kearah perkembangan revolusi 4.0 dan pihak kerajaan giat melaksanakan pelbagai usaha untuk mencapai sebuah Negara yang mengaplikasikan revolusi perindustrian 4.0 yang melibatkan Internet Of Things (IOT) atau internet kebendaan dalam gabungan sistem dan teknologi digital, siber-fizikal dan biologi dalam hampir semua aspek. Justeru itu, pihak kerajaan mengambil inisiatif melaksanakan pelbagai usaha transformasi pendidikan bagi memastikan pendidikan di Malaysia seiring dengan pendidikan global kerana sistem pendidikan yang berkesan mampu meningkatkan pembangunan sesebuah Negara kearah yang lebih baik dan mampan, terutamanya dalam bidang sains dan teknologi. Perubahan ini juga perlu dilakukan dengan memberi pendedahan kepada murid di peringkat sekolah rendah sehingga ke peringkat tertiar berkaitan revolusi industri 4.0.

Sehubungan dengan itu, Kementerian Pendidikan Malaysia (2013) telah melaksanakan Pelan Pembangunan Pendidikan Malaysia (PPPM) 2013-2025 untuk meningkatkan taraf pendidikan dengan memantapkan pelbagai strategi menerusi pengukuhan dalam bidang pendidikan Sains, Teknologi,



Kejuruteraan dan Matematik di Malaysia untuk meningkatkan sumber tenaga mahir dan pakar dalam bidang penyelidikan dan industri seiring dengan kehendak revolusi industri 4.0. Oleh itu, pendidikan Sains, Teknologi, Kejuruteraan dan Matematik (STEM) merupakan agenda yang diberi penekanan oleh Kementerian Pendidikan Malaysia (KPM) untuk menarik lebih ramai murid menceburi bidang ini di peringkat sekolah dengan menerapkan elemen STEM dalam Kurikulum Standard Sekolah Rendah (KSSR) dan Kurikulum Standard Sekolah Menengah (KSSM). Seterusnya, pelaksanaan STEM ini telah mula dilaksanakan di Amerika Syarikat pada awal tahun 90-an sehingga kini bagi melengkapkan warganegaranya untuk menceburi bidang kerjaya berkaitan dengan bidang STEM dan di beberapa buah negara asia lain seperti Jepun dan Korea turut melaksanakan STEM dalam sistem pendidikan mereka. Namun, kini di Malaysia juga telah menjadikan pendidikan STEM sebagai teras kepada pembinaan kurikulum baru iaitu kurikulum Sains, Matematik dan juga kurikulum lain (Bunjamin, Muhammad Abd Hadi, 2015). Pendidikan STEM bagi fasa gelombang kedua (2016-2020) dalam PPPM banyak menekankan kempen dan kerjasama dengan badan-badan berkaitan seperti industri bagi menarik minat masyarakat dan murid dalam bidang STEM untuk memupuk, membina dan membangun kemahiran asas dalam bidang tersebut.

Seterusnya dalam konteks pendidikan di Malaysia, STEM merujuk kepada dasar pendidikan dan pilihan kurikulum sekolah untuk meningkatkan daya saing dalam bidang Sains dan Teknologi kepada murid. Seperti mana yang telah termaktub dalam PPPM 2013-2025 yang menekankan pendidikan STEM di peringkat sekolah sebagai elemen teras dalam pembinaan dan pelaksanaannya melalui aktiviti kurikulum dan kokurikulum dengan sokongan menerusi pelbagai pihak berkepentingan. Pendidikan STEM juga turut menekankan konsep komunikasi, kerjasama, kreativiti dan pemikiran kritikal dalam pembelajaran abad ke-21 serta kemahiran berfikir aras tinggi (KBAT). Kasza dan Slater (2017) menyatakan melalui pendidikan STEM dapat menjadikan aktiviti PdPc murid lebih produktif, berimajinasi, merekabentuk dan merangsang psikomotor. Oleh itu, konsep ini mampu melahirkan generasi muda yang berkemahiran tinggi dalam menyelesaikan masalah kompleks dan melahirkan generasi yang memiliki intelektual tinggi, berkemahiran dalam bidang Sains dan Teknologi bagi mendepani revolusi industri 4.0 (Risdiyanto & Mc, 2019). Manakala sistem pendidikan di Malaysia dibahagikan kepada enam peringkat bermula daripada peringkat pra sekolah, peringkat rendah, peringkat menengah rendah, peringkat menengah atas, peringkat tertiar dan sehingga ke peringkat industri atau komuniti. Oleh itu, perancangan inisiatif pendidikan STEM ini dapat memberikan impak positif kepada sistem pendidikan dan pembangunan ekonomi negara untuk jangka masa yang panjang.

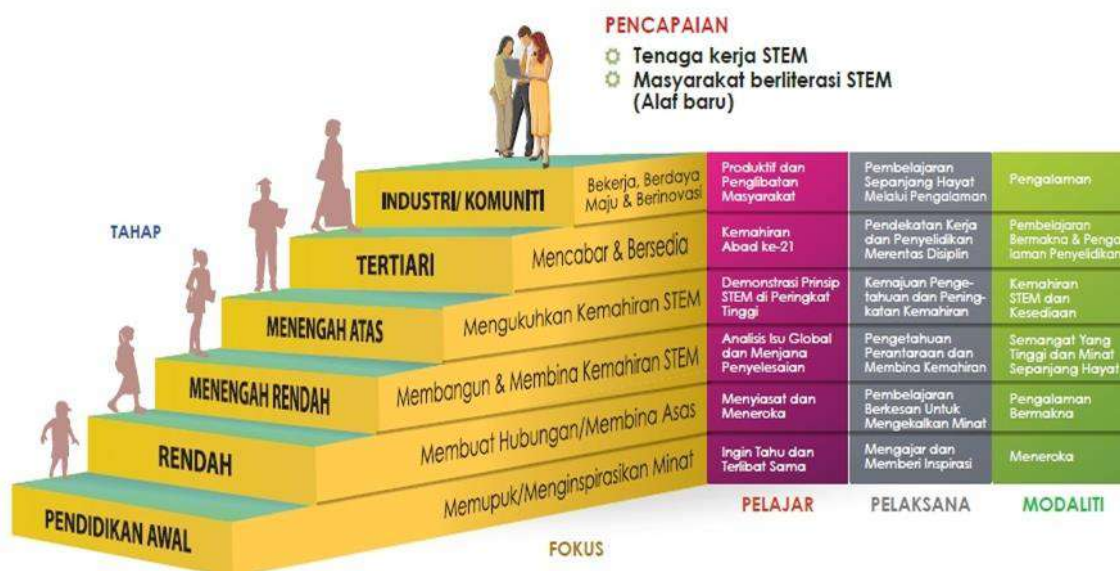
Di samping itu, pelaksanaan Dasar 60:40 (sains/teknikal: sastera) telah dilaksanakan bagi menyediakan dan melahirkan lebih ramai tenaga kerja mahir yang berkepakaran tinggi dalam bidang Sains dan Teknologi. Namun dasar ini masih belum mencapai sasaran yang ditetapkan dalam PPPM 2013-2025 kerana ianya melibatkan kerja keras dari pelbagai pihak untuk menjayakan pelbagai strategi pengukuhan bagi mata pelajaran STEM dapat dicapai (Kementerian Pendidikan Malaysia, 2013).

Pelaksanaan pendidikan STEM di peringkat sekolah masih kurang dilaksanakan kerana guru-guru dalam proses menguasai perubahan kurikulum itu sendiri mengikut bidang masing-masing. Jayarajah, Saat & Rauf (2014) menyatakan kajian STEM bersepadu di Malaysia banyak tertumpu pada peringkat pendidikan tinggi dan masih kurang penekanan pada peringkat sekolah kerana pengetahuan dan kemahiran dalam bidang STEM ini perlu diterapkan dan dikuasai oleh guru agar guru dapat memperkasakan asas pengetahuan, kemahiran dan kompetensi guru dalam bidang kepakaran mata pelajaran mereka bagi membina asas yang kukuh. Perkara ini penting kerana ianya melibatkan proses penyampaian kandungan kurikulum kepada murid dengan jelas dan berkesan serta murid dapat mengaplikasikan ilmu yang diperolehi dalam kehidupan seharian mereka sendiri. Justeru itu, kertas konsep ini akan membincangkan tentang kompetensi guru dalam melaksanakan pendidikan STEM dalam proses penyampaian pengajaran dan pembedahan (PdPc). Namun, salah satu mata pelajaran yang menerapkan elemen STEM adalah kurikulum mata pelajaran Reka bentuk dan Teknologi (RBT) yang telah ditambahbaik bagi menggantikan Kurikulum kemahiran Hidup bersepadu (KHB). Oleh itu, guru RBT perlu bersedia menghadapi era revolusi ini dan memiliki kompetensi serta pakar dalam bidang mata pelajaran mereka untuk melahirkan murid yang mampu bersaing dan berketerampilan pada abad ke-21 berteraskan sains dan teknologi. Serta kualiti guru dalam PdPc berasaskan STEM perlu diberi tumpuan serius (Syafril, Syafrimen & Rahayu, Titik & Othman, Kamisah & Halim, Lilia & Erlina, Nova, 2018).

## 2.0 PERLAKSANAAN STEM DALAM KURIKULUM RBT

Mendepani cabaran pendidikan di era Revolusi Industri 4.0, generasi muda pada masa kini khususnya perlu menguasai bidang STEM terutamanya pengetahuan dan kemahiran dalam bidang-bidang sains dan teknologi bagi membangunkan sistem perisaian, reka bentuk dan pengendali program dalam meningkatkan ekonomi Negara, seperti mana Negara Indonesia yang melaksanakan program Making Indonesia 4.0 untuk menjadikan negaranya tersenarai dalam 10 buah Negara yang memiliki ekonomi kukuh pada tahun 2030 (Satya, 2018) dengan melakukan pelbagai perubahan termasuk perubahan dalam bidang kurikulum pendidikan. Justeru itu, jika dilihat dalam konteks pendidikan Malaysia pula pada hari ini pelaksanaan STEM berada pada gelombang kedua pelaksanaan dalam PPPM (2013-2025) yang banyak melibatkan agensi luar untuk terus mempromosikan dan menjayakan STEM kepada umum. Dengan kerjasama yang diberikan oleh pelbagai pihak dapat memperlihatkan pendidikan STEM bakal melahirkan generasi muda yang berintelektual tinggi dan berkemahiran dalam bidang Sains dan Teknologi terutamanya. Serta mencipta generasi yang bertanggungjawab dalam memajukan matlamat pendidikan, (Syafri dan etl., 2018). Perkembangan semasa di Malaysia pula memperlihatkan minat mendalam kerajaan Malaysia untuk melaksanakan dan mempertingkatkan pendidikan STEM di semua peringkat sistem pendidikan untuk menghadapi cabaran era revolusi 4.0 bagi menyumbang kepada tenaga kerja dan masyarakat yang berlestarikan STEM dengan kerjasama dan sumbangan daripada semua pihak yang berkepentingan dari semasa ke semasa. Oleh itu, institusi pendidikan perlu memainkan peranan penting dalam memperkasakan STEM di peringkat akar umbi.

Berdasarkan buku Panduan Pelaksanaan Sains, Teknologi, Kejuruteraan dan Matematik (STEM) di dalam pembelajaran dan pemudahcaraan (PdPc) pada tahun 2016, elemen STEM dalam Kurikulum Standard Sekolah Rendah (KSSR), Kurikulum Standard Sekolah Menengah (KSSM) sudah termaktub dengan jelas. Dalam konteks pendidikan Malaysia, STEM merujuk kepada dasar pendidikan dan pilihan kurikulum sekolah untuk meningkatkan daya saing dalam bidang sains serta teknologi kepada murid. Perlaksanaannya perlu lebih menyeluruh, tersusun dan dicerap keberhasilannya supaya keberkesanan dapat dilaksanakan dan dipertingkatkan kearah yang lebih baik. Pendidikan STEM merupakan pendidikan sepanjang hayat yang dapat dilaksanakan secara formal berdasarkan kurikulum dan bukan formal melalui aktiviti kokurikulum dan juga koakademik.



Rajah 1: Kerangka Konseptual Pendidikan STEM  
(Sumber: Bahagian Perancangan dan Penyelidikan Dasar Pendidikan, 2016)

Merujuk kepada Rajah 1 menjelaskan tentang kerangka konseptual pendidikan STEM yang melibatkan beberapa tahap yang perlu diberi fokus dan penekanan awal dalam pelaksanaan STEM di peringkat rendah di mana murid perlu didedahkan dengan asas-asas pengetahuan STEM dan mengaitkan dengan kehidupan harian melalui aktiviti penyiasatan dan penerokaan, ini membantu dalam membentuk

pemikiran kritis dan kreatif dalam mengembangkan potensi dalam diri murid. Manakala peringkat menengah rendah dengan meningkatkan potensi murid dengan membina dan membangunkan kemahiran STEM kepada murid bagi pelbagai bidang mata pelajaran dan pada tahap ini juga guru-guru merangsang murid untuk menceburi dalam pendidikan teknikal dan vokasional. Manakala tahap menengah atas ialah dengan mengukuhkan kemahiran STEM kepada murid, seterusnya tahap tertiar pula pelajar memilih bidang yang menarik minat mereka di dalam bidang kemahiran, Sains dan Teknologi yang lebih mencabar sebelum meneruskan kerjaya dalam industri dan sebagainya (KPM, 2016).

Kementerian pendidikan Malaysia (KPM) sentiasa memantau sebarang keperluan untuk penambahbaikan bagi sesuatu bidang kurikulum. Oleh itu, perkembangan kurikulum tidak akan berubah sendiri tanpa faktor yang mempengaruhinya seperti perubahan pendidikan abad ke-21 dan keperluan kemahiran abad ke-21 yang menekankan kepada penggunaan teknologi, kreativiti, pemikiran kritis, kemampuan interpersonal dan sosial yang seiring dengan era revolusi yang ingin dicapai (Arsad, Osman dan Soh, 2011). Hal ini berlaku seiring dengan perkembangan dunia pendidikan semasa yang dianggap sebagai suatu proses dinamik dan seimbang. Pelan pembangunan Pendidikan Malaysia 2013-2025 menyatakan pada gelombang 2 (2016-2020) dan gelombang 3 (2021-2025) untuk perlaksanaan kurikulum baru dan kurikulum semakan semula yang telah dilaksanakan pada tahun 2011 bagi Kurikulum Standard Sekolah Rendah (KSSR) dan Kurikulum Standard Sekolah Menengah (KSSM) pada tahun 2017. Kurikulum baru ini dilaksanakan bagi memastikan kesinambungan pendidikan rendah dengan pendidikan menengah, transformasi kurikulum dilaksanakan ke atas kurikulum bersepadu sekolah menengah (KBSM) kepada Kurikulum Standard Sekolah Menengah (KSSM). KBSM diperkukuhkan dan ditambahbaik bagi memastikan ianya sentiasa relevan dengan keperluan semasa dan cabaran abad ke-21 yang lebih kompleks. Oleh itu, KSSM digubal dalam bentuk standard yang menetapkan kompetensi tertentu yang murid perlu kuasai pada satu tempoh dan tahap persekolahan. Kompetensi ini diterjemahkan ke dalam aktiviti yang boleh diukur dan diuji.

Pelaksanaan Kurikulum Standard Sekolah Menengah (KSSM) telah diperkenalkan pada tahun 2017 secara berperingkat bermula dengan Tingkatan 1. Pelbagai penambahbaikan dalam beberapa mata pelajaran mengikut keperluan dan kehendak semasa. Salah satu perubahan dan penambahbaikan mata pelajaran yang diperkenalkan dalam KSSM ialah Reka Bentuk dan Teknologi (RBT) yang diajar kepada murid di Tahap III (Tingkatan 1- 3). RBT merupakan mata pelajaran elektif yang memberi penekanan kepada mereka bentuk dalam penghasilan produk berasaskan teknologi serta melibatkan '*hands on*' serta penerapan pendekatan STEM, (Bahagian Pembangunan Kurikulum, 2015). Mata pelajaran RBT Tingkatan 1 sehingga tingkatan 3 adalah kesinambungan daripada mata pelajaran RBT yang telah diperkenalkan kepada murid di Tahap II sekolah rendah. RBT di sekolah menengah dilaksanakan bagi menggantikan kurikulum mata pelajaran Kemahiran Hidup Bersepadu (KHB) sekolah menengah yang telah diperkenalkan pada tahun 1989. Kurikulum RBT bertujuan untuk melahirkan murid yang boleh berkarya dalam menghasilkan produk yang berinovasi. Manakala aspek pembangunan dan perkembangan modal insan secara menyeluruh dan seimbang merupakan faktor penting dalam penggubalan kurikulum. Penekanan pendidikan STEM diberi keutamaan dalam bidang Sains dan Matematik, namun bidang reka bentuk dan teknologi perlu diberi penekanan agar murid mengaplikasikan pengetahuan, kemahiran dan nilai melalui aktiviti reka bentuk dan menghasilkan produk yang berfungsi. Perubahan dokumen Standard Kurikulum dan Pentaksiran RBT KSSM ini merangkumi bidang awam, elektrik, elektronik, mekanikal, sains rumah tangga, sains pertanian dan pengurusan kewangan bagi bagi memenuhi keperluan revolusi industri 4.0. Oleh itu, penerapan STEM dalam RBT amat sesuai mengikut keperluan dan kehendak semasa yang melibatkan bidang teknologi dan sains dimana murid didedahkan dengan pembelajaran teori, amali dan kemahiran '*hands on*' bagi menguasai '*soft skill*'. Aktiviti pengajaran dan pemudahcaraan (PdPc) perlu menekankan penguasaan murid terhadap semua bidang dalam kurikulum RBT dengan penerapan STEM mengikut kesesuaian isi kandungan. Walau bagaimanapun, pendidikan STEM dalam kurikulum baru RBT perlu diberi perhatian supaya ianya seiring dengan keperluan dunia semasa yang semakin berkembang maju dari revolusi 4.0 dan tidak mustahil menuju revolusi 5.0 di masa akan datang.

Oleh itu, dengan penambahbaikan mata pelajaran RBT ini penerapan dan pelaksanaan STEM dapat mempertingkatkan pembudayaan STEM dalam pendidikan, salah satunya adalah dengan pembangunan siri Bahan Sumber STEM 2017 (BSTEM 2017) bagi setiap mata pelajaran yang menerapkan elemen STEM dalam KSSM sebagai panduan dan pencetus idea kepada guru untuk berkreaitiviti melaksanakan aktiviti STEM dalam PdPc RBT. Umumnya pelaksanaan STEM dalam mata pelajaran RBT bagi membangunkan pelbagai kecekapan kognitif dan sosial murid serta memberi peluang menyelesaikan masalah dalam konteks

dunia sebenar serta meningkatkan pemahaman dan penglibatan murid terhadap bidang STEM melalui mata pelajaran RBT. Perkara ini dilihat sesuai dalam membantu guru untuk mahir dan kompeten dalam bidang mata pelajaran mereka mengikut kesesuaian inovasi dan kemahiran yang diperlukan untuk memupuk murid supaya lebih aktif dalam mengembangkan potensi diri mereka (Syafri dan et al., 2018). Pelbagai aktiviti yang dapat diaplikasikan mengikut kesesuaian kurikulum untuk menghasilkan satu produk konsep. Oleh itu, guru berperanan penting sebagai fasilitator dalam membangkitkan kreativiti dan inovasi murid untuk mengaplikasikan pengetahuan tentang asas reka bentuk.

### 3.0 KOMPETENSI GURU RBT DAN PELAKSANAAN STEM

Kompetensi ditakrifkan sebagai gabungan pengetahuan, kemahiran dan ciri-ciri atau "*personality traits*" yang perlu bagi melaksanakan sesuatu tugas atau tanggungjawab. Manakala Agus Dharma (2003), mentakrifkan kompetensi sebagai kemampuan atau kecekapan yang dipamerkan oleh seseorang ketika melakukan sesuatu. Hasnah (2017), menyatakan kompetensi adalah gabungan pengetahuan, kemahiran, pemahaman dan sikap praktik dalam melakukan sesuatu tugas. Serta tahap kompetensi guru yang tinggi penting untuk inovasi kurikulum tercapai. Menurut Ariffin (2010), menyatakan kompetensi sebagai gabungan aspek pengetahuan, kemahiran dan ciri-ciri peribadi dan perlakuan yang perlu dimiliki serta diamalkan bagi melaksanakan sesuatu pekerjaan atau tugas. Istilah kompetensi telah ditafsirkan dari pelbagai pandangan atau perspektif yang berbeza dan asalnya telah digunakan di dalam bidang pendidikan untuk menjelaskan tingkah laku tenaga pengajar (Bowden dan Masters, 1993). Oleh itu, definisi khusus kompetensi merupakan satu ukuran yang ditetapkan bagi seorang guru dalam menguasai pelbagai peringkat kompetensi yang diperlukan.

Teori Spencer dan Spencer (1993) yang menggunakan Model Kompetensi "*Iceberg*" menekankan tiga komponen kompetensi iaitu pengetahuan yang melibatkan kebolehan meningkatkan pengetahuan secara berterusan bagi meningkatkan prestasi diri, komponen kedua ialah kemahiran melibatkan kemahiran mengguna dan memanfaatkan pengetahuan dan kemahiran yang diperolehi untuk melakukan tugas dengan cemerlang bagi mencapai sasaran atau objektif dan komponen ketiga ialah ciri-ciri peribadi iaitu nilai-nilai peribadi dan perlakuan yang perlu dihayati dan diamalkan oleh guru. Oleh itu dapat dijelaskan bahawa kompetensi guru dalam pengajaran dan pemudahcaraan adalah gabungan ketiga-tiga komponen pengetahuan, kemahiran dan sikap dan personaliti dalam melaksanakan PdPc dengan berkesan. Kompetensi ini juga diperlukan oleh guru-guru mata pelajaran RBT untuk melaksanakan STEM dalam mempelbagaikan inovasi yang melibatkan aktiviti STEM. Namun, Syafrimen (2010) berpendapat guru perlu menguasai dan memiliki pelbagai kemahiran antaranya inovasi kaedah PdPc, menguasai teknologi untuk keperluan dan memudahkan proses PdPc serta membentuk dan membina hubungan yang baik semasa proses PdPc dilaksanakan.

Di samping itu, merujuk kepada Kolokium pendidikan STEM kebangsaan pada tahun 2019 telah diadakan di Universiti Malaysia Pahang (UMP) Pahang yang disempurnakan oleh Menteri Pendidikan telah menekankan beberapa perkara iaitu meningkatkan kompetensi, pengetahuan dan kemahiran guru bagi memantapkan PdPc berkaitan mata pelajaran STEM serta mewujudkan rangkaian kerjasama dan berkolaborasi antara pihak berkepentingan berkongsi ilmu pengetahuan, kemahiran dan pengalaman dalam melaksanakan program berkaitan pendidikan STEM dan amalan terbaik untuk menjayakan pendidikan STEM di semua peringkat pendidikan di Malaysia. Serta melatih pendidik dalam menerapkan kurikulum STEM kepada murid, serta beberapa usaha untuk merapatkan jurang perbezaan pencapaian Sains, Teknologi, Kejuruteraan dan Matematik dalam peperiksaan utama di antara sekolah-sekolah bandar dan luar bandar. Meningkatkan peluang pekerjaan berkaitan STEM bagi graduan dan latihan kemahiran yang bersesuaian kepada mereka. Oleh itu, pelbagai langkah dilaksanakan untuk menjayakan kurikulum baru yang telah meletakkan agenda STEM sebagai elemen penting dalam pembinaan dan pelaksanaannya di peringkat persekolahan terutamanya bidang mata pelajaran yang menerapkan pendidikan STEM. Namun, pelbagai usaha perlu untuk mengatasi kekangan yang dihadapi serta meningkatkan latihan profesional kepada para guru dan bakal guru dan juga pelaksana dasar. Bagi melaksanakan perubahan dasar yang telah dibangunkan guru-guru perlu mahir dalam proses PdPc mereka melalui penerapan STEM. Namun begitu, pendedahan dan keperluan memahami konsep STEM itu sendiri perlu diberi pendedahan dengan lebih baik agar pelaksanaan kurikulum baru dapat disampaikan dengan lebih jelas oleh pelaksana dasar kepada guru dan seterusnya kepada murid agar proses tersebut dapat berjalan dengan lancar.

Kementerian Pendidikan Malaysia (2016) menyatakan pelaksanaan PdPc STEM dilaksanakan melalui inkuiri, penyelesaian masalah dan juga projek maka guru RBT perlu kompeten dan bersedia dalam menguasai pengetahuan, kemahiran dalam melaksanakan PdPc STEM bagi mata pelajaran RBT supaya proses PdPc dapat disampaikan dengan jelas dan lancar kepada murid. Aldemir & Kermani (2016) menyatakan pemahaman murid melalui STEM akan dapat ditingkatkan dengan kompetensi yang dimiliki oleh guru-guru dengan kaedah PdPc yang mantap serta sikap positif guru terhadap murid. Namun, kekurangan pendedahan pendidikan STEM secara menyeluruh dari aspek latihan professional yang perlu diperkukuhkan dan ditambahbaik untuk membantu guru menjadi lebih kompeten dari segi pengetahuan, kemahiran dan sikap dalam kesediaan melaksanakan pendidikan STEM, Bunyamin, Muhammad Abd Hadi (2015). Guru-guru perlu melihat sejauhmana STEM sedia ada dan langkah lanjutan dalam mengaplikasikannya dalam pengajaran dan pemudahcaraan RBT dapat dilaksanakan dengan lebih mendalam dalam PdPc. Guru-guru memainkan peranan penting kerana menjadi pendokong utama dalam menjayakan agenda pemerkasaan STEM. Tugas dan cabaran guru kini berbeza jika dibandingkan dengan dahulu kerana perubahan ini berlaku selari dengan transformasi pendidikan yang kini berada pada abad ke-21. Abdullah, Abdul (2017) menyatakan dalam menggabungkan potensi dan bakat murid, guru perlulah terlebih dahulu mempunyai kepimpinan, bersedia dan kompeten untuk memainkan peranan yang baik dalam mendidik generasi hari ini supaya lebih berkekrativiti dan berinovasi. Guru yang menguasai pengetahuan kandungan kemahiran pengajaran dan pembelajaran ialah guru yang cekap menggunakan kemahiran lisan, teknik menyoal serta mempunyai bakat memimpin serta sikap guru yang positif dan personaliti yang baik juga mempengaruhi pengajaran. Oleh itu isu dan cabaran dalam pendidikan STEM yang melibatkan kualiti guru yang masih lemah dari aspek pengetahuan kandungan STEM kesukaran mengaitkan hubungan yang sesuai dalam PdPc menerapkan dan mengaplikasikan STEM oleh kajian Pearson dan Pearson (2017) perlu dititiberatkan agar ianya dapat ditambahbaik kompetensi guru dalam proses menyampaikan ilmu dan kemahiran kepada murid dengan lebih berkesan. Selain itu, kesediaan guru mengambil risiko, bertoleransi terhadap kesamaan dan sentiasa bersikap ingin tahu merupakan kompetensi guru RBT yang mempengaruhi pelaksanaan STEM dalam pengajaran (Brinkman, 2010).

Walaubagaimanapun, guru-guru RBT perlu kompeten untuk memantapkan kurikulum dalam KSSM yang menerapkan pendekatan STEM. Mat Nor, Mohamad dan Kamarudin, Nurzatulshima and Abdul Manaf, Umi Kalthom and Mohd Puad, Mohd Hazwan (2017) mendapati tahap pengetahuan isi kandungan guru RBT berada pada tahap lemah. Begitu juga dengan kemahiran pedagogi guru RBT juga berada pada tahap kurang mahir manakala penguasaan elemen kemahiran berfikir beraras tinggi dalam pengajaran dan pembelajaran RBT juga berada pada tahap lemah. Ini kerana pada peringkat awal pelaksanaan ini melibatkan guru perlu memahami dan menguasai isi kandungan dan kemahiran pedagogi serta kaedah penerapan kemahiran berfikir aras tinggi (KBAT) yang sesuai untuk disampaikan kepada murid berkaitan dengan topik yang perlu mereka kuasai pada akhir pengajaran dan pemudahcaraan di dalam bilik darjah. Zaiha Nabila (2014) menunjukkan kompetensi guru berada pada tahap tinggi dalam pengajaran amali RBT, dimana dalam mata pelajaran ini memerlukan pelajar untuk berfikir serta menggunakan pengalaman sebenar dalam kerja amali mereka, namun masihkah guru menerapkan elemen STEM dalam pengajaran mereka. Guru yang kurang mempunyai pengetahuan yang cukup dan tidak dapat mengaplikasikan kemahiran yang dimiliki merupakan masalah utama yang menyebabkan guru kurang kompeten dalam pengajaran amali RBT di sekolah rendah (Nurul Syahada, 2017). Mata pelajaran RBT memerlukan guru untuk mendedahkan murid kepada aktiviti amali dan praktikal supaya mereka mampu meningkatkan kemahiran asas untuk diperaktiskan dalam kehidupan sebenar. Harun (2014) untuk memastikan pelajar dapat menguasai RBT, guru harus mahir dalam kemahiran pengajaran, pengetahuan subjek, menguasai bahan dan teknologi serta menggunakan alat bantu mengajar yang sesuai mengikut keperluan mata pelajaran. Namun Azman, Azli, Mustapha, Balakrishnan, dan Isa, (2014) menyatakan guru yang mengajar subjek teknikal perlu bijak serta kreatif dalam pengajaran dengan penggunaan alat bahan bantu mengajar dalam pengajaran mereka di dalam proses penyampaian pengajaran dan pemudahcaraan.

Walaubagaimanapun, untuk menghadapi cabaran pendidikan abad ke-21 pada masa kini guru perlu kompeten dan berkompotensi dengan pelbagai bidang pengetahuan, kemahiran dan bersikap positif dalam menyampaikan isi mata pelajaran supaya ianya dapat mencapai objektif yang ditetapkan serta disampaikan secara menyeluruh kepada murid dalam proses pengajaran dan pemudahcaraan. Selain itu, guru-guru perlu menguasai pendekatan dan strategi pengajaran yang ingin digunakan dalam proses pengajaran dan pemudahcaraan pengaplikasian STEM dalam mata pelajaran RBT. Guru perlu mengetahui kaedah menggunakan teknologi terkini bagi membolehkan guru mendapatkan bahan-bahan sebagai rujukan

tambahan selain buku teks. Jamaliah, (2014) mendapati kemahiran dan keterampilan guru-guru perlu terus diperbaharui dan ditingkatkan seiring dengan perubahan yang berlaku sama ada kepada kandungan (*content*) atau pendekatan dan strategi PdPc. Sikap, keinginan, inisiatif sendiri dan motivasi guru untuk melakukan kerja dalam bidang profesion mereka sendiri dengan lebih baik. Sikap guru juga memainkan peranan penting sebagai motivasi dalam mempengaruhi proses PdPc di dalam bilik darjah dan luar bilik darjah untuk menjadikan proses PdPc menarik dan memberi peluang kepada pelajar untuk berkeaktiviti dan berinovasi dalam membangunkan sesuatu reka cipta.

#### 4.0 IMPLIKASI PELAKSANAAN STEM DALAM PENGAJARAN RBT

Industri 4.0 telah banyak membawa perubahan kepada dunia kerjaya dan kehidupan manusia. Oleh itu, Implikasi perlaksanaan STEM dalam pengajaran RBT dapat menjadikan PdPc lebih kreatif dalam membangkitkan kreativiti murid supaya lebih berinovasi berteraskan era revolusi industri 4.0 yang semakin mencabar serta kompetensi guru dalam membimbing aktiviti yang dilaksanakan. Oleh itu, kompetensi guru perlu diberi perhatian dan sangat penting dalam membangkitkan pemikiran kritis, kreatif dan penyelesaian masalah kompleks oleh murid dalam menguasai bidang sains dan teknologi secara asasnya. Selain itu, hasrat kerajaan dalam melahirkan tenaga kerja mahir dapat dipupuk pada peringkat awal persekolahan seterusnya kepada peringkat tertiar dalam bidang STEM untuk menceburi kerjaya bidang STEM yang mencabar. Manakala pihak sekolah dan kementerian Pendidikan juga perlu memberi latihan pembangunan profesionalisme kepada guru-guru dalam usaha meningkatkan pengajaran guru RBT supaya lebih kompeten dan professional untuk melaksanakan pendidikan STEM serta melibatkan pihak-pihak luar dan NGO dalam membantu guru untuk meningkatkan prestasi mereka serta penglibatan guru dan murid dalam menyertai kurikulum dan kokurikulum di peringkat antarabangsa dalam persaingan bakat dan potensi mereka dengan lebih baik dan ini menjadikan sesuatu yang positif kepada sistem pendidikan di Malaysia.

#### 5.0 PENUTUP

Kesimpulannya, kompetensi guru dalam pengajaran RBT seharusnya dipertingkatkan dari semasa ke semasa dengan memperkukuhkan dari aspek pengetahuan, kemahiran dan sikap dan diberi perhatian yang sewajarnya dalam usaha untuk memperkasakan pendidikan STEM dalam kalangan guru-guru RBT di peringkat sekolah untuk melahirkan murid yang berkeaktiviti, kompetitif, berinovasi dan berdaya saing sehingga ke peringkat tertiar dan seterusnya menyumbang kepada kemajuan negara. Dengan ini, hasrat Kementerian Pendidikan dalam PPPM 2013-2025 dapat dicapai terutamanya dalam pendidikan STEM untuk menghasilkan tenaga kerja STEM dan masyarakat yang berliterasi STEM untuk masa hadapan.

#### RUJUKAN

- Abdullah, Abdul. (2017). Kesiediaan Guru Matematik Sekolah Menengah Dalam Melaksanakan Proses Pembelajaran dan Pengajaran Abad ke-21. Kesiediaan Guru Matematik Sekolah Menengah Dalam Melaksanakan Proses Pembelajaran dan Pengajaran Abad ke-21. 2017. 567-584.
- Aldemir, J., & Kermani, H. (2016). Integrated STEM curriculum: improving educational outcomes for Head Start children. *Early Child Development and Care*. doi:10.1080/03004430.2016.1185102
- Arsad, N. M., Osman, K., & Soh, T. M. T. (2011). Instrument development for 21st century skills in Biology. *Procedia Social and Behavioral Sciences*, 15(2011), 1470–1474. doi:10.1016/j.sbspro.2011.03.312
- Ariffin, S.R (2010), Penilaian Pembelajaran Peserta Program Kelayakan Profesional Kepengetuan Kebangsaan. *Jurnal Pendidikan Malaysia*, Page 67-75. ISSN 0126-6020.
- Bunyamin, Muhammad Abd Hadi. (2015). Pendidikan STEM Bersepadu: Perspektif Global, Perkembangan Semasa di Malaysia, dan Langkah Ke hadapan. *Buletin Persatuan Pendidikan Sains dan Matematik Johor*. 25. 1-6.
- Bowden, J. A. and Masters, G. N. (1993). Implications for Higher Education of a Competency-based Approach to Education and Training. Australian Government Publishing Service: Canberra.
- Brinkman, D. J. (2010). Teaching Creatively and Teaching for Creativity. *Arts Education Policy Review*, 111(2), 48–50.



- Dharma, Agus. 2003. Manajemen Supervisi. Cetakan Kelima, RajaGrafindo Persada, Jakarta.
- Harun, Z., N. (2014). Kompetensi Guru dalam Pengajaran Amali Reka Bentuk dan Teknologi di Sekolah Rendah Daerah Batu Pahat.
- Hasnah Isnon, Jamaludin Badusah (2017). Kompetensi Guru Bahasa Melayu Dalam Menerapkan Kemahiran Berfikir Aras Tinggi Dalam Pengajaran dan Pembelajaran. Jurnal Pendidikan Bahasa Melayu-JPBM. ISSN: 2180-4842. Vol. 7, Bil. 1 (Mei 2017): 56-65
- Jayarajah, K., Saat, R. M., & Rauf, R. A. A. (2014). A review of science, technology, engineering & mathematics (STEM) education research from 1999-2013: A Malaysian perspective. Eurasia Journal of Mathematics, Science & Technology Education.
- Jamaliah Jamaludin (2014), Kesediaan Guru Kolej Vokasional Dalam Pengajaran Amali Teknologi Elektronik Teknologi Di Negeri Pahang. Ijazah Sarjana pendidikan teknik dan Vokasional. Universiti Tun Hussien Onn, Malaysia.
- Kasza, P., & Slater, T. F. (2017). A Survey Of Best Practices And Key Learning Objectives For Successful Secondary School STEM Academy Setting. 10(1), 53–66.
- Kementerian Pendidikan Malaysia (2013). Pelan Pembangunan Pendidikan Malaysia 2013-2025 (Pendidikan Prasekolah Hingga Lepas Menengah) Putrajaya: Kementerian Pendidikan Malaysia. Capaian Online <https://www.moe.gov.my/index.php/dasarmenu/pelan-pembangunan-pendidikan-2013-2025>
- Kementerian Pendidikan Malaysia (2016). Panduan Perlaksanaan Sains, Teknologi, kejuruteraan dan matematik (STEM) dalam pengajaran dan Pembelajaran. Bahagian Pembangunan Kurikulum. Putrajaya: Kementerian Pendidikan Malaysia.
- Kementerian Pendidikan Malaysia (2015). Kurikulum Standard Sekolah Menengah (KSSM). Bahagian Pembangunan Kurikulum. Putrajaya: Kementerian Pendidikan Malaysia.
- Kementerian Pendidikan Malaysia (2017). Siri Bahan Sumber STEM: Reka Bentuk & Teknologi (Sekolah Menengah) 2017, Bahagian Pembangunan Kurikulum. Capaian Online [https://issuu.com/mhy320/docs/11\\_bstem\\_2017\\_rbt\\_men](https://issuu.com/mhy320/docs/11_bstem_2017_rbt_men)
- Mestry, R., Grobler, B.R., (2004). The training and development of principals to manage schools effectively using the competence approach. International Studies in Educational Administration 32 (3), 2–19.
- M.N.A, Azman & Amierah Azli, Nur & Mustapha, Ramlee & Balakrishnan, Balamuralithara & Mohd Isa, Nor Kalsum. (2014). Penggunaan Alat Bantu Mengajar ke Atas Guru Pelatih Bagi Topik Kerja Kayu, Paip dan Logam. Sains Humanika. 3.
- Mohamad Nurul Azmi Mat Nor, Nurzatulshima Kamarudin, Umi Kalthom Abdul Manaf, Mohd. Hazwan Mohd Puad (2017). Pengetahuan Kandungan Dan Kemahiran Pedagogi Guru Dalam Kurikulum RekaBentuk Dan Teknologi (RBT): International Research Journal of Education and Sciences (IRJES) Vol. 1Special Issue 1 (Malay), 2017eISSN 2550-2158.
- Nurul Syahada Mohd Suhaimi (2017). *Standard Guru Malaysia Dalam Program Persediaan Guru Reka Bentuk dan Teknologi*. Fakulti Pendidikan Teknik Dan Vokasional. Universiti Tun Hussein Onn Malaysia.
- Pearson, G., & Pearson, G. (2017). National academies piece on integrated STEM National academies piece on integrated STEM. The Journal of Educational Research, 110(3), 224–226. doi:10.1080/00220671.2017.1289781
- Risdianto, Eko & Cs, M. (2019). ANALISIS PENDIDIKAN INDONESIA DI ERA REVOLUSI INDUSTRI 4.0.
- Satya, V. E. (2018). STRATEGI INDONESIA MENGHADAPI INDUSTRI 4.0. Jakarta. Retrieved from <https://bikinpabrik.id/wp-content/uploads/2019/01/Info-Singkat-X-9-IP3DI-Mei-2018-249.pdf>
- Syafril, Syafrimen & Rahayu, Titik & Othman, Kamisah & Halim, Lilia & Erlina, Nova. (2018). KUALITI GURU, ISU DAN CABARAN DALAM PEMBELAJARAN STEM. 10.31219/osf.io/jqcu6.
- Syafrimen. (2010). Pembinaan Modul Eq Untuk Latihan Kecerdasan Emosi Guru-Guru Di Malaysia.
- Spencer, L.M. Jr. and Spencer, S.M. (1993) Competence at work: Models for superior performance. John Wiley & Sons, Inc., New York.
- Kolokium Pendidikan STEM Kebangsaan (2019). STEM Tingkatkan Kemahiran Guru dan Pelajar. Capaian Online <https://malaysiaaktif.my/58495>

Zaiha Nabila Md Harun (2014), Kompetensi Guru Dalam Pengajaran Amali Reka Bentuk Dan Teknologi Di Sekolah Rendah Daerah Batu Pahat. Ijazah Sarjana pendidikan teknik dan Vokasional. Universiti Tun Hussien Onn, Malaysia.



## An Integrated Internet of Things (IoT) on the Problem Based Learning Strategy for Climate Issue: A Preliminary Design

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### ABSTRACT

*The Industrial revolution 4.0 has an impact on the development of aspects of people's lives. The positive impacts occur in the rapidly developing, fast and advanced access in education and technology. However, the fact is that industry is the biggest contributor to global warming. The negative effects of it, the higher the intensity of the day. Therefore, there is a need for integration as a solution to reduce the effects of global warming, one of which is through education. Furthermore, Technology development and improving the quality of human resources listed in making Indonesia 4.0 are of concern. Otherwise, five key technology as industry system builder 4.0 is Artificial Intelligence (AI), Internet of Things (IoT), wearable, Advanced Robotics, 3D Printing. The study aims to describe a design for integrating Internet of Things (IoT) on the problem based learning strategy for climate issue. The Internet of Things (IoT) is a concept where internet connectivity can exchange information with each other with objects around it. One learning strategies that are in accordance with climate issues and can be integrated using IoT is problem based learning strategy. Problem based learning (PBL) is a way of learning using scenarios involving real life problems. For this aims, it was identifying the problem using need analysis to design/prototype. Furthermore, discussion criteria to design prototype/design with teachers, practitioners in the field of curriculum, media and learning. Based on the discussion, revision were made on input from teachers and practitioners. In the final stage, an evaluation is carried out. The goal of the stage was preliminary design is hypothetical learning trajectory (HLT) to implement internet of things (IoT) on the problem based learning (PBL) strategy for climate issue. Furthermore, The stages in the learning trajectory, we can see skills than can be demonstrated though learning with internet of things (IoT) on the problem based learning strategy namely, creative thinking skill, higher order thinking skill (HOTS), and critical thinking skill.*

**KEYWORDS:** Internet of Things, Problem Based Learning Strategy, Climate Issue

### 1.0 INTRODUCTION

Technological developments that gave birth to the era of the industrial revolution 4.0, which not only does not merely open wide interaction but also disrupts various fields of human life. The Fourth Industrial Revolution (Scwab, 2016) states that the world has experienced four stages revolution, namely: 1) Industrial Revolution 1.0 occurred in the 18th century through the invention of the steam engine, making it possible for goods to be mass produced, 2) the Industrial Revolution 2.0 occurred 19-20 century through the use of electricity which made production costs cheap, 3) Revolution Industry 3.0 occurred around the 1970s through the use of computerization, and 4) Revolution Industry 4.0 itself occurred around the 2010s through intelligence engineering and the internet of thing as the backbone of the movement and connectivity of humans and machines.

Technological progress is to simplify human life. But since it was invented the machine was able to increase production doubled and cut time and costs incurred. However, in the end all these conveniences have a big impact on humans, because it makes the use of human labor reduced (Murgor, 2013). In Indonesia, with the loss of a lot of work because it turned into automation, so unemployment is a threat that

will occur, at which level unemployment in February 2017 5.01% was 6.82 million people (BPJS, 2019). Not only that, values, social values, and culture also experience changes. The shift in values is reflected in the rise of various events that recently occurred. This natural damage does not only occur due to waste generated from the production process but also the occurrence of global warming due to the rise of industry. Significantly. Right at this point, it is necessary to have a development paradigm that not only enhances human capability in technology, but also needs to improve the mentality of its own people (Edmon, 2014). One way to improve one's mentality is through education (Aoun, 2017). Furthermore, technology development and improving the quality of human resources listed in making Indonesia 4.0 are of concern. Otherwise, Five key technology as industry system builder 4.0 is Artificial Intelligence (AI), Internet of Things (IoT), wearable, Advanced Robotics, 3D Printing. however, the high growth of Internet users is not offset by digital literacy. The high and massive infrastructure development has not been balanced with the knowledge of ICT usage well. So, there is a gap between low technology and knowledge. Built-in infrastructure does not balance knowledge. It is this gap that causes anxiety that results in hoax, cyberbullying, radicalism.

Kay (2008), analyzes developments that will occur in a century 21 and identify 5 conditions or contexts new in life, respectively requires certain competencies. Condition These include: (1) competition conditions global (need for global awareness and independence), (2) conditions of global cooperation (need global awareness, ability to cooperate mastery of Information Communication and Technology (ICT), (3) information growth (need technology literacy, critical thinking & problem solving), (4) development work and career (need critical thinking & problem solving, innovation & improvement, and, flexible & adaptable), (5) development service based economy, knowledge economy (need information literacy, critical thinking and problem solving). To be able to build skills critical thinking, teachers can provide learning experience by designing processes learning. The teacher designs learning by providing problems that involve students' thinking skills and involve the process of analyzing based on an actual problemn (Glazer, 2001). One model learning that can be applied is Problem Based Learning (PBL).

Through PBL students gain experience in handling realistic problems, and emphasizes the use of communication, collaboration, and the resources available to formulate ideas and develop reasoning skills (Akinoglu, 2000).

PBL integrated with the Internet of Things is able to increase interactivity and intelligent responses between objects, is sufficient capital to contribute to the teaching and learning process, especially in increasing interactivity between learning participants with learning objects (Sankey, 2011).

## **2.0 METHODOLOGY**

The type of research that we used was design research. The goal of the stage was preliminary design is hypothetical learning trajectory (HLT) to implement internet of things (IoT) on the problem based learning (PBL) strategy for climate issue. The design research type validation study. Design research consists of three phases, namely developing a preliminary design, conducting pilot and teaching experiments, and carrying out a retrospective analysis. In this study focused on the first stage, namely preliminary design. During the preliminary design, HLT guided the design of instructional materials that had to be developed or adapted. The purpose of the instructions in this case is to be focused in terms of how to deliver teaching materials, instructions on how to observe the learning process that will occur in the classroom, and instructions for conducting interviews with teachers, students, or related parties. HLT consists of three parts, namely learning objectives, learning activities, and hypotheses of the learning process that will occur. So hopefully HLT can cover all aspects needed. During pilot and teaching experiments, the HLT as a guideline for the teacher and researcher what to focus on in teaching, interviewing, and observing. During the retrospective analysis, HLT functioned as guideline in determining what the researcher should focus on in the analysis. The validation the data, discussion criteria to design prototype/design with teachers, practitioners in the field of curriculum, media and learning. Based on the discussion, revision was made on input from teachers and practitioners. In the final stage, an evaluation is carried out.

### 3.0 RESULT AND DISCUSSION

The goal of the stage was preliminary design is hypothetical learning trajectory (HLT) to implement internet of things (IoT) on the problem based learning (PBL) strategy for climate issue. The media for help student making the problem is robot with weather monitoring in figure 2.

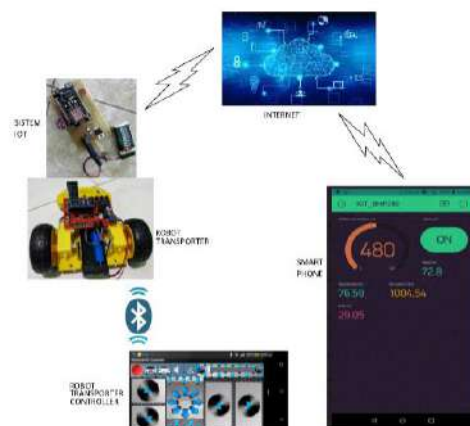


Figure 2. The Diagram of weather monitoring system built with IoT

In education, the Internet of Things is one of the technologies currently considered by educators and government members related to education to use it to innovate and improve learning. The Internet of Things is a technological revolution which represents the future of computers and communication, which development depends on to the dynamics of technological innovation in various ways fields, from wireless sensors to nano technology (G'omeza, 2013). Internet of Things uses several technologies that are broadly combined into a single unit including sensors as data readers, internet connections with a variety of network topologies, radio frequency identification (RFID), wireless sensor networks and technology that will continue to grow as needed (C Wang et al., 2013). Internet of Things is a development science for optimize life based on sensors smart and smart equipment that collaborates through internet network (Keoh, Kumar, & Tschofenig, 2014).

Lessons through PBL can help teachers to teach actively and make students interested learning center. This learning model presents a real problem for students as the beginning of learning then resolved through inquiry and applied using problem solving approach (Yew, 2016). Problem Based Learning (PBL) is a learning approach where students are confronted on authentic (real) problems so they are expected to be able to organize their own knowledge, Fostering high-level skills and inquiry, independence of students, and increase self-confidence (Ajai, 2013). Problem Based Learning students are expected to get more skills rather than memorized knowledge. Starting from skill problem solving, thinking skills critical, proficiency in working within group, interpersonal and communication skills, and skills information search and processing (Tilman, 2013). The Problem Based Learning have five phase:

Phases	Teacher Behavior
<i>Phase 1</i> Student orientation to the problem	<ul style="list-style-type: none"> <li>– Explain the purpose of learning</li> <li>– Describes the required logistics</li> <li>– Motivate students to be actively involved in solving the selected problem</li> </ul>
<i>Phase 2</i> Organize students	<ul style="list-style-type: none"> <li>– Help students define and organize learning tasks related to the problem</li> </ul>
<i>Phase 3</i> Individual and group research guide	<ul style="list-style-type: none"> <li>– Encourage students to gather appropriate information</li> <li>– Encourage students to carry out experiments for explanations and problem solving</li> </ul>
<i>Phase 4</i> Develop and present the work	<ul style="list-style-type: none"> <li>– Assist students in planning and preparing suitable works such as reports, models and sharing assignments with friends</li> </ul>
<i>Phase 5</i> Analyze and evaluate the problem-solving process	<ul style="list-style-type: none"> <li>– Evaluate learning outcomes about the material that has been studied / ask group presentation of the</li> </ul>

Figure 1. Syntax of problem based learning learning (PBL) (Simamora, 2017)

The hypothetical learning trajectory has three important parts namely: goals learning to be achieved, the path of development to be developed by students in achieving learning goals and a set learning activities

or tasks that fit the level of thinking on a developmental trajectory that will help the child develop the thought process even reaches a higher level of thought (Simon, 1995). Hypothetical Learning Trajectory (HLT) is a learning path provided by teachers based on thought to choose a specific learning design, so the concept of elasticity can be understood student. The importance of HLT can be analogized by planning a travel route. If we understand the possible routes for towards the destination, we can choose a route maybe to get to our destination then we can choose a good route (Wijaya, 2009). The explanation HLT can be seen below:

Learning using Problem Based Learning (PBL) with integrating Internet of Things (IoT) for climate issue uses five phases, 1) Student orientation the problem, 2) Organize Student, 3) Individual and group research guide, 4) Develop and present the work, 5) Analyze and evaluate the problem solving process.

Student oriented the problem. In this phase students listen to the problem presented by following the PBL syntax as follows 1) Find the concept words, keywords related to heat transfer in each given problem 2) Look for definitions of concept words and keywords 3) Identifying the problem and designing solutions and actions to overcome identified problems 4) Apply concepts that are relevant for solving the problem at hand. The teacher distributes the worksheets that have been designed to students that contain problems about global warming.

Catatlah hasil pengamatan yang telah dituju oleh teman-temanmu berdasarkan tampilan di layar HP.

Pengamatan	Hasil				
	Intensitas Cahaya (Lux)	Suhu Udara (Celcius)	Tekanan Udara (HPA)	Kelembaban Udara (%)	Ketinggian (Meter)
Tanah Lapang	102.4	42.77	999.17	40.35	118.78
Kebun	92.6	33.65	998.87	54.5	120.39
Tempat Wudhu	63.3	34.14	998.89	59.67	120.21
Ruang kelas 4B	95.4	31.64	998.21	59.63	126.58

Figure 2. Real problem for students through inquiry

Organize Student. This purpose of this activity is the students conduct discussions in groups of the problems given and the teacher guides and observes the process. Division of teams which include using a PC controller, operating the blink application, turning on and off the robot, writing activity reports.

Bagilah pekerjaan dan rencana waktumu sebagai berikut:

Nama	Peran	Waktu
AKLI	Membawa Robot IOT	
Luthfi	Membantu Mengontrol Blynk	
Qifa	Menulis LKPD	
Naila	Presentasi	
Total Waktu		70 menit

Figure 3. Students divide roles

Identifying the problem and designing solutions and actions to overcome identified problems. Encourage students to gather appropriate information, i.e. how to find the highest and lowest light intensities, air temperature, air pressure, humidity and altitude.

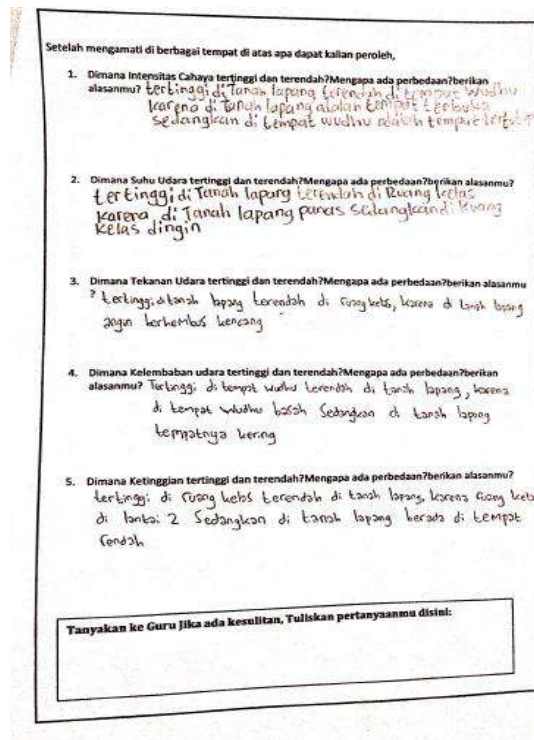


Figure 4. Identifying the problem

Develop and present the work. Each group of students presents their scientific analysis, the other groups are given the opportunity to provide alternative solutions to problems and reinforce the arguments of the groups making presentations.

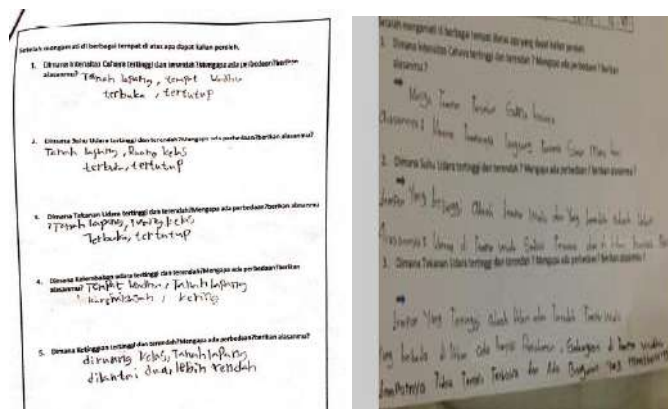


Figure 5. reinforce the arguments of the groups making presentation

Analyze and evaluate the problem solving process. Helping students reflect and evaluate students' investigations in the processes carried out and ask groups for presentations and the teacher gives reinforcement to the students' conclusions

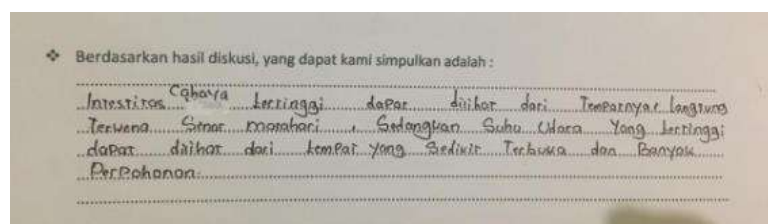


Figure 6. Column to the students' conclusions



#### 4.0 CONCLUSION

A teacher must be able to plan for what might happen during the process of teaching and learning activities later. Thus, for the teacher design and plan learning with a design that can anticipate all possible responses of students to a situation. Planning in accordance with student learning trajectories make it possible to carry out learning actions according to student needs. HLT designed by this researcher could developed through the validation process on the construct and content aspects as well tested and perfected through experiments classroom teaching through pilot and teaching experiment which is stage Didactical Design Research. This research can use an alternative thematic learning on climate issues. Therefore, this study is how to integrate/implement IoT in thematic learning in elementary schools to achieve 21st century learning competencies.

#### 5.0 ACKNOWLEDGMENT

This research supported by Ministry of research, technology and higher education and our colleagues from Universitas Ahmad Dahlan who provided insight and expertise in assisted this research, headmaster, lecturer, and friends that greatly assisted the research.

#### REFERENCES

- Ajai, John T. Benjamin. Imoko. Emmanuel, O'kwu. (2013). Comparison of the learning effectiveness of ProblemBased Learning (PBL) and conventional method of teaching algebra. *Journal of Education and Practice*. 4(1). Nigeria: Taraba State University & Benue State University
- Akinoglu, O., & Tandogan, R. O. (2007). The effects of problem-based active learning nin science education on student's academic achievement, attitude and concept learning. *Eurasia Journal of Mathematics, Science & Technology Education*, 3(1), 71-81.
- Aoun, J.E. (2017). Robot-proof: higher education in the age of artificial intelligence. US: MIT Press.
- Afwan, M. (2013). Leadership on technical and vocational education in community college [Versi elektronik]. *Journal of Education and Practice*, 4 (21), 21-23.
- Edmon, a., & oluiyi, a. (2014). Re-engineering technical vocationaeducation and training toward safety practice skill needs ofsawmill workers against workplace hazards in nigeria [versielektronik]. *Journal of education and practice*, 5 (7), 150-157.
- G'omeza, Jorge, Juan F. Hueteb, Oscar Hoyosa, Luis Perezc, Daniela Grigorid. "Interaction System Based on Internet of Things as Support for Education". The 4th International Conference on Emerging Ubiquitous Systems and Pervasive Networks (EUSPN-2013)
- Glazer, E. (2001). Problem based instruction. In M. Orey (Ed.), *Emerging perspective on learning, teaching, and technology*. Diambil dari <http://www.coe.uga.edu/epltt/ProblemBasedInstruct.htm>.
- Gravemeijer, Koeno dan Paul Cobb. 2006. *Design Research from a Learning Design Perspective*. In: Jan Van Den Akker, Koeno Gravemeijer, Susan McKenney dan Nienke Nieveen. *Educational Design Research*. London: Routledge
- Kay, K. (2008). Preparing every child for the 21st century. APEC Ed Ne–Xi'an (Symposium) Xi'an China, January 17
- Murgor, t.k. (2013). Relationship between technical and vocational acquired skills and skills required in job market: Evidence from tvet institutions, uasingishu country, kenya [versi elektronik]. *journal of education and practice*, 4 (19), 77-83.
- Sahyar, Ridwan A. Sani, and Tionar Malau, "The Effect of Problem Based Learning (PBL) Model and Self Regulated Learning (SRL) toward Physics Problem Solving Ability (PSA) of Students at Senior High School." *American Journal of Educational Research*, vol. 5, no. 3 (2017): 279-283. doi: 10.12691/education-5-3-8.
- Sankey M.D., D. Birch and M.W. Gardiner. The impact of multiple representations of content using multimedia on learning outcomes across learning styles and modal preferences. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, 2011, Vol. 7, Issue 3, pp. 18-35. Url:[http://www.editlib.org/p/42356/article\\_42356.pdf](http://www.editlib.org/p/42356/article_42356.pdf)

- Shwab, k. (2016). The fourth industrial revolution. New york: Crown business.
- Simamora, Rustam E. & Rotua Sidabutar, Dewi & Surya, Edy. (2017). Improving Learning Activity and Students' Problem Solving Skill through Problem Based Learning (PBL) in Junior High School. International Journal of Sciences: Basic and Applied Research (IJSBAR). 33. 321-331.
- Simon, M. A. (1995). Reconstructing Mathematics Pedagogy from a Constructivist Perspective. Journal for Research in Mathematics Education, 26(2), 114-145. Tersedia dalam <http://www.math.ntnu.Edu.tw>. Diakses 26 Desember 2014.
- Tillman, D. (2013). Implications of problem-based learning (PBL) in elementary schools upon the K-12 engineering education Pipeline. The University of Texas at El Paso (UTEP). Conference & Exposition (2013) Paper ID #7729
- UBS. Extreme automation and connectivity: The global, regional, and investment implications of the Fourth Industrial Revolution. January 2016. [https://www.staticubs.com/global/en/about\\_ubs/follow\\_ubs/highlights/davos2016/\\_jcr\\_content/par/columncontrol/coll1/actionbutton.1402140804.file/bGluay9wYXRoPS9jb250ZW50L2RhYm91YmVZ2xvYmFsL2Fib3V0X3Vicy9mb2xsb3ctdWJzL3dl](https://www.staticubs.com/global/en/about_ubs/follow_ubs/highlights/davos2016/_jcr_content/par/columncontrol/coll1/actionbutton.1402140804.file/bGluay9wYXRoPS9jb250ZW50L2RhYm91YmVZ2xvYmFsL2Fib3V0X3Vicy9mb2xsb3ctdWJzL3dl)
- Yew, E.H.J. & Gohb, K. (2016). Problem-Based Learning: An Overview of its Process and Impact on Learning. Health Professions Educations, 2(2), 75-79

## The Use of Mobile Application: Why Play is Important in Teaching Elementary Mathematics?

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### ABSTRACT

The used of mobile applications or apps by the actual digital users as an everyday object are becoming the new frontier of software development and this could be adopted in educational environment in order to improve teaching and learning. The uses of technology in teaching children has recommended in connection with the development level of the children who are generally believed to have low memory capacity, less attention and always want play. Hence, this article was aimed at reviewing relevant literature on the use of mobile application and the need for the integration of game activities in the mobile application especially for teaching mathematics at elementary schools. This paper elaborates on the systematic literature review process done on the 28 selected journal articles and papers on mobile application topic. The analysis reveals that, while different mobile application are developed in various field, most of them share similar themes in enhancing students' performance. However, there is no enough application integrating game activities to help students learn with fun especially in mathematics at elementary level. These findings act as a heuristic device to propose a development of a fund driven mobile application for teaching mathematics at elementary level. It is hoped that that by integrating games activities, sound, images and pictures in developing mobile application for teaching mathematics at elementary level pupil's attention could be attracted and mathematics teaching and learning would become funny and easily understand by the students. This is in order to satisfy the curiosity nature of children to play as playing have been considered important part of students learning. The study further suggested by combining multimedia learning theory, game-based learning theory and cognitive development theory of learning can serve as a theoretical bases for the proposed application. Moreover, while integrating play as an element of fun in mobile learning careful consideration should be given to the types of sound, pictures and or images used as well as the cultural and psychological issues to the child and the environment.

**KEYWORDS:** Elementary mathematics, mobile application, Game based Learn

### 1.0 INTRODUCTION

The increasing relevance of science, technology, engineering, and mathematics (STEM) education in recent years could be perceived as the reason for the challenge to have an alternative innovation and change in mathematics instruction especially in elementary classrooms (Moore et al., 2014). This is because a good understanding of mathematics at elementary can offer both thinking and computational skills that can be of great significance in the understanding of other subject at higher level (Aunio, Tapola, Mononen, & Niemivirta, 2016). Moreover, mathematics has been recognized as the foundation of science, technology and intellectual development and is also an index of civilization evolution (Chang & Yang, 2016).

However, prior studies (see Al Qarni, Banaja, & Bakodah, 2015; Alshmrany & Wilkinson, 2017; Alyami, 2014) have shown that the mathematics performance of students at elementary level is consistently poor and discouraging. Recent study by (Pimm, 2018) attributed to the abstract nature of the subjects that made it difficult to learn by the pupils. Similarly, Alsuwidan (2018) argued that the main reasons for the weak competence and low performance among the pupils in elementary schools in mathematics is that, mathematics is introduced, represented and illustrated to the pupils in elementary school with traditional methods which make the pupils less sensitive and less attentive. Furthermore, the traditional mathematics instruction has been based on certain procedures, doing exactly what mathematic teachers want pupils to do for example, memorizing logarithms as well as finding the correct answers (Yelland, 2015).

It is in view of the above, Ministries of Education in developing countries across the world started to encourage the integration of information and technology in education through design and developing mobile-learning applications to provide interactive learning experiences for the elementary school pupils, so as to make some critical subjects like mathematics, basic science and technology and foreign languages more acceptable and understandable for the pupils (Al-Fahad, 2009).

Educational mobile applications are regarded as the new model of E-learning (Squire & Dikkers, 2012). The mobile-learning applications are also viewed as fulfilling particular psychological devices for the students especially the elementary school pupils (Chan & Kong, 2011). Mobile-learning applications



are also found as assisting potential for the elementary pupils as well as a way of motivating and simulating pupils to understand and more than that, they embody experiences and solve problem skills especially mathematics and languages acquisitions (Alharbi & Drew, 2014). The used of mobile application have attracted the attentions of researchers around the world as they are perceived as integrated devices within the learning and teaching methods and processes (Jusoh, Salam, & Sayuti, 2012).

There are many mobile applications developed for educational purpose in various subjects. For example, Chemistry (Talib, Nawawi, Ali, Mahmud, & Shariman, 2014) Language (Godwin-Jones, 2011) and Mathematics (Zaranis, Kalogiannakis, & Papadakis, 2013). The importance of the mobile-learning potentials is mentioned by various pupils, experts and teachers who evaluated practically and useable of the mobile-learning applications within the educational process in the higher level (Koole, Buck, Anderson, & Laj, 2018). However, must of the mobile applications developed especially in mathematics are for students at secondary school and tertiary level (Alsuwidan, 2018). Hence, only few mobile applications were found in the literature developed for teaching mathematics in the elementary level. This may be in connection to the development level of the children who are generally believed to have low memory capacity, less attention and always want play.

Cagiltay, (2007) reported that, the use of games in teaching attract the pupil's attention in the learning of mathematics. He added that digital game-based learning can provide students with a more interesting environment to learn. This shows that games are really loved by the young children and also make learning more interesting. Researchers (Alfadhli & Alsumait, 2016) have demonstrated that games have the potential for creating learning environments toward the improved attainment of educational and training goals. Suitable, clear and easy-to-follow mobile application when designed and developed, especially for the creation of fun-learning for children, could increase the expected benefits of game-based learning (GBL). Hence, there is a daring need to integrate related models before developing a mobile application for teaching pupils in the elementary level. This shows that mobile application developed for teaching at elementary level should comprises of game activities, wards, sound and pictures and student's Cognitive development level.

Mathematics as a system of complex relationships, requires connection between thinking and reasoning (mathematical thinking), to obtain a more complete understanding of its concepts at elementary level (Mason, Burton, & Stacey, 2011; Morsanyi, Prado, & Richland, 2018).

### **1.1 Literature Review Method**

- i. The objective of this study is to identify the characteristics of a suitable mobile application for teaching elementary mathematics with fun. The identified features will then be recommended for designing and developing of a fun driven mobile application for teaching mathematics to elementary students. The research questions that guide this study are as follows: What are the suitable features to be incorporated into the fun driven mobile application for teaching mathematics in elementary classrooms?
- ii. What are the relevant game activities to be included in fun driven mobile application for teaching mathematics in elementary classroom?

The literature review (LR) method was used to analyse papers pertaining to suitable features and activities of mobile application for teaching mathematics in the elementary classroom. Four stages of LR method were adopted in the study. Namely, identification, screening, eligibility and inclusion (Nunes, Luz, Lemos, & Nunes, 2016). Four strings were used to search for relevant articles. These are, mobile application; game based learning, learning AND children play; mobile application for elementary mathematics. Many articles were obtained, screened and selected only the most relevant. The articles were obtained from open access journal and the database including Emerald, Sage, Taylor and Francis, and Web of Science. The word AND was used in the search string to add a wide range of findings and expand the search into a specific study of game-based mobile applications (Rosli, Capraro, & Capraro, 2014).

A total of, 28 papers were found to represent the mobile application and game activities. It was found that these papers were somehow interconnected by the strategies used, activities created and representation of framework. The succeeding sections of this paper summarize the literature discussed in these papers.

## 2.0 LITERATURE REVIEW

This literature review was based on issues linked to the curiosity of learners to play, their level of development, the role of senses in learning as well as the nature of the mathematics concepts and learning theories that can support the integration of game activities in design and development of an alternative mobile application for teaching mathematics at elementary level.

### 2.1 Edutainment Concept and Children Learning

Edutainment is a concept that combines education and entertainment (Wolf, 2000). Thus, an edutainment comprises of entertainment and educational aspects. This term can also be defined as a medium for teaching and learning with entertainment at the same time (Amira & Razani, 2010). This is achieved through computer application that integrate educational contents, sounds and images to ensure pleasure and fun as inherent aspects of games to improve learner's motivation to learning.

Game can be defined as an activity that have been characterized with Fun, Separation, Non-productive, Governed by rules and Fictitious (Bourgonjon, Valcke, Soetaert, & Schellens, 2009; Erenli, 2012). An educational game is defined as a game being designed and used for teaching and learning (Moreno-Ger, Burgos, Martinez-Ortiz, Sierra, & Fernández-Manjón, 2008). Thus educational games is systems that involve interaction with a user interface to generate visual feedback on a computer or a video device to utilize fun, play, and competition (Shabanah, Chen, Wechsler, Carr, & Wegman, 2010). Educational games provide fun to the students through the following ways, when a player achieves a goal. when a player was unable to predict; in other words, fun is the intellectual or aesthetic feeling which occurs at the time of an unpredictable happening; elation when a player faces a challenging problem or when a player considers whether he can solve a difficult problem and when a player is honored (Takaoka, Shimokawa, & Okamoto, 2011).

(Al-Azawi, Al-Faliti, & Al-Blushi, 2016) reported that using game-based learning is better than traditional lecture instruction, producing better learning effects and higher learning motivation. Moreover, games being more attractive, brings better students attention to learning compared to traditional instruction, (Chen, Jian, Lin, Yang, & Chang, 2014). Traditional teaching methods were no longer beneficial to the students because the methods does not give students opportunity to be able to think out of the box and to do some kind of practical assessment under the traditional mechanisms (Jayasinghe & Dharmaratne, 2013). In traditional teaching mechanism, the students focus only on the examinations rather than trying to understand the underlying concepts of the subject matters. So, there arises a need to let the students learn in their own ways, rather than focusing on the examinations without understanding the subject matters. In order to give opportunities to the students to learn by experience, there is the need to develop virtual learning environments that will entertain students to learn with fun especially the teaching and learning of mathematics at elementary level.

### 2.2 Why Play is Important in Children Learning?

Although play is important for people of all ages. It is especially meaningful and important for young children. Children considered play as their work and they give a tremendous amount of energy and effort to it. Elkind (2008) identified three main important of play for young children viz skill development, social development, and imagination and creativity. This showed that learning occurs in all areas of development as young children play and learn. Bergen (2002) reported that skill development can be observe in young children when they play with their toys. Similarly, MacDonald, Sacramone, Mansfield, Wiltz, and Ahearn, (2009) opined that, as very young infants, when children reach for and do something with a rattle, they learn to coordinate movements of their hands with what their eyes see. Moreover, Ames, (1989) wrote in his book that 'The mind of man is hand-made.' This statement recognizes the tremendous importance to a young child of having exciting objects to hold and listen to and feel and manipulate. And, as young children struggle to create a desired effect with a toy, they discover that it isn't always easy. They understand that there may be an issue to solve and they must exercise to obtain and enhance the abilities needed to accomplish their objective.

Play is the crucible in which imagination and creativity can be cultivated and expressed. For example, the child who pretends to be a cowboy, a mother, a fairy, a fire fighter is demonstrating some knowledge of these roles and is working through his or her own ideas about all that they entail. And the child who 'spanks' a doll while saying, 'I don't want you to do that again,' is releasing some of his or her

own aggressive impulses via this make-believe route instead of trying to mount a direct attack on another person. Play provides just such an outlet for young children.

### **2.3 Integration of Mobile Learning for Teaching Elementary Mathematics**

Mathematics subject is not interesting for children, it is perceived as difficult topic that cannot be learned in a relaxed situation. Children hardly understand mathematics, and they assume that mathematics is very difficult to learn (Roessler & Allison, 2018). Mathematics learning at elementary school is poor, formally, and theoretically, and very book-based learning (Reigeluth, 2003). Consequently, while many complained that mathematics is boring or complicated, the truth is that a life devoid of mathematics means that we go around experiencing the world on a much less interesting level than we could. Because mathematics is a difficult subject for many children to grasp, keeping the fun alive may just be a way to assist students in their quest for knowledge, and learn while they are playing. These tips for fun mathematics can be used effectively throughout elementary school and even into junior high school. However, a greater understanding of the implications of a mathematics instruction would be paramount in the successful teaching of mathematics in the elementary school. Hence, the need for a better understanding of the pedagogical knowledge of teaching mathematics for it better understanding at higher levels.

Rapid development in Information Communication Technology (ICT) has changed lifestyle today, including the learning method. There are several learning methods that apply ICT such as computer-based learning, e-learning, mobile learning and distance learning. These methods involve computer software to develop alternative methods of learning curriculum (Hutchison, Beschoner, & Schmidt-Crawford, 2012). Mobile learning is defined as the intersection of mobile computing, which involves the utilisation of portable and wireless computing and communication devices that gives students the chance to personalise their learning wherever and whenever (Clark, 1994 & Attewell, 2005). Similarly, Fernandes & Ferreira (2012) reported that the use of information technology made many changes in the way of teaching and learning. Thus, mobile technologies offer the opportunity to embed learning in a natural environment. In this context it is wise to consider the integration of game activities, digital media and mobile devices (tablets, smartphones), to students to set personal goals, to manage educational content and to communicate with others in the right context.

### **2.3 Theories**

There are many different theories that can be integrated for designing mobile instruction in educational settings; for example, Multimedia Learning, Game-based learning and cognitive development theories.

#### **2.3.1 Multimedia Learning Theory**

This theory is based on the combination of cognitive load theory and constructivist learning theory (Mayer & Moreno, 2002). The cognitive theory of multimedia learning explains how people learn from both words and pictures based on dual coding theory that is represented by the visual model and verbal model (Mayer, 2010). However, according to cognitive load theory, the capacities in the human brain to receive information from the different mental channels are restricted to a certain degree (Clark & Mayer, 2008; Sweller, 1988). Accordingly, cognitive theory of multimedia learning proposed that meaningful learning is achieved when students are able to select relevant information verbally or visually and start to rearrange the information in their working memories (Mayer & Moreno, 2002; Watson & Brathwaite, 2013). The combination of images and text should add value to the multimedia presentation and help the students to simplify the complicated topics. Thus, such combination subsequently helps the students to integrate their new information with their prior knowledge. In the end, a new state of knowledge is formed that will give a new meaning to the situation presented. The positive connections between verbal and visual representation can lead learners to retain the information in their long-term memory longer.

Words presented in the multimedia presentation can be in either on-screen text form or narration form, whereas, images in the multimedia presentation can be in graphic form, diagrams, and animation. However, not all forms of multimedia messages are equally effective. Words and images work positively only when they are used appropriately. The factors of quality and relevance of text and visual play a huge role in the effective of the presentation. For example, good qualities and high-resolution images, charts and videos will give better impact than the low-resolution materials, and although the latter may cost less in production, losses are seen in the form of loss of interest among students. Therefore, any low-quality

module has a smaller chance of achieving the objectives. Apart from the poor quality of images, if the text or narration aids are generic in nature and fail to explain the subject specifically and clearly, it would not be appealing to the students. Hence, the key is to ensure that the multimedia messages are well-designed to promote meaningful learning. If the elements used are irrelevant, they can cause distractions and increase cognitive load among students.

### **2.3.2 Game based Learning Theory**

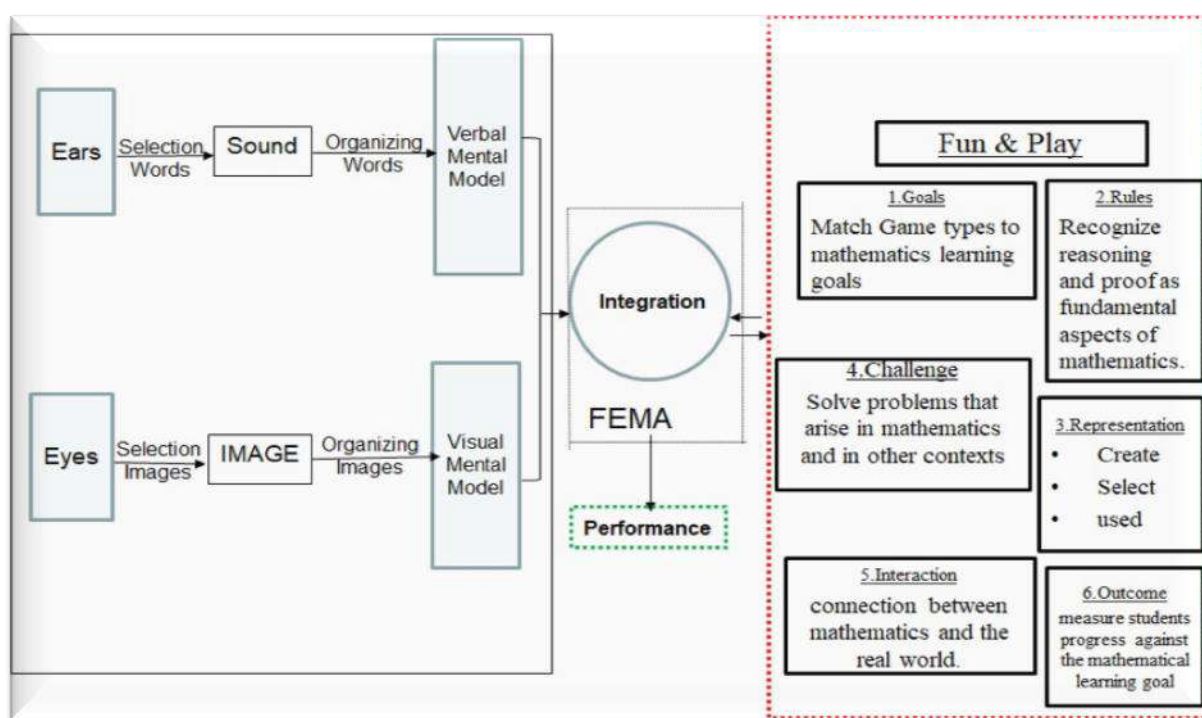
Game-based learning (GBL) broadly represents the utilization of computer games to support learning and teaching (Chen, Wang, & Chan, 2016). It is anchored on the notion that when children play, they learn (Ostrosky & Meadan, 2010). Precisely, GBL refers to a computer game environment in which learning and interactive entertainment are combined to create students' learning fun and learning achievement based on learning theories (Prensky, 2007). In recent years, many studies have focused on GBL because games could make students become immersed in the game situations characterized by challenge and fun, thus improving the students' motivation and helping them acquire subject knowledge. For example, (Hwang, Chiu, & Chen, 2015) designed a game-based learning context with "Saving Island" and "Investment Island" to help sixth graders learn financial concepts in a social studies course. (Chu, Yang, & Chen, 2015) developed an educational computer game for the unit of "Siege of Fort Zeelandia by Zheng Cheng-Gong" in an elementary school history course. They found that the approach improved the students' learning achievement. (Wang & Chen, 2010) indicated that challengeable game tasks would bring high flow experience and high interest for learners participating in the games so that their learning achievement could be enhanced. (Chang, Wu, Weng, & Sung, 2012) also reported that GBL could promote learners' high learning motivation, more flow experience, and better learning outcomes in comparison with conventional approaches. (Barzilai & Blau, 2014) indicated that learning and enjoyment would lead learners to complete tasks successfully; moreover, both learning and gaming experience show high interaction and correlation in GBL.

Generally, learners can gain enjoyment, self-confidence, and satisfaction from educational games if they are given challenging tasks that are equal to their skills and knowledge in GBL. Learning attitude and learning achievement can be improved when learners' flow experience occurs in GBL. However, several studies have reported that although students' learning motivation could be raised in GBL, no significant improvement was found in their learning achievement without incorporating proper learning strategies into the gaming process (Charsky & Ressler, 2011; Hwang & Chang, 2016). Thus, many studies have emphasized that it is important to embed teaching strategies or learning theories into GBL (Charsky & Ressler, 2011; Hsiao, Chang, Lin, & Hu, 2014; Hwang, Yang, & Wang, 2013). (Wang, Huang, & Hwang, 2016) investigated students' performance of learning English vocabulary with different guiding strategies in a game to serve as guidance for learners. The experimental results showed that the students using the game with the cloze guiding strategy had significantly better learning achievement than those learning with the multiple-choice guiding strategy.

### **2.3.3 Theorizing Fun-driven Mobile Application for Elementary Mathematics**

Based on the conceptual understanding of the theories underpinning mobile application and game activities for teaching elementary mathematics, integrating the cognitive theory of multimedia learning by Mayer and Moreno (2002), game-based learning (GBL) and mathematical thinking to enhance students' performance in perceived learning value, usability, and engagement. Upon exposure to the multimedia presentation, students will start to develop their own visual and verbal, mental model with a set of information stored in their working memory. The working memory, combined with the new set of information using the 5 processes of mathematical thinking motivated by the game factors, which are play and rules. Knowing that Play relates to players' involvement during game play that includes interaction and obstacles. While rules refer to game levels: Game levels usually indicate difficulty stages that player has to overcome in order to achieve the game goals (Sin et al., 2013). The integration is presented by arrow drawing from the game factors to the 5 process of mathematical thinking box to the circle. Prior knowledge from their long term memory of the students will integrate with the Game factors using the five process of mathematical thinking to encourage the conceptual change among learners. The connection between mental model of learners and game factors using five mathematical thinking processes with the perceived value is presented by the arrow from the integrating circle to the students' performance box which shows the development of a new set of knowledge in the mental model of students. In this study, students'

performance categorised into three parts, which are perceived learning value, usability, and engagement (Kay & Kwak, 2018). The enhancement in students 'performance through this proposed conceptual framework can have huge consequences in the mathematics curriculum, especially in how mathematics curriculum can be executed in a more explicit way in the future. This is summarised in Figure 2.0



**Figure 2.0:** Conceptual Framework for Fun-driven Mobile Application for Teaching Elementary Mathematics

### 3.0 CONCLUSION

In summary, the study found that mobile application has the potential in improving students learning of mathematics at all educational level. Although there are few mobile applications for teaching mathematics at the elementary level, literature has shown that young children are attracted to games based on the type and content of games that are relevant to them. The research also discovered that the games challenge, control and update components have the ability to support the motivation of learners when playing games.

This small-scale study is a preliminary study conducted to understand students' perspectives and feelings towards games that they favoured most. It is realized that many limitations including validity and reliability issues were not taken into consideration.

### 4.0 RECOMMENDATION

It was recommended that, by integrating games activities, sound, images and pictures in developing mobile application for teaching mathematics at elementary level pupil's attention could be attracted and mathematics teaching and learning would become funny and easily understood by the pupils. Similarly, mobile application must be made funny to satisfy the curiosity nature of children to play as playing has been considered an important part of students learning. Moreover, while integrating play as an element of fun in mobile learning careful consideration should be given to the types of sound, pictures and or images used as well as the cultural and psychological issues to the child and the environment.

## REFERENCES

- Al-Azawi, R., Al-Faliti, F., & Al-Blushi, M. (2016). Educational gamification vs. game based learning: Comparative study. *International Journal of Innovation, Management and Technology*, 7(4), 132–136.
- Al-Fahad, F. N. (2009). Students' attitudes and perceptions towards the effectiveness of mobile learning in King Saud University, Saudi Arabia. *Online Submission*, 8(2).
- Alharbi, S., & Drew, S. (2014). Using the technology acceptance model in understanding academics' behavioural intention to use learning management systems. *International Journal of Advanced Computer Science and Applications*, 5(1), 143–155.
- Alsuwidan, S. I. (2018). The Teacher Perspective on Integrating Technology into Their Early Childhood Classrooms in Saudi Arabia. *ProQuest LLC*.
- Alfadhli, S., & Alsumait, A. (2016). Game-based learning guidelines: Designing for learning and fun. *Proceedings - 2015 International Conference on Computational Science and Computational Intelligence, CSCI 2015*. <https://doi.org/10.1109/CSCI.2015.37>.
- Amira, W. N., & Razani, W. M. (2010). *The Development of an Educational Writing Game Application for Preschool Children Based on User Centered Design (UCD) Methodology*. Universiti Utara Malaysia.
- Ames, L. B. (1989). Arnold Gesell: Themes of his work. Human Sciences Press.
- Attewell, J. (2005). Mobile technologies and learning. *London: Learning and Skills Development Agency*, 2(4), 44–75.
- Aunio, P., Tapola, A., Mononen, R., & Niemivirta, M. (2016). Early mathematics skill development, low performance, and parental support in the finnish context. In *Early Childhood Mathematics Skill Development in the Home Environment* (pp. 51-70). Springer, Cham.
- Aunola, K., Leskinen, E., Lerkkanen, M.-K., & Nurmi, J.-E. (2004). Developmental dynamics of math performance from preschool to grade 2. *Journal of Educational Psychology*, 96(4), 699.
- Barzilai, S., & Blau, I. (2014). Scaffolding game-based learning: Impact on learning achievements, perceived learning, and game experiences. *Computers & Education*, 70, 65–79.
- Bergen, D. (2002). The role of pretend play in children's cognitive development. *Early Childhood Research & Practice*, 4(1), n1.
- Bourgonjon, J., Valcke, M., Soetaert, R., & Schellens, T. (2009). Exploring the acceptance of video games in the classroom by secondary school students. *17th International Conference on Computers in Education*, 651–658.
- Cagiltay, N. E. (2007). Teaching software engineering by means of computer-game development: Challenges and opportunities. *British Journal of Educational Technology*, 38(3), 405–415.
- CHAN, K. K. W., & KONG, S. C. (2011). *Process Writing: an online collaborative writing environment for primary school students*.
- Chang, K.-E., Wu, L.-J., Weng, S.-E., & Sung, Y.-T. (2012). Embedding game-based problem-solving phase into problem-posing system for mathematics learning. *Computers & Education*, 58(2), 775–786.
- Chang, R. C., & Yang, C. Y. (2016, May). Developing a mobile app for game-based learning in middle school mathematics course. In *2016 International Conference on Applied System Innovation (ICASI)* (pp. 1-2). IEEE.
- Charsky, D., & Ressler, W. (2011). "Games are made for fun": Lessons on the effects of concept maps in the classroom use of computer games. *Computers & Education*, 56(3), 604–615.
- Chen, H. R., Jian, C. H., Lin, W. S., Yang, P. C., & Chang, H. Y. (2014). Design of digital game-based learning in elementary school mathematics. *2014 7th International Conference on Ubi-Media Computing and Workshops*, 322–325.
- Chen, X., Wang, X., & Chan, H. K. (2016). Channel coordination through subsidy contract design in the mobile phone industry. *International Journal of Production Economics*, 171, 97–104.
- Chu, H.-C., Yang, K.-H., & Chen, J.-H. (2015). A time sequence-oriented concept map approach to developing educational computer games for history courses. *Interactive Learning Environments*, 23(2), 212–229.
- Clark, R. E. (1994). Media will never influence learning. *Educational Technology Research and Development*, 42(2), 21–29.
- Clark, R. C., & Mayer, R. E. (2008). Learning by viewing versus learning by doing: Evidence-based guidelines for principled learning environments. *Performance Improvement*, 47(9), 5–13.

- Elkind, D. (2008). The Power of Play: Learning What Comes Naturally. *American Journal of Play*, 1(1), 1-6.
- Erenli, K. (2012). The impact of gamification: A recommendation of scenarios for education. *2012 15th International Conference on Interactive Collaborative Learning (ICL)*, 1-8.
- Fernandes, G. R., & Ferreira, C. A. (2012). Desenho de conteúdos e-learning: quais teorias de aprendizagem podemos encontrar? *RIED. Revista Iberoamericana de Educación a Distancia*, 15(1), 79-102.
- Godwin-Jones, R. (2011). Mobile apps for language learning. *Language Learning & Technology*, 15(2), 2-11.
- Hsiao, H.-S., Chang, C.-S., Lin, C.-Y., & Hu, P.-M. (2014). Development of children's creativity and manual skills within digital game-based learning environment. *Journal of Computer Assisted Learning*, 30(4), 377-395.
- Huitt, W., & Hummel, J. (2003). Piaget's theory of cognitive development. *Educational Psychology Interactive*, 3(2), 1-5.
- Hutchison, A., Beschoner, B., & Schmidt-Crawford, D. (2012). Exploring the use of the iPad for literacy learning. *The Reading Teacher*, 66(1), 15-23.
- Hwang, G.-J., & Chang, S.-C. (2016). Effects of a peer competition-based mobile learning approach on students' affective domain exhibition in social studies courses. *British Journal of Educational Technology*, 47(6), 1217-1231.
- Hwang, G.-J., Chiu, L.-Y., & Chen, C.-H. (2015). A contextual game-based learning approach to improving students' inquiry-based learning performance in social studies courses. *Computers & Education*, 81, 13-25.
- Hwang, G.-J., Yang, L.-H., & Wang, S.-Y. (2013). A concept map-embedded educational computer game for improving students' learning performance in natural science courses. *Computers & Education*, 69, 121-130.
- Jayasinghe, U., & Dharmaratne, A. (2013). Game based learning vs. gamification from the higher education students' perspective. *Proceedings of 2013 IEEE International Conference on Teaching, Assessment and Learning for Engineering (TALE)*, 683-688.
- Jusoh, N., Salam, R. A., & Sayuti, M. N. S. M. (2012). Color Image Enhancement using Contrast Stretching on a Mobile Device. *Faculty of Science and Technology, Universiti Sains Islam Malaysia, Negeri Sembilan*, 1(3).
- Moore, T. J., Smith, K. A. J. J. o. S. E. I., & Research. (2014). Advancing the State of the Art of STEM Integration. *15(1)*, 5.
- Moreno-Ger, P., Burgos, D., Martínez-Ortiz, I., Sierra, J. L., & Fernández-Manjón, B. (2008). Educational game design for online education. *Computers in Human Behavior*, 24(6), 2530-2540.
- Koole, M., Buck, R., Anderson, K., & Laj, D. (2018). A comparison of the uptake of two research models in mobile learning: The FRAME model and the 3-Level Evaluation Framework. *Education Sciences*, 8(3), 114.
- MacDonald, R., Sacramone, S., Mansfield, R., Wiltz, K., & Ahearn, W. H. (2009). Using video modeling to teach reciprocal pretend play to children with autism. *Journal of Applied Behavior Analysis*, 42(1), 43-55.
- Mahmoud, Q. H., & Dyer, A. (2008). Mobile devices in an introductory programming course. *Computer*, 41(6), 107-108.
- Mason, J., Burton, L., & Stacey, K. (2011). *Thinking mathematically*. Pearson Higher Ed.
- Mayer, R. E. (2010). Applying the science of learning to medical education. *Medical Education*, 44(6), 543-549.
- Mayer, R. E., & Moreno, R. (2002). Aids to computer-based multimedia learning. *Learning and Instruction*, 12(1), 107-119.
- Morsanyi, K., Prado, J., & Richland, L. E. (2018). The role of reasoning in mathematical thinking. *Thinking & Reasoning*, 24(2), 129-137.
- Ostrosky, M. M., & Meadan, H. (2010). Helping children play and learn together. *YC Young Children*, 65(1), 104.
- Piaget, J. (1936). La naissance de l'intelligence chez l'enfant. Delachaux.[JCG]. Neuchatel, Switzerland Delachaux et Niestle.
- Pimm, D. (2018). On number language: A commentary on Chapter 3. In *Building the Foundation: Whole Numbers in the Primary Grades* (pp. 71-87). Springer, Cham.



- Prensky, M. (2007). Changing paradigms. *Educational Technology*, 47(4), 1–3.
- Reigeluth, C. M. (2003). Knowledge building for use of the internet in education. *Instructional Science*, 31(4–5), 341–346.
- Roessler, S., & Allison, M. (2018). A Gender-Aware Gamified Scaffolding of Mathematics for the Middle School Level. *Proceedings of the 2018 International Conference on Big Data and Education*, 121–126.
- Shabanah, S. S., Chen, J. X., Wechsler, H., Carr, D., & Wegman, E. (2010). Designing computer games to teach algorithms. *2010 Seventh International Conference on Information Technology: New Generations*, 1119–1126.
- Squire, K., & Dikkers, S. (2012). Amplifications of learning: Use of mobile media devices among youth. *Convergence*, 18(4), 445–464.
- Sung, H. Y., Hwang, G. J., & Chang, Y. C. (2016). Development of a mobile learning system based on a collaborative problem-posing strategy. *Interactive Learning Environments*, 24(3), 456–471.
- Sutopo, H., & Pamungkas, W. (2017). Developing Mathematics Mobile Game to Enhance Learning for Children. *22017 IEEE International Conference on Computational Science and Engineering (CSE) and IEEE International Conference on Embedded and Ubiquitous Computing (EUC)*, 191–197.
- Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive Science*, 12(2), 257–285.
- Takaoka, R., Shimokawa, M., & Okamoto, T. (2011). A framework of educational control in game-based learning environment. *2011 IEEE 11th International Conference on Advanced Learning Technologies*, 32–36.
- Talib, O., Nawawi, M., Ali, W. Z. W., Mahmud, R., & Shariman, T. P. N. T. (2014). Implementing the SEA application for organic chemistry: Arrow-pushing versus electron-moving techniques. *2014 Information Technology Based Higher Education and Training (ITHET)*, 1–5.
- Wang, L.-C., & Chen, M.-P. (2010). The effects of game strategy and preference-matching on flow experience and programming performance in game-based learning. *Innovations in Education and Teaching International*, 47(1), 39–52.
- Watson, C., & Brathwaite, V. (2013). An Open and Interactive Multimedia e-Learning Module for Graphing Kinematics. *International Conference on E-Learning*, 409.
- Wolf, J. (2000). Sharing Songs with Children. *Young Children*, 55(2), 28–30.
- Yelland, N. (2015). Young children as multimodal learners in the information age. In *Young children and families in the information age* (pp. 151–163). Springer.
- Zaranis, N., Kalogiannakis, M., & Papadakis, S. (2013). Using Mobile Devices for Teaching Realistic Mathematics in Kindergarten Education. *Creative Education*.



## Types and Cognitive Levels of Questions Asked by Secondary Agricultural Science Teachers

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### ABSTRACT

*Higher level cognitive questions such as open-ended and rhetorical questions aid teachers in exploring students' ideas (Ewing, 2006). Asking a wider range of questions requires students to analyze, evaluate, and develop conceptual and procedural knowledge (Tofade et al., 2013). The purpose of this study was to identify the types and cognitive levels of questions used by first-time secondary agricultural science teachers in the Curriculum for Agricultural Science Education (CASE) program in Ohio. Participants in this study implemented inquiry-based instructional approaches in their classrooms and the researchers intended to describe the type and cognitive level of questions the teachers asked. Teachers' questions were categorized by type and cognitive level. Question types were categorized using the Teacher Question Type Frequency Form. Question types described in this study include open, closed, managerial, and rhetorical questions. The cognitive level of questions was categorized using Bloom's Taxonomy (Bloom et al., 1956), which includes the categories of knowledge, comprehension, application, analysis, synthesis, and evaluation. Closed-type questions were found to be the most common (37%) type of questions asked by participating teachers during implementation of inquiry-based instructional techniques. Meanwhile, nearly 59 percent of the questions asked by teachers were at the lowest cognitive level (knowledge level) of Bloom's Taxonomy. Secondary agricultural science teachers asked mostly closed-type questions during their implementation of inquiry-based instruction, while analysis-level questions were the least utilized category (9.33%). Overall, teachers asked a limited number of higher cognitive level questions during observed class sessions. Secondary agricultural science teachers are recommended to consider the cognition level of questions they develop for classroom discussion. Teachers should also consider student needs and prior knowledge when formulating questions and learning objectives. When teachers understand and apply the best strategies of questioning to their teaching, students will learn at higher levels of thought.*

**KEYWORDS:** Inquiry-based instructional approaches, type of questions, level of cognition of questions.

### 1.0 INTRODUCTION

*"All learning begins with questions" (Ewing & Whittington, 2006).*

Questioning is a critical component of teaching and learning strategy (Ingram & Elliott, 2016). Through questioning, students develop critical-thinking and communication skills by working through questions at different cognitive levels. Challenging, thought provoking questions stimulate cognition and aid teachers in exploring their students' ability to think and act creatively. Questions asked at higher levels of cognition, such as open-type questions, encourage deeper thinking (Ewing, 2006). However, teachers often prioritize questions that only require basic knowledge or information recall, limiting their students' opportunities to engage in higher-order thinking (Zivkovil, 2016). Effective questioning can increase students' opportunities to practice critical thinking, as well as their enthusiasm to participate, contribute, and collaborate in learning activities (Abdul Latir, 2018). Teaching approaches such as inquiry-based instruction develop students' four domains of learning through engaging activities and scaffolding. Questions asked at higher levels of cognition encourage students to think, value, apply physical skills, and nurture the capacity to act and commit. The purpose of this study was to identify the types and cognitive levels of questions used by first-time secondary agricultural science teachers in the Curriculum for Agricultural Science Education (CASE) program in Ohio. This study aimed at promoting and enhancing teachers' questioning in the classroom.

## 2.0 OVERVIEW OF LITERATURE

### 2.1 Type of Questions

Questions for class discussion are recommended to be more divergent, open to a variety of interpretations and conclusions, and less convergent, where students are only expected to contribute one particular correct answer (Bulent et al., 2016). Studies show that there are several types of questions commonly asked by educators. Blosser (2000) categorizes questions as managerial, rhetorical, closed, and open. Managerial questions aid teachers in operating the classroom. Rhetorical questions help teachers reinforce a point. Closed type questions limit students' range of responses while open type questions allow students to produce a broad spectrum of answers. Questioning behaviour can also be divided into training questioning (closed type) and innovative questioning (open type) (Xiaoya & Cairang, 2019).

Many researchers support effective questioning as it relates to effective teaching and learning (Bulent et al., 2016; Kristianti, Ramli, & Ariyanto, 2018; Xiaoya & Cairang, 2019). Use of meta-cognitive questioning improves students' reasoning and problem-solving skills (Gillies, Nichols, Burgh, and Haynes, 2012). Teachers can use questioning as an assessment technique, as well as a tool to draw students' attention and interest (Bulent et al., 2016). Kristianti, Ramli, and Ariyanto (2018) supported that effective questioning improves students' attention, curiosity, and argumentative skills. Xiaoya and Cairang (2019) stated that classroom questioning is an exchange process between students, teachers and learning materials. A considered approach to questioning promotes students' thinking development and leaning initiative.

### 2.2 Level of Cognition of Questions

Level of cognition of questions can be classified using Bloom's Taxonomy of the Cognitive Domain. Bloom's Taxonomy was developed in 1956 by Benjamin Bloom and his associates and is comprised of six levels of thinking behaviour. Levels of cognitive behaviour in Bloom's Taxonomy are knowledge, comprehension, application, analysis, synthesis, and evaluation. The activities shown in Table 1 illustrate typical thinking behaviours when students are asked questions at each of these cognitive levels. Each level requires a greater amount of mental activity to formulate an answer or demonstrate understanding. In this study, knowledge and comprehension levels are considered the lowest levels of cognition.

Table 1. Cognitive level and mental activities (Vogler, 2008)

Level	Mental activities
Knowledge	Students recall information
Comprehension	Student put Information in another form
Application	Student applied facts, principles, or generalizations to solve a problem
Analysis	Student identify and comprehend elements of process, communication, or series of events
Synthesis	Student engage in creative thinking
Evaluation	Student determine how concept or idea consistent with standards or values

*"Responding to sophisticated questioning requires the learner to move beyond knowledge-based responses toward higher level thinking, cognitively considering how to carefully articulate reasoned thoughts into higher level answers." (MacFarlane, 2018)*

Students are able to ask more and better questions when teachers implement inquiry-type experimentation (Hofstein, Navon, Kipnis, and Mamlok-Naaman, 2005). Teachers' questioning and classroom discourse have been studied to describe and improve classroom practices. Teachers' beliefs and practices have changed when they bring awareness to classroom questioning and how it impacts students' levels of thinking. For example, Albergaria-Almeida (2010) found that when teachers moved from a teacher-centered approach to a more student-centered teaching style, teachers and students each used appropriate wait-time, and asked various question types at various cognitive levels. Dohrn and Dohn (2018) found that teachers asked questions to understand students' knowledge level, to clarify learning objectives, to make relationships between concepts and to foster interaction across learning contexts. Effective questioning aids teachers and creates an interactive learning process for students. However, researchers

have found that teachers still primarily rely on closed-type questions in their classrooms. These types of questions simply require students to recall previously learned facts, and do not encourage the higher-level thinking associated with more advanced question types.

This study is intended to fill in the gap in the literature on the type and cognitive level of teachers' questions. Findings from this study contributed to teacher practice of inquiry-based instructional approaches limited to first-time CASE Ohio agricultural science teachers. The purpose of this study was to describe the type and cognitive level of questions asked by secondary agricultural science teachers during class sessions.

### 3.0 METHODOLOGY

Descriptive study was employed to identify types and cognitive levels of teachers' questions. The present study was conducted in Ohio focusing on agricultural science teachers who had participated in Curriculum for Agricultural Science Education (CASE) program for the first time. The participants were purposively selected among the middle school teachers who taught agricultural science subjects ( $N = 5$ ). All teachers were respected members of their teaching communities and showed a willingness to share and examine their practices. After the participating teachers completed the CASE program and implemented the CASE curriculum in their classroom, researchers made an audio recording of one of their class sessions. The audio recordings were then transcribed and analyzed to document student-teacher interactions. Data was analyzed based on 24 minutes of classroom session, therefore findings are not meant to be generalized outside of this population. The Teacher Question Type Frequency Form (Abdul Latir, 2018) based on the Professor Question Type Frequency Form (Ewing, 2006) was used to describe the type of teacher questions. Bloom's Taxonomy (Bloom et al., 1956) was used to measure the cognitive level of the questions.

The researchers then created and tested a framework to describe the types of questions asked and the cognitive levels at which first-time Ohio CASE agricultural science teachers were teaching during implementation of inquiry-based instructional approaches. The following research questions guided this study.

- 3.1 What types of questions did Ohio first-time CASE secondary agricultural science teachers ask during class sessions?
- 3.2 At what level of cognition were Ohio first-time CASE secondary agricultural science teachers questioning students during class sessions?

The procedures used in this study were approved by the Ohio State University Institutional Review Board (IRB), the research oversight committee responsible for ensuring human subject research is conducted in compliance with the applicable federal, state and institutional policies and procedures. This study was assigned the IRB study number, 2016E0649.

### 4.0 FINDINGS

#### 4.1 Type of Questions

Frequency of question types was analyzed using Blosser (2000) classification. Secondary agricultural science teachers in this study asked a total of 189 questions as shown in Table 2. Teachers asked mostly closed-type questions ( $n = 70$ ), while open-ended questions were the least frequent by a significant margin ( $n = 5$ ).

Table 2. Frequency of question types (Blosser, 2000)

Type of questions	Frequency
Managerial	60
Rhetorical	54
Closed	70
Open	5
Total	189

Open type questions encourage students to think and produce a wide range of acceptable responses (Blosser, 2000). Rhetorical and open type questions require students to use higher metal activity (Ewing & Whittington, 2009). – perhaps the researcher wants to describe and elaborate the frequency for table 2. Figure 1 illustrates that open type questions accounted for only 2.65% of total questions in the observed class sessions.

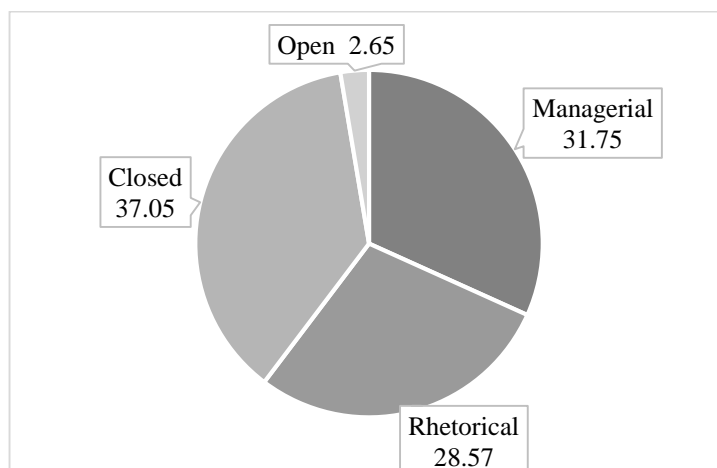


Figure 1: Percent of teacher questions by type

The participants for this study were secondary agricultural science teachers ( $N = 5$ ) in Ohio who participated in CASE professional development program for the first time. Is the sample of this study is five? If so, maybe the researcher should highlight this in the method part. These teachers were implementing inquiry-based instructional approaches via the curriculum provided by the CASE institute. Table 3 shows examples of questions asked by teachers based on the four question types.

Table 3. Examples of teacher questions by type

Question Type	Example Questions
Managerial	“Is everybody here?”
	“Who was in chemistry last year?”
Rhetorical	“What is lactation curve?”
	“So yesterday we talked about mastitis, right?”
Closed	“... so name five things that the mammary gland has to prevent mastitis.”
	“What is the breakdown of the protein called?”
Open	“Any runners in here? Have you ever heard to drink a glass of milk after you run?”

#### 4.2 Cognitive Level of Questions

In determining the level of cognition of secondary agricultural science teachers’ questions, managerial-type questions were not included. These questions were primarily asked for the purpose of classroom management, and therefore did not elicit student engagement with the class content. Several of the closed-type questions were also not evaluated due to this same rationale. Per Bloom’s Taxonomy, knowledge and comprehension are the lowest levels of cognition and application, while analysis, synthesis, and evaluation occur at higher cognitive levels (Bloom et al., 1956). Table 4 shows the number of questions at each cognitive level asked by the teachers in this study. Teacher 1 asked 31 total questions, while Teacher 2 and Teacher 4 each asked only 2 questions during the 24-minute class sessions. Nearly 59 percent of all questions were asked at the lowest level of cognition (knowledge level), while highest cognitive level of the questions assessed (9.33%) were asked at the analysis level.

Table 4. Levels of cognition of teachers' questions

Participant	Levels						Total
	K	C	Ap	An	S	E	
Teacher 1	14	9	4	4	0	0	31
Teacher 2	2	0	0	0	0	0	2
Teacher 3	14	2	2	1	0	0	19
Teacher 4	2	0	0	0	0	0	2
Teacher 5	12	4	3	2	0	0	21
Total	44	15	9	7	0	0	75
Percentage	58.67	20.00	12.00	9.33	0.00	0.00	

*K = Knowledge, C = Comprehension, Ap = Application, An = Analysis, S = Synthesis, E = Evaluation*

Classroom observations were analysed for the duration of 24 minutes to allow researchers to standardize the findings across five participants. Researchers transcribed and analysed data from the middle of each class session (approximately from minute 7 to minute 33) because this period of classroom activity generally encompasses active teaching and learning (Bonwell & Eison 1991). Table 5 provides examples of questions asked at each cognitive level by agricultural science teachers implementing CASE inquiry-based instructional approaches. None of the teachers asked questions at the synthesis and evaluation levels of cognition during the observed 24-minute sessions.

Table 5. Questions asked based on questions' level of cognition

Cognitive level	Questions
Knowledge	<p>"Have you ever had a stuffy nose and you can't taste?"</p> <p>".... name five things that the mammary gland has to prevent mastitis."</p> <p>"Do you remember the calcium components when we talked about the skeletal system?"</p>
Comprehension	<p>"We've talked about how to feed our livestock, right?"</p> <p>"In the dairy industry, our main reason to feed our dairy cows is to...?"</p> <p>"What are we testing for in the California Mastitis Test?"</p>
Application	<p>"Do you know where else you get Vitamin D?"</p> <p>"How do you diagnose mastitis?"</p>
Analysis	<p>"Do you know what the green cap is at the store?"</p> <p>"Why do you think, or how do you think flavors get into milk typically?"</p>

## 5.0 CONCLUSION

Questions are a vital part of classroom discourse that can produce various outcomes depending on question type and cognitive level. Researchers intended to outline a framework to describe first time Ohio CASE teacher question types and the cognitive levels of teachers' questions.

### 5.1 Type of questions

Teachers' classroom behaviours guide student learning, and teachers' use of questioning can have a direct influence on students' interaction with course materials. This study showed that agricultural science teachers underutilize open ended questions when implementing inquiry-based instructional approaches. Therefore, teachers can improve their ability to ask questions at different cognitive levels by familiarizing themselves with classifications and taxonomies of questioning (Blosser, 2000). Tofade, Elsner, and Haines (2013) supported that questioning is a powerful teaching technique, and by understanding the clarity, sequencing, and delivery of questions, teachers can improve the quality of their instruction. In addition, Hofstein et al., (2005) suggested the need for continuous and long-term professional development to improve teachers' content knowledge and pedagogical content knowledge. Specifically, teacher participation in in-service teacher professional development training is considered important to prepare teachers to be able to develop effective questions (Bulent et al., 2016).

## 5.2 Level of cognition of questions

Agricultural science teachers should phrase suitably challenging questions, modelling the development of increasingly complex thinking to direct the quality of student responses. Using effective questioning, teachers can navigate students from the lowest levels of cognition (recall and recognition of facts) through the highest levels of cognition where complex ideas are evaluated and synthesized. Awareness and knowledge of questioning techniques should be included in teacher preparation curricula, as well as in-service training to improve teaching practices (Albergaria-Almeida, 2010). Smart and Marshall (2013) stated that the complexity of questions asked impacts students' levels of cognitive engagement. Asking higher order cognition questions is important for elevating students' levels of intellectual behaviour.

Joglar and Rojas (2019) proposed teachers to reflect and validate ideas in their teaching practices to overcome the obstacles related to their questioning approach. Structuring classroom discourse by providing a conducive environment, discussing familiar context, and encouraging small group collaboration all increase the frequency and quality of student questioning. Students stay involved in the learning process when teachers ask questions to evaluate their conceptual understanding (Zee, E. H., Iwasyk, M., Kurose, A., Simpson, D., & Wild, J., 2001).

## REFERENCES

- Abdul Latir, S. (2018). *Teachers' perceptions and a researcher's observations toward implementing inquiry-based instructional approaches*. (Electronic Thesis or Dissertation). Retrieved from <https://etd.ohiolink.edu/>
- Albergaria-Almeida, P. (2010). Classroom questioning: Teachers' perceptions and practices. *Procedia - Social and Behavioral Sciences*, 2(2), 305–309. <https://doi-org.proxy.lib.ohio-state.edu/10.1016/j.sbspro.2010.03.015>
- Bulent, D., Erdal, B., Ceyda, A., Betul, T., Nurgul, C., & Cevahir, D. (2016). An analysis of teachers questioning strategies. *Educational Research and Reviews*, 11(22), 2065-2078. doi:10.5897/ERR2016.3014
- Blosser, P.E. 2000. *How to ask the right questions*. Arlington, VA: National Science Teachers Association
- Dohrn, S. W., & Dohn, N. B. (2018). The role of teacher questions in the chemistry classroom. *Chemistry Education Research and Practice*, 19(1), 352-363. <https://doi.org/10.1039/C7RP00196G>
- Ewing, J. C. (2006). *Teaching techniques, and cognitive level of discourse, questions, and course objectives, and their relationship to student cognition in College of Agriculture class sessions* (Doctoral dissertation). Retrieved from [http://rave.ohiolink.edu/etdc/view?acc\\_num=osu1154989421](http://rave.ohiolink.edu/etdc/view?acc_num=osu1154989421)
- Ewing, J., & Whittington, M. (2009). Describing the cognitive level of professor discourse and student cognition in college of agriculture class sessions. *Journal of Agricultural Education*, 50(4), 36-49.
- Gillies, R. M., Nichols, K., Burgh, G., & Haynes, M. (2012). The effects of two strategic and meta-cognitive questioning approaches on children's explanatory behavior, problem-solving, and learning during cooperative, inquiry-based science. *International Journal of Educational Research*, 53, 93-106.
- Hofstein, A., Navon, O., Kipnis, M., & Mamlok-Naaman, R. (2005). Developing students' ability to ask more and better questions resulting from inquiry-type chemistry laboratories. *Journal of Research in Science Teaching*, 42, 7, 791-806.
- Ingram, J., & Elliott, V. (2016). A critical analysis of the role of wait time in classroom interactions and the effects on student and teacher interactional behaviours. *Cambridge Journal of Education*, 46(1), 37-53. doi:10.1080/0305764X.2015.1009365
- Joglar, C. & Rojas, S.P. (2019). Overcoming obstacles to the formulation and use of questions in the science classroom: Analysis from a teacher reflection workshop. *Research in Science Education*, 49, 1125-1139. <https://doi-org.proxy.lib.ohio-state.edu/10.1007/s11165-019-9857-5>
- Kristianti, T., Ramli, M. & Ariyanto, J. (2018). Improving the argumentative skills of high school students through teacher's questioning techniques and argumentative assessment. *Journal of Physics: Conference Series*, 1013(1). doi:10.1088/1742-6596/1013/1/012012

- MacFarlane, B. (2018). High level questioning and cognition in advanced curriculum. *Teaching for High Potential*. Retrieved from [www.nagc.org](http://www.nagc.org)
- Smart, J., & Marshall, J. (2013). Interactions between classroom discourse, teacher questioning, and student cognitive engagement in middle school science. *Journal of Science Teacher Education*, 24, 2, 249-267.
- Tofade, T., Elsner, J., & Haines, S. T. (2013). Best practice strategies for effective use of questions as a teaching tool. *American Journal of Pharmaceutical Education*, 77, 7, 155.
- Xiaoya, W. & Cairang, X. (2019). Analysis of classroom teaching behavior of junior middle school mathematics teachers in Tibetan areas. *Advances in Social Science, Education, and Humanities Research*, 332, 56-60.
- Vogler, K. E. (2008). Asking good questions. *Thinking Skills Now*, 65.
- Zee, E. H., Iwasyk, M., Kurose, A., Simpson, D., & Wild, J. (2001). Student and teacher questioning during conversations about science. *Journal of Research in Science Teaching*, 38 (2), 159-90.
- Zivkovil, S. (2016). A model of critical thinking as an important attribute for success in the 21st century. *Procedia - Social and Behavioral Sciences*, 232, 102-108. doi:10.1016/j.sbspro.2016.10.034

# **ARTS AND HUMANITIES EDUCATION**



## The Learning Curve: Compassion and Passion of an Educator in the Film *Freedom Writers*

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### ABSTRACT

*Education is a life-long process. Individuals learn a thing or two at every point of their lives. Formal education is prioritized in almost every country in the world as it helps mould the learner's thinking abilities as well as develop the learners' personality. Oftentimes what is forgotten are the unsung heroes who make the difference in shaping so many young minds who, under their care and supervision have gone on to shine on global platforms. There are many sections of society in most countries that are disadvantaged due to socio-economic reasons. In the United States of America, there are inner city neighbour hoods that are rife with violence and other unsavoury incidents. In the film *Freedom Writers* (2007), a screen adaptation of the book *The Freedom Writers Diary* (1999), the teacher faces numerous challenges in dealing with a group of multi-racial 'difficult' students in Woodrow Wilson High School. Those who attend the school, specifically students in her class, deal respectively with several issues of broken homes, aggressive behaviors as well as drug abuse. Despite the students' backgrounds, Erin Gruwell sees them as young learners who need compassion. Her teaching tasks soon become a labour of love as she begins to understand the learning needs of her rather disparate menagerie of students. This paper will explore how in the film, Gruwell employs a few motivational styles to encourage the students' learning, which are seen as i) intrinsic motivation for escaping present circumstances, ii) extrinsic motivation to stimulate creativity and the intellect, iii) learning on demand for personal progress and community growth, and iv) learning when interested for the sake of knowledge that has relevance and significance. The researchers found that textual analysis was the most relevant method to examine the various layers of the student-teacher relationship(s) in the film. The teachers adjust her learning curve to that of her students' life trajectories.*

**KEYWORDS:** Freedom writers, Motivational styles, Education

### 1.0 INTRODUCTION

The schooling systems in various countries vary but there is always one major reason for the existence of these learning institutions – to provide an education for the students. How and why the students learn is another matter altogether. What they learn is important to some and how they learn is a priority for many learners. Every school tries to employ teachers who are willing to give their time and energy to the school; yet, often there are teachers themselves who may lack the drive or the motivation to teach students of various abilities. By textually analysing the film *Freedom Writers*, the researchers found that a teacher can make all the difference if willing to give his or her all to educating the students. What does educating imply? A lot of learning is done because of motivation. The formula is simple. If one is a highly motivated educator despite the circumstances, the students will be motivated to learn.

*Freedom Writers* (LaGravenese, 2007) is based on the book entitled *The Freedom Writers Diary: How a Teacher and 150 Teens Used Writing to Change Themselves and the World Around Them* published in 1999. The book is a collection of journal entries by a group of racially diverse class of students in an English class taught by Erin Gruwell at Woodrow Wilson High School in Long beach, California. The film was inspired by a journalist's documentary on Erin Gruwell for a television program.

The film relates the challenges faced by the young idealistic, first time teacher Erin Gruwell when dealing with multi-racial students who hailed from pockets of poor neighbourhoods. These students were exposed to all forms of aggression as well as unsavoury dealings such as drugs and gang fights.

The compassion as well as the passion of Erin Gruwell helped her surmount the difficulties faced on a daily basis at the school, which apparently having previously been an A-list one had taken a dive due to

the introduction of the voluntary integration program. The voluntary integration schools in the United States of America enrol students from diverse ethnic and racial groups into mainstream education.

## 2.0 MOTIVATING THE UNMOTIVATED

The story of Erin Gruwell has impacted many from the teaching profession. In the film *Freedom Writers* she is seen as being unaware of what to expect at Woodrow Wilson High School, earlier a highly acclaimed institution. When speaking to the Head of Department of English, she is idealistic about how she would be teaching the students. She says that what was happening in the school was exciting because of the voluntary integration program adopted. She attributes her interest to her father having been in the civil rights' movement. The head of the department Margaret Campbell is amused by her enthusiasm especially when Gruwell says that she had a lot to learn as a teacher but she was a very good student and really wanted to be there.

Despite being told by Campbell that she would not don the pearl necklace to class, Gruwell dismisses the idea when she goes to her class the following day, wearing the necklace. This shows that Gruwell was willing to take a chance with the students. It is only when she meets them and a violent confrontation takes place between two students that she is truly confounded. However, she still harbours hope and goes into her class regularly.

One must understand that the students in her class comprise young people who are used to a violent way of life and have seen atrocities which have made them very cynical and disinterested in regular studies. As one of the students mentions in her journal, they kill each other over race, pride and respect and they fight for what is theirs. Also, any sort of provocation from one person can lead to fights among the various racial groups.

Given the above scenario, how is one expected to deal with the situation? Gruwell is shaken but she does not give up. When she meets Campbell in the resource room and sees all the copies of *The Diary of Anne Frank* as well as *Romeo and Juliet* (which is a good gang story) being left there, she asks if she can use them for her class. She is refused the request. Campbell had earlier told her that Homer's *Odyssey* would be difficult for the students given their poor academic orientation. Gruwell does not understand why she cannot use the books that have been gathering dust on the shelves anyway. She is shown the condition of one of the books lent out to the students. It is torn and tattered. Campbell says that the students are better off reading elementary versions of stories as they do not have proper reading skills. Gruwell gets upset that the students are thought of and treated that way.

On trying to get help from another colleague, she feels sick to the stomach as he dismisses her suggestion by telling her off for trying to judge the other teachers. He tells her to stop her 'cheer-leading' as integration was just a lie. It is when she sees the various students interacting with one another in their own ethnic groups, that she thinks up creative ways to break through to them.

Because she has the passion to make the students learn, Gruwell decides to help and motivate them. In her next class she decides to play a game called the Line Game by putting a red tape across the middle of the classroom. She asks them various questions starting from seemingly innocuous ones such as songs that they have listened to and goes on to serious questions like how many of the have lost people to violent acts. She gets them to come close to the line if they answer yes. This way, she indirectly shows them that despite their diverse ethnic backgrounds they had so many similarities. She motivates the students to appreciate their similar experiences.

To get the disinterested and unmotivated to learn something, the teacher must create an environment of acceptance and appreciation. That way, the various students will be actively engaged in the learning process. When one of the students Eva tells her that she does not understand their pain and another student Marcus says that she was there just to babysit them, she does not take it to heart. It encourages her to understand them even more.

One of the major boosters of motivation was to get journal notebooks for her students to write their thoughts in. One journal entry per day in whichever form they wished. This is the reason this film's name is such.

Another motivating lesson was getting to meet the holocaust victims and to learn that different ethnicities need not be the cause of misunderstandings between people. A field trip visit to the Museum of Tolerance also helped open up the students' eyes, minds and hearts to the suffering faced by victims of the Holocaust.

At the end of the freshman year, the students request Gruwell to teach them for their sophomore year. Apparently she is not qualified to teach the sophomore year but because of the requests by the students, Gruwell takes the matter to the authorities to solve.

Towards the end of the film while the audience waited with bated breath, she comes and gives them the good news (after some suspense because of the look on her face) that she would be teaching them English in their sophomore year.

Various learning styles in different cultures give rise to a varied motivational strategies. The different technique analysed in the movie are as follows.

### **3.0 INNATE IMPACT**

To be motivated intrinsically, what is needed is a strong propellant to succeed. Even if seen as insignificant as just doing well in something shows that a person is innately moved (Samovar, Porter and McDaniel, 2007). In the movie *Freedom Writers*, one of the students, Ben Samuels, the only 'white' American in the class is motivated to sit in the front of the class so that he can absorb whatever is taught. It upsets him when he is asked to trade seats with a back-bencher. Perhaps being the only 'white' American is also a key driver of his motivational intention.

The one with the most drive in the movie is Erin Gruwell herself. If not intrinsically motivated, how would she achieve the 'impossible'? To be able to transform an entire bunch of youngsters with zero interest in learning is a major achievement. Another characteristic is that she tries and overcomes whatever hurdle is placed in her path. To be able to manage funds to get books for the students, Gruwell is willing to work at shift jobs.

The devotion to the cause of the 'lost' students even caused her marriage to fail. She could not let down the many young people who she was already impact in positive way.

### **4.0 STIMULATED STROKES**

Gruwell needed to use a reward system for her class of students as they were extrinsically motivated. Due to their socio-economic backgrounds, many of them lack the drive to do things for themselves. When the students are presented a book titled *Durango Street* by Frank Bonham it comes to mean a lot to them especially since they are made to feel like they matter.

The book touches a raw nerve for many and they are able to identify with the protagonist Rufus Henry who is just out of juvenile detention. He was placed there because of Grand auto theft. It goes on to relate his involvement in gang activities, the story ending with a ray of hope. This was a master stroke on Gruwell's part as the students are filled with awe at the prospect of owning his or her own book. They touch, feel and smell the gift just bestowed on them.

The students therefore, having no drive of their own can still be motivated due to the care and love shown by others. By reading the book, they will be making their teacher happy and that means a lot to them.

### **5.0 CURRICULAR CONTEXT**

It is only normal for students to follow the school curriculum as they are expected to do so. This learning on demand cannot be avoided as curriculum covers subject matters that necessitate the knowledge output for the various grades. Erin Gruwell starts to teach the freshman class Homer's *Odyssey* as a part of the accepted curriculum. Of course, in the course of the study term, certain topics are dropped and certain ones added. When Gruwell meets Campbell, she is asked to revise her lessons, especially vocabulary as that may not be up to the standard of the prevailing students.

In fact most of the students feel that going to school is a waste of time. They are indifferent when Gruwell is conducting a lesson; they barely pay attention and at the slightest provocation, the class breaks up. This kind of motivation is related directly to structured lessons to be learnt in school.

The fact that Gruwell introduces new texts and activities shows that to get the students to want to learn, the curriculum must be flexibly constructed. In the freshman English course, the students had to learn the skills require namely; reading, writing, listening and speaking.

Despite not being sure of the students' using the journal notebook, Gruwell still proposes the exercise to the students. One by one, they all begin contributing their thoughts in the journal. One of the students

even asks to read out what he has written. This is all in line with the curriculum's need to cover the English language skills.

## **6.0 PERSONAL PURSUIT**

This kind of motivation takes place when there is an interest in learning about something. It could be any topic one likes to know more about (Samovar, Porter and McDaniel, 2007). Gruwell's personal motivation was to share the history of the holocaust with the students. That happened also because during the incident when the sketch (meant to be derogatory) of an African with thick lips was passed around the class, Gruwell is angered into telling them that this is how the holocaust happened. Once the students know about the holocaust, they are interested in meeting victims of the holocaust as well as visit the museum.

The students are excited to arrange to meet Miep Gies, a Dutch citizen who had helped Anne Frank's family and they go all out to get her to fly to their school to tell them her story. The students wrote her letters and worked at raising funds through a 'Read-a-thon for Tolerance' and when Gies tells them that they are the real heroes by doing whatever good they can on a daily basis, their hearts are warmed.

Still on the topic of the holocaust, it interested the students to meet those who survived the Holocaust by listening to the various personal narratives over a meal. This motivated them to personally understand that there were many who faced worse conditions than them.

The diary entries were also motivated by personal interest. Each student needed to write what they felt about all that was happening in their lives. Eva in the film write to say she did not even know why gang wars started and was not interested in the history behind it. Sindy felt it was important for her to protect her family. Jamal spoke of the possibility of being shot every time he stepped out of his door and recounted that at the age of sixteen, he saw more corpses than one can imagine (<http://freedomwritersmediamyths>). To be able to personally write about what was important to them was an instant motivational act. This seemed cathartic for many of them.

## **7.0 CONCLUSION**

In conclusion, it can be noted that if one is in the teaching profession, it is important to consider the learning curve and the motivational techniques that help steer a learner forward. By watching an inspirational movie like the Freedom Writers, many educators can imbibe some of the ways in which Gruwell helped reach the students, even the most difficult ones.

In Malaysia, there may not be such severe disciplinary cases yet because of our students' multi-racial composition, there are many ways in which the learners can be taught to overcome or look past their differences and focus on their similarities. The school curriculum can also help integrate subject matter that will be of interest to the learners.

Motivation must begin with oneself before one can motivate someone else. In the education profession, many educators endure rigorous schedules and need to deal with all kinds of learners. Many do not realize the sacrifices they make by working after hours and ensuring that the learners get a good education. There are many inspiring stories out there that need to be told. Many apparently 'unteachable' children and teenagers will learn if they are given the right motivation. It is necessary to first be wanting to do something for learners and second to have the compassion to deal with those who are difficult to teach.

In the Freedom Writers, we get a look at how challenges are faced and how Gruwell does her best not to lose her confidence and courage to do the things that matter. To be able to get learners to want to learn is in itself no easy task. Often here in Malaysia we take things for granted. With the advent of new technologies and the rise of digital natives, many educators, especially the traditional 'chalk and talk' educators, namely the authors with their decades of teaching in both secondary and tertiary levels may and do find the challenges overwhelming. In the past two decades, it is true that many changes are constantly seen in the evaluation system as well as teaching methodologies but the researchers firmly believe that with passion and compassion, any educator can motivate learners to see the light.

## REFERENCES

- Cottrell, J. (ed.) (2000). *Educating for multiculturalism*. Suva: Citizens' constitutional forum.  
Freedom Writers. Retrieved 6 August 2019 from,  
<http://freedomwritersmediamyths.weebly.com/index.html>
- LaGravenese, R. (2007). *Freedom writers*. MTV films.
- Samovar, L. A., Porter, R. E. & McDaniel, E. R. (2007). *Communication between cultures* (6th ed.).  
California, CA: Thomson Wadsworth.

## Improving Student's Problem Solving Skills Through Flipped Classroom Assisted Animation Video Physics

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### ABSTRACT

*The study aimed to analyze the influence of flipped classroom learning models with animated videos of students' physics problem-solving skills. The subject was students at the first junior high school in Jakarta, academic year 2019/2020. The method used in this research is the quasi-experimental method with the research design of The Randomized Post-Test Only Control Group Design, which involved 202 students as samples. Sample determination used the random sampling cluster technique. The treatment instruments in this study were lesson plan, video animated physics, e-learning, and student's worksheet. The measuring instrument consists of a problem-solving ability test. The data analysis technique is Paired Sample T-test. Based on the results of research, the flipped classroom model based on video animation can improve the ability to solve physics problems. There was a significant difference in the mean scores between pretest and posttest, and an increase in the students' posttest score in solving physics problems. The students were more active and motivated in learning physics and lead to functional learning independence as well.*

**KEYWORDS:** flipped classroom, animated videos, physics learning, problem-solving skills.

## 1.0 INTRODUCTION

Natural Sciences (IPA) is a science that is learned the entire universe and its contents. However, IPA has limited knowledge of things that can only be understood by the senses (vision, hearing, tasting, touch, and feel). IPA or physics is a science that is acquired through learning and proving. (I. A. D. Astuti, Sulisworo, & Firdaus, 2019)(I. A. D. Astuti, Sulisworo, & Firdaus, 2019) (I. A. D. Astuti, Sulisworo, & Firdaus, 2019)Science learning is not only limited to learning facts, concepts, principles, laws, but also learn about obtaining information, application of technology, working scientifically, and thinking abilities (Astuti, Sulisworo, & Firdaus, 2019). The aims of learning science is to improve the competencies needed. Students to be able to fulfill their needs in various situations and to develop their thinking skills (Widodo, Darhim, & Ikhwannudin, 2018).

Physics is one of the branches of science that study objects in nature physically and written mathematically. Humans can understand it and utilized for humans. Based on this, physical learning is not separated from the mastery of the concept, applying it to the solving of physics problems, and working scientifically. However, the learning of physics in today's classes tends to emphasize the concept of mastery and override the skills of student physics. But, the ability of students to solve problems is still relatively low.

Problem-solving skills are essential for students in physics learning. Problem-solving activities can help students to construct new knowledge and facilitate physical learning (Argaw, Haile, Ayalew, & Kuma, 2017). In facing the challenges of the 21st century, teachers are better off preparing students to become researchers, problem solvers, critical, and creative-minded (Buteler & Coleoni, 2014).

Problem-solving in physics education is often represented in the form of abstract symbols that ignore the physical meaning of a concept. If we want students to learn and understand how to use symbolic representations as part of the process, then we must relate abstract concepts with more accurate descriptions.

The results of the research conducted by Reddy Regarding problem-solving ability found that there are 78% of students choose to work on questions by following the example. 50% of students choose not to continue to work on problems when facing difficulties (Reddy & Panacharoensawad, 2017). It means that students' problem-solving skills are not optimal. Students also feel difficulties in solving physics problems because of knowing the formula used but do not understand the qualitative meaning of the conceptual formula (Prahani, Limatahu, Yuanita, & Nur, 2016). These studies show that student problem-solving skills are still low and need to be improved to prepare students in the future.

One of the physics topics that require problem-solving skills is the topic of temperature. Preliminary study results in the junior school in Jakarta showed that students feel difficulties in understanding and resolving issues related to temperature topics. This problem was due to students' difficulties in analyzing and solving problems in the concept of temperature and expansion in daily life. Other studies have stated that on the concept of temperature, students are still often reversed in analyzing the comparison of thermometers. School learning is also still centered on the teacher, so the learning is still one-way.

Based on interviews with several teachers in junior high school in Jakarta, when teachers explain their temperature material, they will experience a lack of learning time in the classroom. The time in the classroom can only be used to describe the material in which many physical formulas are in nature. Teachers must prepare additional time outside of class to provide a deepening of the material. This activity is felt less effective if used continuously in physics learning. Therefore, learning is necessary to make students learn independently, and both students can absorb physical learning materials.

Advances in Information Technology and the Internet have resulted in drastic changes in the learning process, both in terms of learning, learning media, and teaching. One technology that significantly changes both the way students learn and the way they teach lecturers is video technology. With the learning video, students can study at home better because the student can repeat to watch the video. One learning method that utilizes video technology is the Flipped Classroom method.

Based on the explanation above, researchers feel the need to develop learning models Flipped Classroom is an animated physics video based on grade 7 students in junior high school. Flipped Classroom Based Learning model is one of the learning models that Student-centered to improve learning effectiveness. Teachers generally use lecture learning models, where lecture learning models reflect teacher-centered learning. The learning then switches to an alternative model called the Flipped Classroom. According to Bishop & Verleger, Flipped Classroom is a learning model that minimizes the number of direct instructions but maximizes one-on-one interactions (Bishop & Verleger, 2013). This strategy utilizes technologies that support additional learning materials for students who can be accessed online or offline anytime and anywhere. While the learning time in the classroom used students to collaborate with project peers, practice skills, and receive feedback on their progress (Khalid, Zainuddin, & Nuwari, 2018).

The Flipped Classroom Model delivers what students do in the classroom and what student do as homework in reversed or exchanged. Usually, students come to class to listen to their next teacher explanation to work on the practice. Now, students read the material, looking at the Physics animation video before they come to class, and they start discussing, exchanging knowledge, solving problems in the classroom. By implementing the Flipped Classroom model based on animated video is one of the alternatives to improving the ability to troubleshoot physics in Grade 7 students in junior high school.

## **2.0 METHOD**

The method used in this research was the quasi-experimental method with the research design of The Randomized Post-Test Only Control Group Design, which involved 202 students as samples. Sample determination used random sampling cluster technique. The learning instruments were a lesson plan, video animated physics, e-learning, and worksheet. The variable was measured by using a problem-solving ability test for Temperature subject of seventh-grade of Junior High School.

Table 1. Indicator of problem-solving skills instrument

Stage	Indicator	No. Question
Visualize the problem	Visualizing problems into visual representations	1
	Identifying issues based on basic concepts	2
	Determine the asked size	3
Describe the problem in physics description	Converting visual representation into a physic description	4
	Create a free object diagram/sketch describing the problem	5
Plan the solution	Transforming a physics description into a mathematical representation	6
	Determining the right equation for troubleshooting	7
Execute the plan	Substituted the known magnitude value to the equation	8
	Perform calculations using the selected equation	9
Check and evaluate	Evaluating compliance with the concept	10

The primary data used to see an increase in the ability to solve physical problems are the pretest and posttest results. The data is analyzed to see the score of the test results. Then the test results are calculated on average. Moreover, calculate the Standard Gain between pretest and posttest. The criteria for obtaining a standard gain score can be seen in Table 2.

Table 2. Indicator of Gain Standard value

Range	Category
$g > 0,7$	High
$0,3 < g \leq 0,7$	Medium
$g \leq 0,3$	Low

In addition to using Standard Gain analysis, analysis of differences before and after actions can also use paired t-test analysis or often called test dependent or Paired Sample T-test is used to compare the average of two sets of data (before and after implementation flipped classroom models) in pairs. Hypothesis testing used in this study is the right party test. In this party test, the provision applies that, if the price of t-count is greater than or equal to ( $>$ ) the table price, then  $H_0$  is accepted and  $H_0$  is rejected.

In this study, two sets of data were the students' problem-solving skills before and after treatment, at a 95% confidence level ( $\alpha = 0.05$ ). Before conducting data analysis by paired t-test, we first test whether the two data are distributed normally or not. The test statistic used the Lilliefors normality test using SPSS.

### 3.0 RESULT AND DISCUSSION

Required material before implementing flipped classroom learning were a lesson plan, learning materials, animated physics videos, e-learning, worksheet, and problem-solving skills instruments. The Learning Management System (LMS) in this activity was Edmodo. The Edmodo app can be used for free and can be downloaded via Playstore. At the first meeting, the student was invited to download and install the Edmodo app, then register the account on Edmodo. Any material form of physics and the animated



video was displayed in Edmodo. Students must actively open the Edmodo app at any time. Announcements and essential info also displayed in Edmodo.

Students could open the Edmodo app when already at home to learn temperature materials. At the second meeting in the class, students were given a worksheet to understand the concept of temperature. In the worksheet contains practicum and application of temperature concepts in daily life. While in the teacher class only discussing and strengthening the material, students had previously learned independently through the Edmodo app.

At the third meeting, the student learned the expansion material in the Edmodo app. The discussion is about questions and answers that would be discussed at the third meeting when in the classroom. During learning, the teacher gave problems related to the concept of expansion on solid substances. Then, the teacher allowed students for discussion with his friend and then expressed his opinion on the solution to the problem.

At the fourth meeting, when in the classroom, the students continued to extend the expansion material by conducting an experimental expansion of liquid substances. At the time of practicum, students devised their practicum from preparing tools and materials to analyze the results of practicum. Teachers acted only as facilitators and monitor student learning activities in the classroom. Here visible students had started to act and study independently, without having to be led by the teacher. In the classroom began to see student-centered learning.

Before the fifth meeting begin, teachers provided material and case studies displayed in the Edmodo app. The initial understanding of the students regarding expansion to gas substances varies. Students answered in the Edmodo app. At the time of the meeting, the teacher delivered the correct answer to the case study, with explanations that could add to the students' understanding. At the end of a student meeting, the student explained his ability to understand temperature materials, and some other students respond to it if there was a wrong student concept/ misconception. Teachers gave conclusions and reinforced the material during the learning process. Teachers give homework to the students to practice the quiz in the app Edmodo so that students were accustomed to working on problems and solve the problem of physics.

At the sixth meeting, the teacher held a post-test to know the extent of the student's knowledge in understanding the material already given. Post-test were given a written test with a model essay aimed at improving student problem-solving skills.

From the results of the existing post-test, there was an increase in problem-solving skills of students before and after implementing the flipped classroom model. Here were the results of the value description before and after using the flipped classroom model.

Table 2. Value of problem-solving skills

	<b>Before using the flipped classroom model</b>	<b>After using the flipped classroom model</b>
Average	63	78
Maximal value	70	94
Minimal value	46	72
Learning submission (%)	36 %	89 %

Student problem-solving skills before and after using flipped classroom models were quite different. The average pre-test is 63, and the post-test after the flipped classroom study is 78. After learning the flipped classroom, student problem-solving skills have increased by 19%. The student's learning is also improved, and more than minimum completeness score, the value is 70. To see the enhancement of student physics problem-solving skills seen from the analysis of the average pretests and post-test values based on the standard Gain formula. With the standard Gain formula obtained a value of 0.46 with the category "Medium."

Before conducting data analysis with a paired test-T. First, we tested whether or not both data were distributed normally. The test statistics used Lilliefors normality test. The value (P-value) of test normality for data before and after the implementation of the flipped classroom is higher than 0.05. Then the statistical conclusion  $H_0$  is accepted, which means that both data are derived from a population that was distributed normally. In other words, the data is a normal distribution (with P-value = 0.790). Therefore, the paired t-test can be applied.

After being analyzed using SPSS acquired P-value from test-T in pairs is 0.000, which is smaller than 0.05. Thus, the statistical conclusion  $H_0$  is rejected. This calculation means that the value of problem-solving skills of students before and after being given action is not equal to zero. The average second difference between the pretests and the posttest is 17. Thus, it means that the application of animated video-based flipped classroom was effectively used in school learning, with a trust rate of 95%. This accordance with some previous studies (Tucker, 2012) (Rahman, Abdullah, Mohammed, Zaid, & Aris, 2014) showing improved learning outcomes from the Flipped Classroom implementation. Students show enthusiastic learning, and the student's motivation in learning is increasing as the majority of students prefer to learn technology-based using smartphones or laptops.

The students in answering problem-solving questions integrated well. Students can be visualizing problems into visual representations about physics, and then they can converting visual representation into a physic description. Problem-solving skills can be measured by giving problems or case studies. Then students are asked to express their own opinions about solutions of the case studies. In this study, students initially were not able to understand the questions on the case studies. Therefore, the answers of students were not following the concept of physics; they just answered it. When learning with the flipped classroom, students are given a case study; then they answer or provide solutions to the case study. Students must be able to solve problems well following the concepts of physics (Buteler & Coleoni, 2014) (Nordin & Osman, 2018). The improvement of students' problem-solving skills can be seen from the answers of the case studies and the posttest. Vigotsky learning theory states that intellectual development occurs when individuals face new and challenging experiences, and try to solve the arisen problems (den Brok, Taconis, & Fisher, 2010). Therefore, problem-solving is essential to pay attention to the teacher in learning in the classroom.

Classroom learning generally acts as an information provider and as a class leader. While learning models can be Flipped Classroom implemented like think-pair-share activities where students interact with their colleagues, while the instructor functions as a facilitator who helps to complete the task. This study supports previous research conducted by (Velegol, Zappe, & Mahoney, 2015), which the literature in the field of science has encouraged lecturers and instructors to use learning models. This model requires student involvement in shifting material from passive to active. Students are physically involved in learning activities, building knowledge, and students are required to have new outputs that go beyond the information presented in class (Unal & Unal, 2017). Flipped Classroom learning shapes interactions between students and students and between students and teachers.

The most suitable media in the flipped classroom is a video. If the teacher is not ready to produce the video, then she/ he can find it in the Internet (Bhakti, Astuti, Sumarni, Sulisworo, & Toifur, 2019). Videos shown in learning can replace the position of the material for students to learn outside the classroom. So when face to face in class, the teacher no longer explains the material because it has been absorbed in the video and e-learning. Multimedia plays an essential role in learning, especially the flipped classroom model. Multimedia and other interactive features have become a hallmark of modern assessment technology (D. P. Astuti, Leonard, Bhakti, & Astuti, 2019) (Marsh, Ip, Barnard, Wong, & Rejeski, 2011).

Flipping the classroom allows for a range of teaching methodologies to be employed such as videotaping the instructor while lecturing, creating videos with voiceover and screen-capture software, instructions accompanied by visual aids, utilizing videos found online from sources such as YouTube and TeacherTube, and integrating discipline-specific websites of videos available through professional organizations and companies (Amy Roehl, Shweta Linga Reddy, & Gayta Jett Shannon, 2013).

The assessment conducted on the learning model based on the Flipped Classroom is not only carried out at the end of the competency but is carried out during the teaching and learning process in the classroom. This statement is in line with the research of Enfield, which express formative and summative assessments should be included in meaningful face-to-face learning activities (Enfield, 2013) (Unal & Unal, 2017). Other research (Zhou & Jiang, 2014), comprehensive assessment is an inseparable part of the Flipped Classroom. This activity includes the assessment of the understanding process, the application process, and analyzing through presentations, learning outcomes reports, and self-evaluation. Assessment of learning models based on Flipped Classroom is carried out in the beginning of learning, during the learning process, and at the end of learning in class.

The results of research on learning activities with the Flipped Classroom model show an increase in students' problem-solving in applying the concept of temperature. Students are more actively involved in classroom learning activities. This finding is in line with the research of Enfield, which shows students are more confident in-class activities, ready to accept learning activities with better motivation than ordinary

learning models (Enfield, 2013). This result shows that the Flipped Classroom-based learning model can increase motivation, activeness, and learning skills.

#### 4.0 CONCLUSION

Based on the results of research, the flipped classroom model based on video animation can improve the ability to solve physics problems. There was a significant difference in the mean scores between pretest and posttest, and an increase in the students' posttest score in solving physics problems of 19%. The students look more active and motivated in learning physics and lead to functional learning independence as well.

Video-based Flipped Classroom cannot stand alone. So that optimal learning goals can be achieved in addition to utilizing technology, other learning methods and strategies are necessary. Teachers must be able to integrate the use of media and strategies such as group learning, paired learning, peer coaching, all of which support active learning. Furthermore, of course, by giving students a video tutorial with quality presentation and content. With video media, students can discuss or ask for an explanation with their classmates, concentrate more, and are more focused and more competent. Besides, students become active and motivated to practice the exercises because the examples from the video media are prominent using audiovisuals that are very easy to catch and attract.

#### 5.0 ACKNOWLEDGMENT

We want to thank and appreciate to Ministry of Research, and Higher Education of Republic Indonesia for the funding of this research through the grant of Higher education institution collaboration (Penelitian Kerjasama Perguruan Tinggi) for the year 2019. This research supported by LLDIKTI III, LPPM Universitas Indraprasta PGRI, and Universitas Ahmad Dahlan.

#### REFERENCES

- Amy Roehl, Shweta Linga Reddy, & Gayta Jett Shannon. (2013). The Flipped Classroom : An Opportunity To Engage Millennial Students Through Active Learning Strategies. *Journal of Family & Consumer Sciences*, 105(2), 44–49.
- Argaw, A. S., Haile, B. B., Ayalew, B. T., & Kuma, S. G. (2017). The effect of problem based learning (PBL) instruction on students' motivation and problem solving skills of physics. *Eurasia Journal of Mathematics, Science and Technology Education*, 13(3), 857–871. <https://doi.org/10.12973/eurasia.2017.00647a>
- Astuti, D. P., Leonard, L., Bhakti, Y. B., & Astuti, I. A. D. (2019). Developing Adobe Flash-based mathematics learning media for 7 th -grade students of junior high school. *Journal of Physics: Conference Series*, 1188(1), 012098. <https://doi.org/10.1088/1742-6596/1188/1/012098>
- Astuti, I. A. D., Sulisworo, D., & Firdaus, T. (2019). What is the student response to using the weblogs for learning resources? *Journal of Physics: Conference Series*, 1157(3), 032012. <https://doi.org/10.1088/1742-6596/1157/3/032012>
- Bhakti, Y. B., Astuti, I. A. D., Sumarni, R. A., Sulisworo, D., & Toifur, M. (2019). Flipped Classroom as a Millennial Teaching Model. *Indonesian Review of Physics*, 2(1), 22–27.
- Bishop, J., & Verleger, M. A. (2013). The Flipped Classroom : A Survey of the Research. *120th ASEE Annual Conference & Exposition*, 6219. Retrieved from <http://www.asee.org/public/conferences/20/papers/6219/view>
- Buteler, L. M., & Coleoni, E. A. (2014). Exploring the Relation Between Intuitive Physics Knowledge and Equations During Problem Solving. *Electronic Journal of Science Education*, 18(2), 1–20.
- den Brok, P., Taconis, R., & Fisher, D. (2010). How Well Do Science Teachers Do? Differences in Teacher-Student Interpersonal Behavior Between Science Teachers and Teachers of Other (School) Subjects. *The Open Education Journal*, 3(1), 44–53. <https://doi.org/10.2174/1874920801003010044>
- Enfield, J. (2013). Looking at the Impact of the Flipped Classroom Model of Instruction on Undergraduate Multimedia Students at CSUN. *TechTrends*, 57(6), 14–27. <https://doi.org/10.1007/s11528-013-0698-1>
- Khalid, N., Zainuddin, N. Z., & Nuwari, N. (2018). Meaningful Gamification : A Conceptual Model of

- Discrete Math in a Flipped Classroom. *4th International Conference on Information Technology & Society*, 1–4.
- Marsh, A. P., Ip, E. H., Barnard, R. T., Wong, Y. L., & Rejeski, W. J. (2011). Using video animation to assess mobility in older adults. *Journals of Gerontology - Series A Biological Sciences and Medical Sciences*, 66 A(2), 217–227. <https://doi.org/10.1093/gerona/glq209>
- Nordin, N. M., & Osman, K. (2018). Students' Generated Animation: An Innovative Approach to Inculcate Collaborative Problem Solving (CPS) Skills in Learning Physics. *Journal of Education in Science, Environment and Health*, 4(2), 205–224. <https://doi.org/10.21891/jeseh.436758>
- Prahani, B. K., Limatahu, I., Yuanita, L., & Nur, M. (2016). Effectiveness of Physics Learning Material Through Guided Inquiry Model To Improve Student's Problem Solving Skills Based on Multiple Representation. *International Journal of Education and Research*, 4(12), 231–242.
- Rahman, A. a, Abdullah, Z., Mohammed, H., Zaid, N. M., & Aris, B. (2014). Flipped classroom : Reviving cognitive development among school students. *3rd International Seminar on Quality and Affordable Education 2014*, 5.
- Reddy, V. M., & Panacharoensawad, B. (2017). Students Problem-Solving Difficulties and Implications in Physics: An Empirical Study on Influencing Factors. *Journal of Education and Practice*, 8(14), 59–62. Retrieved from <http://libproxy.library.wmich.edu/login?url=https://search.proquest.com/docview/1913347933?accountid=15099>
- Tucker, B. (2012). The flipped Classroom Online, Instruction at Home Frees Class Time for Learning. *Education Next*, 82–83. [https://doi.org/10.1007/978-981-10-6968-0\\_1](https://doi.org/10.1007/978-981-10-6968-0_1)
- Unal, Z., & Unal, A. (2017). Comparison of student performance, student perception, and teacher satisfaction with traditional versus flipped classroom models. *International Journal of Instruction*, 10(4), 145–164. <https://doi.org/10.12973/iji.2017.1049a>
- Velegol, S. B., Zappe, S. E., & Mahoney, E. (2015). The Evolution of a Flipped Classroom : Evidence-Based Recommendations. *Advances in Engineering Education*, 4(3), 1–38. Retrieved from <https://www.scopus.com/inward/record.uri?eid=2-s2.0-84928332328%7B%7DpartnerID=40%7B%7Dmd5=14f80b2f051803efb375a6f5d1b3607b>
- Widodo, S. A., Darhim, D., & Ikhwanudin, T. (2018). Improving mathematical problem solving skills through visual media. *Journal of Physics: Conference Series*, 948(1), 012004. <https://doi.org/10.1088/1742-6596/948/1/012004>
- Zhou, G. Q., & Jiang, X. F. (2014). Theoretical research and instructional design of the flipped classroom. *Applied Mechanics and Materials*, 543–547(March), 4312–4315. <https://doi.org/10.4028/www.scientific.net/AMM.543-547.4312>

## Potentials and Anxieties: Education and Technology through A Dystopian Lens

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### ABSTRACT

Owing to its tendency to portray a 'worst-case-scenario' of a particular socio-political, technological or environmental possibility, the dystopian genre of fiction is generally perceived as a reflection of social anxieties relating to actual contemporary social issues. Among the many subjects that have stimulated the dystopian literary imagination, Information Technology and educational practices are two fields whose development across the centuries can be traced in tolerably distinct historical trajectories. However, with the arrival of the digital age, the earlier distinct scopes of these two fields are seen to increasingly overlap, generating unprecedented anxieties as well as possibilities. At present, technology has permeated all aspects of pedagogical practices including learner and teacher roles, learning input and output, assessment methods and classroom inclusivity. In this context, the present paper conducts an analysis of two dystopian movies, "Class of 1999" directed by Mark L. Lester and "The Thinning" directed by Michael Gallagher, that bring together education systems and technological advancements to a single frame, in order to comment on the potentials and dangers implicit in the overlapping of technology and education in the contemporary digital era. The study comprises a close textual analysis of the two movies situated within a theoretical framework informed by the Foucauldian discourse on education institution, power/knowledge and disciplinary and regulatory politics of the State, and a comparison of these observations against current and historical pedagogical models. The results of the study indicate that the speculative element at the core of the two selected movies provides a legitimate space for the movie makers to explore, firstly, the shortcomings of past and present education systems, and secondly, the ghastly possibilities of the union between education and technology mediated by State power gone wrong, which in turn reflects current social anxieties regarding the issue. The paper argues that the fictional realities constructed through the two movies signal that in a future context of a possible asymmetrical development of technology and pedagogical practice, the current educational techniques may prove ineffective if not toxic; i.e., that pedagogical practices and principles must keep pace with technological advancements in order to generate a meaningful teaching and learning experience. The issue is made all the more immediate owing to the involvement of the education institution in the anatomo-politics and biopolitics of the State.

**KEYWORDS:** Dystopian fiction, Education and technology, Knowledge and power, Class of 1999, The Thinning

### 1.0 INTRODUCTION

Though often overlooked, there seems to exist an intricate relationship between popular culture and public policy. For instance, Witte and Goodson in their study about the discursive connection between the popularized narratives about American education policies and their representation in popular culture insist that "educational researchers need to begin to address the ways in which popular culture narratives shape and are shaped by the policy environment" (2010 p.3). In this context, the present paper takes into consideration the genre of dystopian fiction—one of the more "popular" genres among many of popular culture products, particularly among youth—as a mode of inquiry into the state of pedagogical practices and policies in the digital era.

Dystopian genre is often understood as a subgenre of speculative fiction, with dystopia implying an alternative reality set in a speculative future—typically in the aftermath of a catastrophic event that completely transforms the existing social conditions—where human subjects are exposed to oppressive totalitarian control in the form of political, religious, scientific, technological or gender propaganda. Some of the more popular examples of cult dystopian fiction include movie franchises such as *The Matrix*, *Hunger Games* and *The Planet of Apes* and novels such as *1984* by George Orwell, *The Handmaid's Tale* by Margaret Atwood, and *Brave New World* by Aldous Huxley.

As often pointed out by scholars of dystopian fiction, despite being a mode of popular entertainment and popular culture, dystopian fiction carries an iceberg of social criticism beneath its "pop" exterior. For instance, Burnett and Rollin observe that "dystopias usually exaggerate contemporary social trends and in doing so, offer serious social criticism" (2000, p.78), while Witte and Goodson point out that "'dystopia' often serves as a device to explore the consequences of policies or practices considered by the author to be

ill-advised” (2010, p.3). In other words, owing to the futuristic and speculative nature at its core, dystopian fiction allows one to view contemporary social issues from a novel angle without being restrained by the existing episteme<sup>1</sup> that constructs one’s perception of reality. However, it can be observed that these “policies and practices” that dystopian fiction warns against are often related to contemporary environmental, moral, scientific or sometimes gender issues, but rarely educational ones. Consequently, there is limited scholarly literature on how the rich dystopian imagination may address issues pertaining to contemporary education policies and practices.

In this context, the present paper analyses two dystopian movies, namely, *Class of 1999* (1990) directed by Mark L. Lester and *The Thinning* (2016) directed by Michael Gallagher, the central preoccupation of which appears to be education in the digital era. The analysis, which is framed within the Foucauldian concepts of knowledge/power and the disciplinary and regulatory politics of the State, focuses on the relationship between technology, education and the State in order to explore the potentials and dangers implicit in the introduction of modern technology to the delicate relationship between education policy and State power.

### 1.1 Research Objective

The objective of the present study is to explore how fictional realities of educational dystopia may better expose the influence that technological developments have on the power dynamics between the State and educational institutes, particularly in the formation of educational policies and practices.

### 1.2 Research Questions

- i. How do *Class of 1999* and *The Thinning* use technology to reimagine the power relations between the State and the Educational institution?
- ii. How do the two movies relate to existing educational models?

## 2.0 METHODOLOGY

The study adopts qualitative content analysis as its main research method, and utilizes Foucauldian insights into power/knowledge and the disciplinary and regulatory politics to form the basic framework of the analysis of the two selected texts.

### 2.1 Power/Knowledge and the school

Foucault’s conception of Power/Knowledge is closely related to his theorization of discourse and episteme. Discourse, for Foucault, is what constructs an object of knowledge as *knowable* by “constrain[ing] or enabl[ing], writing, speaking and thinking.” (Ball, 2013, p.19) about it. Such discourse is “always already” conditioned by a set of “principles determining what type of knowledge is considered valid and legitimate” (Oliver, 2010, p.28) at a particular era of history, which Foucault terms the “episteme.” Thus, discourse, which is conditioned by the episteme of the relevant historical location, defined what knowledge qualified as knowable within that particular historical moment.

Knowledge that is conditioned and constructed through discourse is closely associated with power. However, in the Foucauldian definition, “power is not a mode of subjugation, or a general system of domination and indeed power is as much about what can be said and thought as what can be done—it is discursive.” (Ball, 2013, p.30). This is because it is discourse and discursive practices that define the boundaries of sanity, reason and comprehensible knowledge. (Ball, 2013, pp. 20-21). As the critic Oliver points out, “discourse can be very much associated with power and with the ability to exercise that power” (2010, p.29), while “power requires knowledge to be effective, and knowledge, at the same time, generates power” (2010, p.38).

Foucault maintained that “power was in effect distributed among the many institutions and organizations of the State” (Oliver, 2010, p.38), with power being redistributed through and between the strata of hierarchical structures. Given this understanding, the school becomes much more than a simple institution dedicated to disseminating knowledge among children. On the contrary, from a Foucauldian perspective, as pointed out by many education researchers (Ball, 2013; Priyadharshini, 2019; Witte and

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<sup>1</sup> According to Foucault, episteme is “an interweaving network of assumptions about the world that conditioned the beliefs and propositions that were accepted as true” (Oliver, 2010, p.8) in each era of history.

Goodson, 2010), it becomes a social institution highly implicated in the maintenance of State power. This understanding forms the basic framework through which the present study analyses the relationship between education and the State as portrayed in the two selected fictional realities.

## 2.2 Regulatory and disciplinary politics

The critic Ball points to two interrelated “politics” explicated in the Foucauldian conception of State power, namely regulatory and disciplinary (Ball, 2013);

disciplinary power, which focuses on the individual body and is concerned with the “disciplinary technology of individual dressage” (Stoler, 1995, p. 82) and regulatory power, which is concerned with the life of the body of the species and is “globalising” rather than individualizing. (Ball, 2013, p.45)

According to him, “discipline is anatomo-politics, and regulation is biopolitics. These are two forms or levels of power which intertwine with the aim of the management of the population” (Ball, 2013, p.45). Here, “anotomo-politics” relates to the individual human body while “biopolitics” relate to the survival and the governance of the population or the human race. As Ball points out, “the regulator and the disciplinary operate at different levels, what we might roughly call policy and practice, but which are closely interrelated at many points” (Ball, 2013, p.60). The use of policies and practices to regulate and discipline populations that pass through social institutions is particularly evident in educational institutes, and this discursive relationship between the State and the educational institution is observed to be grimly redefined in *The Thinning* and *Class of 1999*.

## 3.0 DISCUSSION

### 3.1 *Class of 1999*, *The Thinning* and Foucault: Disciplinary and Regulatory Politics

*Class of 1999* is a movie directed by Mark L. Lester that is often classified as a horror/thriller movie. However, the movie also contains dystopian characteristics such as the futuristic setting, collapse of the social order that is considered “normal” in contemporary society, constant surveillance and the attempt at the restriction of “information, independent thought, and freedom” (NCTE/IRA, 2006, p.1). The movie which was released in 1990 imagines the American education system in 1999 as rampant with violent gang activities. The viewer is informed in the beginning of the movie that youth violence in American high schools has spiralled out of control, so much so that certain areas of the country, known as “free-fire zones” have fallen under the control of youth gangs. The Department of Educational Defence or the “DED” collaborates with Megatech, a company of “automation and robotic specialists” (*Class of 1999*, 1990) led by Dr. Forrest, to launch a technology based pilot project to instil discipline back in the school system. The story revolves around the encounter of Cody Culp, the protagonist who is a student of Kennedy High located in the middle of a free-fire zone, and the automated “super teachers” (*Class of 1999*, 1990) newly introduced to the school system.

In comparison, *The Thinning* (2016) directed by Michael Gallagher imagines a future where a severe environmental collapse has forced the world population to implement drastic population control policies:

In the near future, the world’s resources have severely depleted due to overpopulation. To combat this crisis the U.N. now requires all countries to cut out their population s by 5% annually. In America, all students must take a standardized test once a year. The lowest scoring students are executed. The test is known as the 10-241. But most call it the Thinning (*The Thinning*, 2016)

Even though the main action of the movie revolves around the dramatic struggle of the protagonist Laina Michaels to fight against authorities that manipulated her test score and condemned her to death, the setting of the alternate reality she lives in provides deep insights into the question of education policies and practices.

In a manner of speaking, *Class of 1999* and *The Thinning*, both set in the United States, can be read as two extremes of worst-case possibilities of the US Education gone awry, the former depicting a school system that breeds “delinquents” and “idiot children” (Ball, 2013, p.14) and the latter a school system that aims to make America “the number one most informed and educated population in 196 countries” even at

the cost of the lives of such “delinquents” and “idiot children.” The involvement of the State Apparatus in both realities, and the role played by technology in the power dynamics between the Education institution and the State become important in analysing the movies’ commentary on contemporary pedagogical policies and practices.

In the Foucauldian discourse, prisons, mental hospitals and schools were comparable to each other due to their similar involvement in discursive practices as institutions that maintain of State power. One such unifying characteristic is that the disciplinary power operating in all such institutions “breaks down individuals, places, time, movements, actions and operations. It breaks them down into components such that they can be seen, on the one hand, and modified on the other” (Foucault cited in Ball, 2013, p.46). Students in schools are sorted into groups based on age, gender and performance and placed in different physical “places” while the time is broken down into a set timetable.

The idea of our being allocated a specific area within which we are permitted to sit or move is so prevalent in contemporary society that we tend to take it for granted. In schools, for example, pupils are allocated specific areas for learning, recreation and eating, and certain facilities and rooms may not be accessible to them. (Oliver, 2010, p.58)

In this context one is tempted to think that perhaps it is not a coincidence that the “super teachers” of *Class of 1999* were former military robots and that Kennedy High in *Class of 1999* and Vista Point High School in *The Thinning* eerily resembles prisons and mental institutions—with electrocuted fences securing the perimeter of the school and automated doors locking the students in their respective classes in accordance with their timetables. Using such subtle devices the two movies make schools, prisons and mental hospitals appear unnervingly similar—both in their physical structure and institutional practices.

Foucault identifies certain “technologies” involved in the maintenance of institutional power through “psychological, medical, penitential and educational practices and discourses” (Hall, 1994, p.154). According to Hall “the technologies he identifies which are most pertinent to an understanding of education are hierarchical observation, normalising judgments and the regulatory instrument *par excellence*, the examination” (1994, p.154). It can be observed that all three technologies identified here are portrayed in the two selected movies. In *Class of 1999* in particular, the practices of “hierarchical observation” and “normalising judgment” are presented to the viewer through the robotic view of the super teachers, dramatizing the mechanical nature of such discursive practices. (see fig 1)



Fig 1: “Super Teacher” observing and assessing the classroom situation. (*Class of 1999*, 1990)

In contrast, *The Thinning* for the most part exaggerates the practice of examination in order to criticise the regulatory power of the State operating behind education policies.

Quoting the critic Stoler, Ball argues that “schooling is one point on the ‘crossroads where that power over, and invested in, individual bodies and populations would converge in technologies of discipline and



regularization' (Stoler, 1995, p. 83)" (2013, p.54) In this context, it can also be observed that *Class of 1999* and *The Thinning* may be read as reflections of disciplinary and regulatory politics respectively.

*Class of 1999* exaggerates the implicit need in the education system to discipline disobeying students. This is achieved through the introduction of the robotic "super teachers" Mr. Bryles, Mr. Hardin, and Ms. Connors, who sprout flame throwers and missile launchers to "discipline" the students, killing many in the process. Thus, it appears that the fictional reality of *Class of 1999* brings out the "anatomo-politics" or the "disciplinary politics" passed down to the education institution. The ultimate result of the extreme disciplinary methods used by the teachers is the death of most of the students and the burning down of the entire school. This exaggerated scenario may also echo the contemporary anxieties regarding the potentials and dangers in introducing modern technology into education which may cause its disciplinary politics to evolve in unexpected directions. At the same time, it signals to the dangerously thin line between educating and disciplining in contemporary discourse on education.

In contrast, *The Thinning* appears to focus more on discussing the regulatory power invested in educational institutions. The Thinning programme is quite obviously a blatant part of the national policy to systematically reduce its population. According to the Foucauldian discourse, the focus of the State's "bio-power" is the "management of populations" (Ball, 2013, p.6), and it can be observed that the education policy in the fictional reality is involved in this process in a grimly literal sense. Furthermore, the Thinning system carries overtones of what Foucault termed "new racism."

This "new racism", in Foucault's sense, is "a break in the domain of life that is under power's control: the break between what must live and what must die" (Foucault, 2004a, p. 254), that is between the good and the inferior. It is a "biological caesura", which sub-divides the species and provides and accounts for the elimination (and/or exclusion) of the inferior, degenerate and abnormal, the "enemies" of population, for the benefit of all, it "is something that will make life in general healthier: healthier and purer" (p. 255). (Ball, 2013 p.63)

It is evident that the application of this rather abstract theorisation is portrayed quite literally in *The Thinning*. Particularly, the coupling of this situation with modern technology that can be manipulated to benefit those who exercise power in the movie raises consciousness about the implications of education in the bio-politics and disciplinary politics of the State in the digital era. For instance, it is revealed in the movie that the governor Dean Redding has manipulated the student test scores on at least two occasions for his benefit: First, to fail Ellie Harper despite her score of 88%, because he disapproved of her love relationship with his son Blake Reddings, and a year later, to save his son's life who failed the test on purpose to disprove his father's hypocritical claim "nobody is above law" (*The Thinning*, 2016). At a broader level, the governor Reddings utilises his apparent "success" in implementing the Thinning programme to boost his political campaign. These examples indicate how the pliability of information technology complicates the relationship between educational institutions and the State in the fictional reality of the movie.

### 3.2 Existing education models vis-à-vis *Class of 1999* and *The Thinning*

The education models represented in both *Class of 1999* and *The Thinning* bear a strong resemblance to the "Banking model of education" identified by Paulo Freire. In his seminal work *Pedagogy of the Oppressed*, Paulo Freire defines the banking model of education a system where the student becomes a passive receiver of information and knowledge imparted to them by a more knowledgeable teacher, where "the teacher issues communiqués and makes deposits which the students patiently receive, memorize, and repeat" (1972). This appears to be the system subscribed to by the educators in the two dystopian realities, for they have the complete control not only over what types of knowledge the students receive but also over the life and death of the students. The deaths of countless students through the regulatory and disciplinary practices in these two fictional realities may be read metaphorically as a criticism of the imbalance of power between the teacher and the student in certain educational practices. By extension, it could also be read as a criticism of the inevitable function of education as a disciplinary tool to maintain State power, and our own implication in it as educators.

Therefore, the situation is dystopic not only for the student but also for the educators since both are implicated in the hierarchical structure of State power, its anatomo-politics and biopolitics. This apparently docile position of educators in the system is brought forward in Dr. Forrest's comment about the functionality of the super teachers: "they are machines, you idiot. They absorb whatever we put into them" (*Class of 1999*, 1990). However, the film also indicates possibilities of resistance in its representation of

how Cody resists the super teachers, and how the super teachers in their turn resist the propaganda of the DED. Here, the introduction of speculative technology in to the education scene that we take for granted brings to fore the complicated power dynamics controlling the education system, and also the worst-case scenario of such dynamics going awry.

The selected movies, *The Thinning* in particular, address certain existing, though outdated, assessment methods. The “standardized test” named the Thinning is an ideal example of traditional assessment methods that primarily test the student’s ability to memories factual and conceptual knowledge.

In pointing out the importance of examinations and testing in contemporary society, Foucault was implicitly indicating the failings of such a system. A preoccupation with testing often attaches an exaggerated importance to the testing process itself, rather than the skill or knowledge being tested. (Oliver, 2010, p.13)

In this context, while the Thinning could be interpreted as a criticism of the toxic nature of traditional standardized tests (which at times push students to death “in reality” even without government propaganda), at a deeper level it could also be read as a commentary on the possibility of the education system to be used as a regulatory tool that propagates “new racism.”

As the critic Ball points out, “anxieties about the ‘fitness’ of the population during the last decades of the century was the aspiration to breed—and educate—an ‘imperial race’” (Donald, 1992 , p. 27)” (Ball, 2013, p. 61). This anxiety and the resultant “new racism” that attempts to define “what must live and what must die” (Foucault, 2004 cited in Ball, 2013, p.63) for the betterment of the population are reflected clearly in the public speeches of Governor Redding:

Well, I ask you, is it barbaric to be leading in innovation? Is it barbaric to be the number one most informed and educated population in 196 countries? Is it barbaric to be the best? If you don't work, if you don't support our great society, then you are living off the system. That is a parasite. And do you know what we do with parasites? We wash them out. (*The Thinning*, 2016).

His speech, bordering on threats of genocide exaggerates the direct power that the State has over education policies and practices and also the apparently docile positions that teachers and students assume in its hierarchical structure.

#### 4.0 CONCLUSION

The present study set out to analyze from a Foucauldian perspective two educational dystopias represented in the movies *Class of 1999* directed by Mark L. Lester and *The Thinning* by Michael Gallagher in order to study the relationship between the State, educational institutes and modern technology. The study indicated that the fictional reality of the movie *Class of 1999* may be read as a dramatization of the disciplinary politics and the anatomo-politics of the State executed through educational institutions, while the fictional reality portrayed in *The Thinning* orients more towards exaggerating the biopolitics or the regulatory politics of the State and educational institutions. It could also be observed that the two movies present a criticism of certain historical and existing pedagogical models such as the Banking model of education and traditional assessment method of standardized tests. Furthermore, the two selected movies explore how the introduction of technology transforms these modalities of regulation and disciplining, or rather, and more importantly, how the introduction of technology into education policy is conditioned by the larger disciplinary and regulatory politics of the State.

#### REFERENCES

- Ball, Stephen J. (2013). *Foucault, Power, and Education*. New York: Routledge.
- Burnett, G. W. and Rollin, L. (2000). Anti-leisure in dystopian fiction: the literature of leisure in the worst of all possible worlds. *Leisure Studies*,19(2), 77-90.
- Freire, P. (1972). *Pedagogy of the oppressed*. New York: Herder and Herder.
- Gallagher, M. J., Winternitz, J. Wormser, M. (Producers) & Gallagher, M. J. (Director). *The Thinning* [motion picture]. United States: Legendary Digital Media.
- Hall, C. & Millard, E. (1994) The means of correct training? Teachers, Foucault and disciplining. *Journal of Education for Teaching: International Research and Pedagogy*, 20(2), 153-160.

- Lester M. L. (Producer & Director). (1990). *Class of 1999* [motion picture]. United States: Lightning Pictures.
- NCTE/IRA, (2006). *Dystopias: definitions and characteristics*. [pdf] Available at: <[http://www.readwritethink.org/files/resources/lesson\\_images/lesson926/DefinitionCharacteristics.pdf](http://www.readwritethink.org/files/resources/lesson_images/lesson926/DefinitionCharacteristics.pdf)>.
- Oliver, P. (2013). *Foucault – Key concepts*. London: Hodder Education.
- Priyadharshini, E. (2019). Anticipating the apocalypse: Monstrous educational futures. *Futures*, 113(1), 1-8.
- Witte, S. & Goodson, T. (2010). “This guy's dead”: Seeking the origins of the dystopian. narrative of the American high school in the popular culture. *The High School Journal*, 94(1), 3-14.

## Education System of Sri Lanka during the Portuguese and the Dutch Period

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### ABSTRACT

*The Education System of the maritime regions in Sri Lanka was highly influenced by the European nations who invaded the island. As a result, the local education system, which was prevailing in the country in Pirivena, gradually declined. From 1505 to 1658, the coastal region of Sri Lanka fell under Portuguese influence, which was later displaced by the Dutch. Hence, the maritime regions of the island were under the rule of the Portuguese and the Dutch influence for nearly three centuries. The objective of this study is to examine the education system implemented in Sri Lanka by both nations and to investigate the impact created by their education policy. This study was conducted in order to identify how the traditional Buddhist Education in Sri Lanka was declined due to colonization and the power of the colonizers. In addition, through this study, how the western culture and traditions were introduced to Sri Lanka will be examined as well. In order to achieve the aforementioned objectives, the methodology used was referring to primary and secondary sources. Both of the aforementioned nations attempted to spread their religious views through their education policy. The first step of establishing these schools was taken by the Jesuits who came in 1602 in hopes of establishing a college in Colombo. The second attempt taken by Jesuits was in Jaffna whereas the third was in Galle. Besides the construction of colleges, they participated in missionary works as well. After the arrival of Jesuits, next to arrive in Sri Lanka were Dominican order and Augustinian order, who started their own Parish schools and monasteries. Dominicans spread their influence especially in the northern part of the island while Augustinians were more concerned about the interior parts of the island. According to Perera (1952), the royal children were educated under the guidance of these priests as well. Mainly their attention to education was focused on reading, writing, and elements of Latin. With respect to the Dutch rule, they have continued the prevailing education system through the Parish schools established by the Portuguese. Secondary education was also delivered through these Parish Schools. Additionally, in order to train the teachers and provide them higher education, the Dutch established "Seminaries" and "normal schools". Taking a step further from the Portuguese education system, the Dutch had sent the students of royal families to universities abroad for higher studies. According to Perniola (1985), the education system of the Dutch was advanced and methodical. Moreover, in the schools named "Viscamir", vocational training was delivered to students in order to prepare them for various occupations. Conclusively, it can be mentioned that the Sri Lankan education system was considerably affected by the changes made by the education policy of the Portuguese and the Dutch rulers.*

**KEYWORDS:** Education Policy, Parish Schools, Seminaries, Sri Lankan Education, Vocational Training

## 1.0 INTRODUCTION

The cornerstone of the former traditional education system in Sri Lanka was "religion"; especially Buddhism, since it was through Buddhist monks that the Kings, Nobilities and even peasants received their education. The purpose of such education was to give the learner an insight on more religious biased life style in accordance with the contemporary social necessities. The ancient kingdoms in Sri Lanka, namely Anuradhapura, Polonnaruwa, Dambadeniya nurtured the Buddhist education system though it was deprecated during the Kotte kingdom in the latter 16<sup>th</sup> Century. The reason behind this drastic change occurred after the invasion of the Maritime Provinces in Sri Lanka, after the arrival of Lorenzo De Alameida in 1505. After this invasion, nearly for 150 years, The Portuguese reigned the maritime provinces of the island, evermore spreading their power and influence. Thereafter, in 1658, the Dutch took over the Maritime Provinces in Sri Lanka. Thus, the education system of the country was considerably influenced from the changes made by the colonizers.

### 1.1 Research Objective

Through this research, the education system implemented in Sri Lanka by the Portuguese and the Dutch will be investigated. In addition, the impact created by their education policy will also be examined, in order to gain a proper insight to the education system in Sri Lanka during the 16<sup>th</sup> and 17<sup>th</sup> centuries.

## 1.2 Rationale of the Study

This study was conducted in order to identify how the traditional Buddhist Education in Sri Lanka was declined due to colonization and the power of the colonizers. In addition, through this study, how the western culture and traditions were introduced to Sri Lanka will be examined as well. The present study will serve as a comprehensive portrayal of Education System of Sri Lanka during the Portuguese and the Dutch Period, in the 16<sup>th</sup> and 17<sup>th</sup> centuries, while providing an insight on the reasons behind the decline of the Buddhist Education in Sri Lanka.

This research will be quite useful for historians as well as education policy makers to gain an in-depth understanding of the changes that were done to Sri Lankan Education System as a result of the colonization. Nevertheless, since the study discusses the impact created by their education policy, the present study will be beneficial to identify the effects of colonization in the education system of Sri Lanka.

## 1.3 Methodology

In order to conduct this research, historical methodology was used. The rationale to use historical methodology was to gather evidence and formulate ideas about the past. Through this methodology, an account of the past is constructed. Thus, primary and secondary sources on the particular era were referred to gather data.

Primary sources used in the present study were the literary texts written by the Portuguese and the Dutch writers during 16<sup>th</sup> and 17<sup>th</sup> century. Several such sources were *True and Exact Description of the Great Island of Ceylon*, written by P. Baldaeus and *Temporal and Spiritual and conquest of Ceylon* written by F. Queyroz. Most of these primary sources were the religious and educational reports written by the priests who were missionaries in Sri Lanka.

In order to fill the gaps found in the referred primary sources, secondary sources on the topic were also referred to gather more data. Some such sources were *Ceylon: The Portuguese era being a history of the island for the period 1505-1658* written by P.E. Pieris and *The Portuguese Missionary in 16<sup>th</sup> and 17<sup>th</sup> Century Ceylon: The Spiritual Conquest* written by C. Gaston Perera.

The collected data through the primary and secondary sources were analyzed based on the period: the Portuguese or the Dutch period. In addition, the collected data were thematically analyzed as well.

## 2.0 THE EDUCATION SYSTEM IN THE PORTUGUESE PERIOD.

During the Portuguese period, the due reverence and the state support which was but the lifelines of Buddhism decreased. Adding to that the Portuguese snatched all most all the ways of income that belonged to the temples completely obliterating the *Pirivena Education* for it was through the aid of temples the *Pirivenas* were maintained. It was the tradition of the Sinhalese kings to donate the ways and means to temples to provide for the continuation of *Pirivena Education*. Nevertheless, King Dharmapala who was more or less a Portuguese ally “donated everything that came from temples and estates for priests just like his forefathers donated to Buddhist temples.” (Queyroz, 1930) (Peiris. E. 1923, 150). The revenues that came from estates were sacrificed for the possible development of colleges in future. As a result of the majority of the maritime population converting to Catholicism once more the foreign influence along with the missionary education gripped those areas greatly reducing g the number of Buddhists. Moreover, the competitive abilities and the education policies of the Portuguese were beyond the reach of indigenous education system.

It is noticeable that there was a significant change in the education systems in Sri Lanka with the arrival of the Jesuit Order in 1602. First, they implemented a primary school, which was but the house that the Jesuit bother of General Don Jeronimo de Azevedo bought which was later enlarged through the purchase of some other neighbouring houses. (Perera, 1952. p.67). In spite this school that mainly consisted of three departments, they conducted Latin classes as well. The Latin schools though however, were especially conducted on behalf of the intelligent young boys. However, they adopted the form of seminaries and focused their principal attention on the students who wished to become priest even if other students too were a part of the school’s community.

Mainly, there were two types of schools implemented by Portuguese, namely, Parish schools and colleges and it was recorded that each parish had a school associated to it. Towards 1610, gradually they included into their course syllabi reading, writing of Portuguese language along with religious studying and singing. Father Francis Xavier who understood some parts of the Sinhalese culture embedded that

knowledge into singing. Further, to those who learnt such subjects, Latin too was taught. (Abayasinghe, 2005. p.198) (Peter, 1952. p. 269). In around 1602, there were three more new courses introduced to the college in Colombo while another school was established in Kammala area along with the ones in Chilaw, Madampe and Malvana. Moreover, they too implemented an orphanage in Mutwal other than the two colleges in Nawagama and Jaffna that were two extent monasteries.

The main teaching technique of the Jesuit order was repeat/know-by-heart. As it was the practice that the *Pirivena Education* adapted Sinhalese had no complication assimilating themselves to this technique. It is probable to think that oral narration was employed as a result of the lack of printed manuscripts. Even though the medium of Jesuit education system was solely Portuguese language, to some extent native languages: Sinhala and Tamil, were used to dictate. Yet, what was more important, is that this education system of Jesuits were inter mingled with religious beliefs.

They emphasized dramas and music in their education system and it was the religious notions that these two aesthetic subjects portrayed nominally religious dramas or psalm. Especially in colleges based in Colombo such dramas were acted out. These dramas of Portuguese, Sinhala or Tamil languages were for the most part didactic dramas. However, this method of adapting dramas and music to facilitate religious learning was employed beyond age constraints. Then, the course syllabi of parish schools focused their attention on reading, writing and religious teachings. What they desired through this was to educate students enough to read and understand the Holy Bible. In the secondary schools, though religious teaching and virtues were much regarded.

The highest section of the colleges were once again to those wish to acquire priesthood. In their course syllabi ethics and Gospel learning and study of doctrines were included. To cater the need of affluence in different languages required in studying and understand various religious materials in these schools Italian was also taught along with the prime languages Portuguese and Latin. Even if the government supported these schools, the power of managing the schools laid on the religious leaders.

After the Jesuits, Dominicans and Augustinians found their path to Sri Lanka as well. The Augustinians convent was based in *Rambukkana* while Dominicans manipulated Jaffna and Galle. (Perera, 1952. p.63). Anyhow, irrespective of the order all missionary schools were free educational institutes.

However, as Perera (2009) states, a great attention was paid by the missionaries to the education of children. Once, Father Simao de Coimbra had mentioned: "We place all our hopes in their children." Thus, it is evident that the missionaries were quite attentive to the education they provided, knowing the effect it will have on the nation and the colonizers. (Perera, 2009: 379)

### 3.0 THE EDUCATION OF THE ROYAL CHILDREN

The missionaries were also the teachers of the royal prince and princesses in Sri Lanka. Especially to the priests who belonged to the Franciscan order this responsibility assigned. This was mainly because of the fame that they gained through excellent and competitive teaching. The price Dharmapala of Kotte received his education from a priest named Juan de Willa de Khonde. Except for that another two princes were educated in a training school under the guidance of a Jesuit priest in Goa. It was recorded that the nephew of the ruler kingdom of Kandy- Karalliyadde Bandara, named Yamasinghe Banadara was sent to Goa to receive education once again form Franciscans.

After the peace offerings with the Portuguese it was the desire of Senerat, the king of Kandy that the Franciscans remain behind to educate his children. Thus Father Francis Negrao lived in the Kandy for about 9 years and tutored Ranasinghe and his siblings Latin, Portuguese and the achievements of prince and princesses. (Perera. 1952 p.65)

There are circumstantial evidence to show the participation of Sinhalese and Tamil princes and princesses in the colleges construed by missionaries emphasizing the connection between the two. One such evidence is Don Philip Nikapitiya Bandara who was the grandson of king Rajasinghe in Sitavaka. The participations of Don Joao, the Prince of Kandy, son of Yamasinha and Don Constantine son of king of Jaffna strengthen the circumstantial evidence. At first, it was in the college of Colombo that they were educated but latterly they received their education in another Franciscan college at the Magi at Bardez. Don Philip can be considered as the first Ceylonese to venture out to Portugal in hopes of receiving education under the well-reputed university, University of Coimbra marking the first-ever western education gained in a foreign country though unfortunately he was not physically alive to truly enter the University for his

Studies. Yet, Don Joao who also went to Portugal for his studies was ordained a priest there, spent his life, and died in Lisbon. (Perera, 1952. p.66)

Not only the Kandyan royal children enrolled themselves in missionary colleges but also quite a large number of royal princes and princesses of the royal family in Jaffna entered such colleges. Philip, Francisco and Bernadine were some royal princes who first went to Franciscan college in Colombo and then went to another Franciscan school in Goa to continue with their higher studies. Isabella and Maria the two daughter of the another ruler of Jaffna followed their studies in Goa and became devoted nuns in the St. Monica Convent. (Peter. 1952. p.268)

To these princesses the Portuguese priests taught reading and writing in Portuguese, mathematics, singing, Latin, Christianity and good customs. As a result of this Rajasinghe the Second of Kandy is considered as an erudite of Portuguese language. According to the religious reports of the Portuguese it is recorded that except for the customary subjects they taught, royal children were also taught the ethics and customs of royalty. Through this, it is evident that the missionaries had attempted to deliver an educational form equivalent to what was received by the royal children in European countries. (Peter. 1952. p.268)

#### **4.0 THE EDUCATIONAL POLICIES OF THE DUTCH**

Following the footsteps of the Portuguese the Dutch too employed missionary education to accomplish their religious purposes and desires. This is apparent through their excellent manipulation of course studies, teaching mechanisms and their policies regarding teachers and students. (Jayawardhana, 2000. p.26) In hindsight, the desire to globalize their religion was the sole content of their education system.

The Dutch gained the power of the Maritime Provinces in Sri Lanka in 1658. Though they stepped foot to the island in 1638 and signed an agreement with the ruler of Kandyan kingdom they could only manage to salvage the Maritime Provinces from the Portuguese rule in 1658. In the provinces under the Dutch rule, the power of military and civil control including the power of religious and educational institutes were on the hands of Governor. Even the power to appoint teachers -the people who were entrusted with the task of popularizing the religion that they worshiped i.e. Protestantism, were under the control of the Governor. The mission of publicizing the religion among general public was carried mainly by Protestants who were given extra wages and allowance to motivate them further to the mission. Even in Dutch period just as in the Portuguese period, the church and the school remained inter-woven.

The main problem that the Dutch encountered after they gain the authority in the Maritime Provinces was that most of the low country people were already the followers of the Roman Catholicism. Even the root cause of the battles that were waged between the Portuguese and the Dutch were chiefly the inconveniences regarding the spanning of the religion. The religious goals of both sides were equivalent to some extent for the Dutch too required to teach the followers of Protestantism in Sri Lanka how to read and write. They too thus executed the method of the Portuguese because they wanted their schools to fulfil the task of the church in then future as well. (Jayawardhana, 2000. p.32)

The schools that were constructed by the Dutch were also named as Parish schools. Even after 1833, this concept of parish school remained in the country for some time. Yet the Dutch parish schools differed from that of Portuguese by some elements. As a result of the establishment of the parish schools not limiting to one particular area but spanning to each and every village of the country Dutch parish schools became more prominent than the ones implemented by Portuguese. Instead of these Parish schools there were around 16 more local schools located in districts such as Colombo, Galle and Jaffna. Towards 1679, the number of schools implemented alongside the number of students enrolled. The main concern of these schools were to give the youngsters of the country a religious biased education. It was enacted in 1679 by the regulation of the Governor De. Hyers that the children who passed the age limit of six must be entered to schools and that failing to do so was considered a crime punishable by law. A fine was collected from the parents who did not send their children to school. Further, the teachers were instructed to attend to classes regularly. (Mathauv, 1969. p.289)

Moreover, to validate the course of teaching a position called Predicant was created. The Predicants were one of the two principal types of priests of the Dutch. When Predicants became priest by acquiring the entire requirements, Krank Bosheker the other type possessed no such requirements. They controlled the churches in which there were no Predicants and other than their regular responsibilities were also in charge preaching the bible and the doctrines to the devotees and conducting the Sunday schools. Just as Predicants, Krank Boshekers learnt the native languages and cultures and employed that knowledge to

popularize their religion. (Baldaeus, 2007. p.14) Some such evidence could be found by the records of Father Baldaeus who was the first of many priests commenced the religious preaching in the district of Jaffna, specifically in Thellippalei, learnt both Tamil and Portuguese language to achieve his task.

Up until the age of 15 students could learn in parish schools. After that they were to come to school twice a week for four more years thus they were compelled to continue schooling for 19 years. What is visible through this speculation is that the students could complete their secondary education in parish schools itself. The number of the parish schools established in Galle and Matara were significantly less than the ones that were constructed in Colombo and similarly their rate efficiency too was considerably low. Further, because of the majority of the people that inhabited these areas were chiefly Buddhists the Dutch faced troubles expanding the parish schools and through that their religion. There were exceptional scenarios where the “scholarchan commison” itself was not given permission to enter the several quarters. Obstructions when teaching and usage of physical violence against “scholarchan commison” were two other malicious behaviours conducted by the people in these districts to prevent the expansion. Due to these impediments, the commission was hesitant to inquire as to the conditions of the parish schools in those areas and owing to that the development was equally diminished. (Mathauv, 1969. p.290)

When the Dutch gained the power in Jaffna there were around 20 Roman Catholic churches built in the area itself and they acquire the right of all twenty churches into their wing. In all most the villages that formed the district of Jaffna a Roman Catholic church stood magnificently and alongside the church, a parish school. Even estates were provided for its requirements and probable expansion. Moreover, as a result of the excellent management of the missionary movement in Jaffna conducted by St. Francis Xavier a well organised Catholic movement was present in the district. Under aforementioned conditions and a highly Catholic environment in 1658, Father Phillipus Baldaeus were commissioned to Jaffna peninsula to widen the spectrum of religious followers of Protestantism. (Baldaeus. 2007. p.12) Just because of the ceaseless toil of Father Phillipus Baldaeus, in 1736 there were 36 schools established in Jaffna with a 963 student count. In spite of those 36, there were schools in Batticaloa and Trincomalee as well. Yet, as a result of the lack of records about the schools in those two districts it is safer to think that the “scholarchan commission” were not highly concerned about these schools in the remote areas.

In the Parish schools of Dutch there were primarily two teachers and the position of the chief instructor was given to the priest who was senior by age. He fulfilled the tasks of the rector of the church as well. Further, they possessed the power to do the notary functions, providing birth certificates, preparing *thombu* and marriage and death registrations. These rectors had a high upbringing and only Protestants were chosen as teachers though their loyalty, devotion to the religion were also regarded. The success of the entire parish schools were on the shoulders of the teachers and specifically the teachers of the “local” parish schools were much respected. Nevertheless, they were not provided with a strict wage and the seminary teachers obtained a larger salary in comparison to the parish schools teachers. At times, the fine that was collected from the students who were unable to come to schools was given to the teachers as their salary. Thus, in a wider scale the conditions of the parish school teachers were not acceptable.

It was through the employing native languages as the principal medium of studies that the Dutch conducted their parish schools. The reason behind this change of language was to impart knowledge effectively and efficiently unto the minds of the younger generation and to popularize the religion through novel mechanisms.

Their parish schools were held throughout the year without specific ends semesters. Other than the Christmas holidays and *poya days* accompanied by New Year holidays and Sundays they students had no vacations that spanned for days’ length. Wednesdays and Saturdays were considered as half-days for it was from 8:00 to 11:00 and 2:00 to 5:00 the schools were conducted. Therefore it is visible that the education system of the Dutch was much organized that that of Portuguese’s. (Jayawardhana, 2000. p.44)

Under the authority of the Dutch special schools as well as private schools were established. For the children of the peasants mixed schools were opened whereas for the children of the workers of the movement and for the Burghers “Nederlandseys” were created. Schools were implemented both in orphanages and in sanctuaries for poor children, named “weskamer” and ‘aremenhighes” respectively.

These schools were provided with the government’s support and donations were also given. After they reached the adulthood, they were directed to follow up vocational trainings that was also provided.

In 1737, there were 4 private schools in spite of the ones that are built in all over the country i.e. two in Galle fort, and another two in Matara fort chaperoned by one “weskamer” in Jaffna. Even though at



first it was prohibited to speak and teach Portuguese language in Dutch schools later the appliance of this rule was lessened. (Mathauv, 1969. p. 289)

For the children of the Europeans reading, writing and arithmetic, singing and geography were taught. Nonetheless, the priest were equally concerned about the education of the girls and they demanded that the young girls start schooling in such a young age to finish their school education by the age of 10. The slaves of the Dutch along with the slaves of the civilians were given education for in 1681 an amount of 200 slaves were recorded receiving their education in a school in Colombo.

The other prominent implementation of the Dutch was the seminary. The first ever seminary constructed in Nallur, Jaffna in the year of 1690 the purpose of which was to train priests, clerks, teachers and language translators. The seminary of Colombo was also built in the same year and its course syllabus was more inclined to the western education system. In this seminary there were primarily two parts namely, higher course and the lower course. Those who followed the higher course were compelled to learn Dutch language and grammatical translations parallel to learning Greek, Latin and Hebrew for Latin was the principal medium of the higher course. Yet native languages too were by special teachers.

Then through “normal schools” which was again under the authority of the Dutch teacher training was commenced. As the headquarters of the chain of schools established by the Dutch, in 1663 school council was created. With the aid of them annual investigations of the schools, generating reports regarding schools to send to Netherland became possible. However it was the on the hands of the Governor that the ultimate power concerning the final decision of reports remained.

## 5.0 CONCLUSION

With regard to the education systems implemented by the Portuguese and the Dutch, it is apparent that both the foreign parties conducted a religion biased education system. What they both desired was to find the easiest, the fastest and the most efficient mechanism to expand the number of devotees of each religion. Therefore, to accomplish that specific mission they exerted a special scheme i.e. establishing missionary since it was much easier to teach the doctrines of each religion to the younger generation than to teach it to the older generation itself. That way, it will be more fruitful.

Due to the heavily coated religious notions through which the Portuguese established their schools, both the expansion and the success of their schools were limited. Yet, the education system of the Dutch was more organized. Hence, the education system of the Dutch followed a strict pre-defined timeline and an order. They too dreamt of spreading their power as well as their religion from the plateaus and the highlands and to the lowlands of the island. At times, they took drastic and violent decisions to save the country from Roman Catholic influence and educational power grip. Unlike Portuguese, the Dutch focused their attention on the elderly people of the island as well, since they intended to find a more loyal and a trustworthy community in Sri Lanka. Moreover, the religion that the Dutch forcefully instilled unto the lives of the general public were to an extent artfully executed by some people into acquiring privileges and fulfilling their personal needs. In spite of all the encumbrances and benefits, because of these educational systems that were enforced by the Portuguese and the Dutch, a large amount of books and dictionaries were translated to both Sinhala and Tamil bringing about illumination to the country.

However, through the implementation of the missionary education introduced by the Portuguese and the Dutch rulers, it is evident that the prevailing Buddhist education in the country at that time significant declined. Therefore, it adversely affected the culture and the long-lasting Buddhist Education in Sri Lanka.

Implications of the further studies can be directed on comparing the modern day education policies with the ancient education policies introduced by the Portuguese and the Dutch rulers. Through the identification of the good case practises of the ancient education policies, they can be implemented in the modern education system while eradicating the bad case practises of the past.

## REFERENCES

- Abayasinghe, T.B.H. (2005). *Parangi Kotte 1594-1612*. Colombo: Stamford Lake Publishers.
- Baldaeus, P. (2007). *True and Exact Description of the Great Island of Ceylon*. (B.N.R. Jayasena, Trans.). Colombo: Sooriya Publishers. (Original work published in 1962)

- Jayawardhana (2000). *Sri Lankawe Pruhthugisi-Landesi Prathipaththi*. Kottawa: Sara Publishers.
- Mathavu, S.A.W. (1969). in *Lankawe Adyapanaya – Siyawasa Prakashanaya*. Colombo: Ministry of Education and Cultural Resources.
- Perera, C.G. (2009). *The Portuguese Missionary in 16<sup>th</sup> and 17<sup>th</sup> Century Ceylon: The Spiritual Conquest*. Sri Lanka: Vijitha Yapa Publishers.
- Perera, S.G. (1962). *Historical Sketches (Ceylon Church History)*. Colombo: The Literature Committee, Colombo Diocesan Union.
- Peter, D. (1969). in *Lankawe Adyapanaya – Siyawasa Prakashanaya*. Colombo: Ministry of Education and Cultural Resources.
- Pieris, P. (1923). *Ceylon: The Portuguese era being a history of the island for the period 1505-1658: P.E. Pieris*. Colombo
- Queyroz. F. (1930). *Temporal and Spiritual and conquest of Ceylon*. (Perera, S.G., Trans.).

# **RELIGIOUS AND MORAL EDUCATION**

## Guru Sebagai Pemudahcara Pembentukan Amalan Bertingkah Laku Moral Di Sekolah: Sudut Pengalaman Pelajar

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### Abstrak

*Pelaksanaan Pendidikan Nilai secara formal dan tidak formal merupakan salah satu usaha membentuk amalan bertingkah laku moral dalam kalangan pelajar di sekolah. Sehubungan dengan itu, kertas ini membincangkan sudut pengalaman pelajar Melayu terhadap peranan guru sebagai pemudahcara pembentukan amalan bertingkah laku moral di sekolah. Reka bentuk penyelidikan kualitatif menggunakan pendekatan kajian kes satu tempat satu kes telah digunakan dalam kajian ini. Perbincangan data ini berasaskan sudut pengalaman oleh lapan orang Pelajar Melayu Tingkatan Empat di salah sebuah sekolah menengah Putrajaya yang dipilih melalui teknik persampelan bertujuan. Perisian ATLAS.ti 7 digunakan untuk menguruskan data dan analisis tematik telah digunakan untuk mengenalpasti tema yang terdapat dalam data temu bual separa berstruktur dan analisis dokumen yang telah diperolehi. Dapatan memberi gambaran bahawa terdapat empat tema utama yang mendasari status guru sebagai pemudahcara dalam persekitaran sosial kemanusiaan di sekolah yang membentuk amalan bertingkah laku moral dalam kalangan pelajar Melayu di sekolah. Dalam konteks pemudahcara ini, guru dikaitkan dengan tema iaitu guru sebagai agen moral, pemupukan nilai murni, suri teladan dan memberi nasihat dari sudut pengalaman pelajar sepanjang persekolahan mereka. Pelbagai peranan yang perlu dimainkan oleh guru di sekolah secara langsung dan tidak langsung bagi memudahcarakan pembentukan amalan bertingkah laku moral pelajar. Hal ini jelas menunjukkan bahawa guru adalah insan yang mencorakkan ke arah pembentukan tingkah laku moral dalam kehidupan seharian pelajar. Pengaruh pemudahcara yang signifikan ini dapat menyuburkan perkembangan moral pelajar di sekolah. Sehubungan dengan itu, profesion perguruan adalah kerjaya yang mulia kerana mereka bukan sahaja membentuk pelajar menjadi manusia yang berilmu malahan mendidik pelajar menjadi insan yang bertanggungjawab mempraktikkan tingkah laku moral sebagai amalan dalam kehidupan seharian. Kesimpulan, guru merupakan pencetus yang mencorak dan membentuk pelajar menjadi modal insan yang berakhlak, beretika dan bermoral dalam kehidupan seharian.*

**KATA KUNCI:** Guru, Pemudahcara, Amalan Bertingkah Laku Moral, Pelajar Melayu, Pendidikan Nilai

### 1.0 PENGENALAN

Pendidikan di Malaysia memberi tumpuan terhadap usaha melahirkan insan yang dapat mempertingkatkan potensi diri secara menyeluruh dan bersepadu dari aspek jasmani, rohani, emosi dan intelek secara tersirat dan tersurat yang termaktub di dalam Falsafah Pendidikan Kebangsaan. Elemen nilai akhlak dan moral merupakan perkara yang penting dan dititik beratkan di dalam dasar pendidikan negara berlandaskan kepada Rukun Negara, Falsafah Pendidikan dan dimantapkan dalam Pelan Pembangunan Pendidikan Malaysia 2013-2015 (2012). Menurut V. Kotaiah (2014) menyatakan bahawa pendidikan di seluruh dunia memainkan peranan untuk memupuk nilai. Sehubungan dengan itu, usaha pemupukan nilai telah diterapkan secara langsung melalui pendidikan formal dan tidak formal dalam sistem persekolahan di Malaysia. Hal ini kerana perkembangan moral kanak-kanak adalah dimensi yang penting dalam pendidikan

(V. Kotaiah, 2014). Usaha tersebut sejajar dengan matlamat bagi keberhasilan usaha pembangunan modal insan yang holistik dan berkualiti bagi menyumbang kemajuan Malaysia di masa hadapan.

Bagi mencapai status negara maju, indeks pembangunan insan secara menyeluruh juga diambil kira dalam menentukan pengiktirafan tersebut. Kualiti pendidikan negara juga merupakan salah satu indikator yang mengukur status kelayakan sesebuah negara maju atau membangun (Sonia Kumari & Doris Padmini, 2011). Kualiti pendidikan bukan bergantung kepada bentuk pencapaian sahaja malahan juga melibatkan kepada pembentukan nilai, akhlak, moral dan etika dalam kalangan pelajar. Semua pihak perlu memainkan peranan secara bersepadu bagi memastikan Malaysia dapat merealisasikan matlamat menjadi negara maju yang mempunyai mentaliti dan moral kelas pertama. Sekolah adalah institusi pendidikan yang signifikan kepada pembentukan nilai, akhlak dan moral pelajar sama ada di peringkat rendah mahupun menengah. Guru adalah individu yang kerap berinteraksi dengan pelajar semasa di sekolah. Guru di sekolah memegang pelbagai tanggungjawab sebagai mendidik pelajar bagi menjadi insan yang berjaya dan berguna di masa hadapan. Abd Ghafar Mahmud (2011) menganggap guru adalah agen perubahan yang paling awal dalam masyarakat berdasarkan peranan mereka dalam mengajar, mendidik dan membimbing secara terancang dalam institusi pendidikan.

Selain daripada mengajar, guru bertindak sebagai agen moral yang berperanan secara langsung dan tidak langsung membangunkan perkembangan nilai murni (Mohamad Khairi, 2013; Mohamad Khairi, Mohd Zailani, Alis & Nurfasihah, 2017) moral (Abdul Rahman, 2018; Maizura, 2015), akhlak (Asmawati, 2009; Mohamad Khairi & Asmawati, 2010; Zakaria Stapa, Ahmad Munawar Ismail & Noranizah Yusof, 2012; Ishak M., Abiddin N. Z., Fakhrudin F. M., 2017) dan sahsiah (Yakcop & Chua, 2017). Menurut Zuraida (2005) guru adalah suri teladan (*role model*) kepada pelajar dalam mengerakkan dan membimbing pelajar untuk bertindak. Perkara ini berlandaskan pada Falsafah Pendidikan Kebangsaan yang menekankan usaha pembentukan nilai akhlak dan moral pelajar perlu diberikan perhatian oleh institusi pendidikan. Oleh hal demikian, jelas guru yang berkualiti merupakan kunci untuk merealisasikan transformasi pendidikan Negara dengan jayanya dalam membentuk nilai akhlak dan moral pelajar seperti yang dihasrat dalam Pelan Pembangunan Pendidikan Malaysia 2013-2025.

## 2.0 PERNYATAAN MASALAH

Profesion perguruan merupakan bidang kerjaya yang mulia dan disanjung oleh masyarakat. Pengiktirafan profesion perguruan sebagai kerjaya yang professional berdasarkan kepada tanggungjawab moral yang dijalankan oleh guru (Abd Rahman, 2018) dan turut dijanjikan sebagai lubuk saham pahala yang berlipat ganda daripada perspektif Agama Islam (Al-Ghazali, 2012). Guru merupakan insan kedua yang terpenting selepas ibu bapa dalam kehidupan seorang pelajar. Ini kerana, pelajar meluangkan masa enam ke tujuh jam setiap hari selama lima hari seminggu bagi mendapatkan pendidikan daripada guru secara formal dan tidak formal di sekolah (Pelan Pembangunan Pendidikan Malaysia, 2013). Peranan dan tanggungjawab seorang guru kepada pelajarnya adalah berat kerana usaha mendidik adalah satu tanggungjawab yang berterusan dan memerlukan keikhlasan hati bagi memastikan kemenjadian pelajar secara holistik. Malahan, guru juga berperanan menghidupkan iklim sekolah sebagai batu loncatan bagi memberi kesan terhadap tingkah laku pelajar (Tan, Rahimah & Zuraini 2015). Bahkan gurulah dianggap sebagai warisan para nabi dalam membentuk dan mengembangkan ilmu pengetahuan kepada pelajar (Abdul Raof, 1998). Penekanan terhadap pembangunan modal insan harus diberi penekanan berkaitan etika dan akhlak supaya kesedaran dalam diri pelajar dan pembentukan sahsiah yang betul dapat dipupuk (Hairuddin, 2013). Hal ini akan menentukan kejayaan sesebuah negara dan bangsa itu bergantung kepada akhlak rakyatnya (Faridah, Tengku, Sarina & Aini, 2006). Hal ini memberi satu pandangan yang utuh bahawa guru adalah individu penting dalam mendidik dan membentuk kemenjadian pelajar yang holistik dari segi ilmu dan juga akhlak serta moral dalam kehidupan mereka.

Namun, kemajuan teknologi di dalam era revolusi industri 4.0 pada masa kini telah mewujudkan cabaran yang lebih kompleks dalam usaha membentuk tingkah laku moral dalam kalangan pelajar di sekolah. Senario ini mewujudkan ruang pencanggahan nilai, konflik, hakisan nilai budaya, akhlak dan moral, sekiranya pelajar tidak menggunakan pemikiran moral dalam membuat justifikasi tentang nilai yang patut diamalkan dalam kehidupan seharian. Ini mewujudkan pendedahan dan penerapan berkaitan pemikiran dan nilai budaya barat yang bertentangan dengan standard norma, budaya dan nilai masyarakat Malaysia secara sedikit demi sedikit tanpa pengguna teknologi digital sedari perkara tersebut. Data daripada kajian menunjukkan bahawa golongan pelajar yang berusia antara 11 hingga 18 tahun lebih kerap

menggunakan internet (Suhaniya & Mohamad Fauzi, 2019). Hal ini mewujudkan kebarangkalian golongan pelajar ini terdedah dan terpengaruh dengan dengan nilai, budaya Barat yang bertentangan dengan nilai masyarakat Malaysia. Penerimaan dan pengamalan nilai budaya Barat oleh sesetengah kelompok pelajar boleh menimbulkan isu dan konflik nilai kepada komuniti dan masyarakat setempat. Senario ini mewujudkan pertembungan nilai moral yang diajar di sekolah dengan nilai moral yang dipegang oleh pelajar yang terpengaruh dengan nilai budaya Barat. Suatu ketika dahulu, penyebaran budaya kuning menular di kalangan remaja telah menjadi isu yang serius di sekolah. Oleh hal demikian, guru perlu memainkan peranan dalam mendidik dan membentuk pelajar, walaupun ada segelintir pelajar yang sukar menerima teguran guru secara positif dan terbuka. Tidak dinafikan terdapat juga pelajar yang sememangnya dahagakan teguran dan didikan guru dalam mendidik akhlak dan moral mereka dalam kehidupan seharian. Namun, apapun reaksi pelajar dan ibu bapa terhadap cara didikan yang digunakan oleh guru, hal ini tetap menjadi satu tanggungjawab moral yang harus dipikul oleh individu yang terlibat dalam profesion keguruan.

Guru merupakan insan yang terpenting selepas ibu bapa kerana mereka merupakan arkitek yang mencorak, mendidik dan membentuk anak didik mereka berjaya dalam pelajaran serta mempraktikkan nilai keperibadian mulia dan bertingkah laku moral dalam kehidupan seharian. Sekolah dan guru merupakan tempat dan individu kedua yang mempengaruhi perkembangan moral kanak-kanak (V. Kotaiah, 2014). Guru merupakan salah satu pemudahcara yang mempunyai pengaruh dalam membentuk amalan bertingkah laku moral pelajar dalam kehidupan seharian (Maizura, 2015). Hal ini juga ditekankan oleh Syahrudin Azan (2015) bahawa perapatan antara guru dengan pelajar memberikan kesan terhadap tingkah laku pelajar. Guru seharusnya memotivasikan pelajar untuk terlibat secara langsung di sekolah serta dapat mengurangkan penglibatan murid dalam aktiviti yang merugikan diri pelajar sendiri. Ini jelas memberi gambaran bahawa peranan guru secara langsung dan tidak langsung mendidik pelajar ke arah pembentukan amalan bertingkah laku moral yang lebih baik. Justeru itu, kajian ini penyelidikan kualitatif kajian kes dijalankan bagi memahami sudut pengalaman pelajar terhadap peranan guru dalam pembentukan amalan bertingkah laku moral dalam kehidupan seharian mereka.

## **2.1 Objektif kajian**

Secara khususnya, objektif kajian ini adalah untuk:

1. Meneroka peranan guru dalam pembentukan amalan bertingkah laku moral daripada sudut pengalaman pelajar Melayu.

## **2.2 Persoalan Kajian**

1. Apakah peranan guru dalam pembentukan amalan bertingkah laku moral daripada sudut pengalaman pelajar Melayu?

## **3.0 TINJAUAN LITERATURE**

Mutakhir ini, sistem pendidikan Malaysia secara signifikan mendokong usaha melahirkan insan yang berkualiti yang dapat mengembang potensi diri secara holistik dari aspek jasmani, emosi, rohani dan intelektual seiring dengan memenuhi keperluan zaman revolusi industri. Usaha ini dimantapkan dalam Pelan Pembangunan Pendidikan Malaysia yang meletakkan guru sebagai agen yang mengerakkan dasar pendidikan bagi memberi peluang sama rata kepada semua pelajar mendapatkan pendidikan yang berkualiti di Malaysia (PPPM, 2012). Sejajar dengan itu, usaha secara menyeluruh perlu diberikan bukan sahaja kepada pembangunan potensi dan akademik malahan juga menumpukan kepada pembangunan nilai etika, kerohanian, akhlak dan moral dalam kalangan pelajar. Hal ini turut diperkatakan oleh V. Kotaiah, (2014) bahawa pendidikan merupakan usaha yang dapat membangunkan generasi di masa hadapan kerana pendidikan memainkan peranan dalam memupuk nilai-nilai yang murni dalam kehidupan pelajar. Pendidikan merupakan media utama yang akan menentukan kerjayaan sesebuah negara di masa hadapan.

Di sebalik tadbir dalam sistem pendidikan, guru adalah insan yang penting melaksanakan segala dasar pendidikan yang telah ditetapkan oleh negara bagi memastikan kerjayaan proses mendidik anak bangsa. Kehebatan guru bukan terletak pada kategori sekolah mereka bertugas namun bergantung kepada usaha bersungguh-sungguh guru menjalankan tanggungjawab mereka dalam mendidik anak bangsa Malaysia. Perkara ini ditegaskan oleh Mohd Yusof Othman et al. (2011) bahawa guru merupakan faktor yang lebih berkesan dalam membentuk akhlak pelajar. Malahan tanggungjawab guru seperti Pendidikan

Islam tidak terhad kepada tugas hakiki di sekolah malahan gelaran ustaz dan ustazah tersebut juga bertindak sebagai pendakwah (Ab. Halim Tamuri, 2012; Ahmad Kilani Mohamed, 2005; Asmawati Suhid, 2005). Dapatan terkini menunjukkan bahawa kedudukan guru Pendidikan Islam dari sudut pandangan masyarakat adalah signifikan kerana mereka bertindak sebagai agen perubahan yang bukan sahaja bertugas mendidik pelajar di sekolah bahkan bertanggungjawab untuk menyebarkan ilmu kepada masyarakat, membentuk sahsiah bersesuaian dengan norma dan nilai masyarakat, membentuk masyarakat penyayang, menjadi suri teladan, selain memberi perkhidmatan kepada masyarakat setempat. (Ishak M., Abiddin N. Z., Fakhruddin F. M., 2017). Jelas menunjukkan bahawa peranan guru sebagai pemudahcara pembentukan nilai, sahsiah, dan perlakuan seseorang pelajar dalam kehidupan mereka.

### 3.1 Teori Asas Kajian

Kajian ini menggunakan dua teori sebagai asas kajian iaitu teori ekologi perkembangan manusia Brofenbrenner dan teori pembelajaran sosial bagi memahami fenomena kajian ini. Kedua-dua teori ini memperlihatkan peranan guru dari aspek sosiologi dan psikologi sebagai pemudahcara pembentukan amalan bertingkah laku moral dalam kehidupan seharian. Teori ekologi Bronfenbrenner diperkenalkan oleh Urie Bronfenbrenner yang mengaitkan perkembangan moral berkaitan interaksi antara diri individu dengan persekitarannya menyumbang kepada perkembangan moral kanak-kanak mahupun individu. Terdapat lima sistem persekitaran yang terdapat dalam teori ini iaitu mikrosistem, mesosistem, ekosistem, makrosistem dan kronosistem. Intipati teori ini menerangkan interaksi diri dengan persekitaran yang melibatkan individu, pengalaman dan peristiwa yang berlaku menyumbang kepada perkembangan individu (Bronfenbrenner, 1976). Dalam teori ini, lapisan mikrosistem dan mesosistem adalah lapisan yang paling berkaitan dalam konteks kajian ini. Mikrosistem merupakan persekitaran yang mana individu banyak menghabiskan masa untuk berinteraksi secara bersemuka dalam kehidupan sehariannya. Keluarga, rakan sebaya, guru dan jiran tertangga dikatakan bertindak sebagai pemudahcara yang merangsang perkembangan moral individu termasuklah juga tingkah laku moral. Dalam persekitaran mikrosistem ini, individu iaitu kanak-kanak dilihat sebagai seorang yang aktif dalam menerima pengaruh daripada persekitaran ini (Bronfenbrenner, 1979). Oleh hal demikian, guru adalah individu yang kerap diperhatikan oleh pelajar sepanjang sesi persekolahan. Segala pertuturan, tingkah laku, penampilan, personaliti dan sebagainya secara positif ataupun negatif menjadi perkara utama yang diperhatikan oleh pelajar. Secara tidak langsung pemerhatian tersebut memberi ruang kepada pelajar untuk menilai sama ada perkara tersebut patut diamalkan mahupun tidak.

Seterusnya persekitaran mesosistem merupakan satu lapisan yang mewujudkan interaksi dan perhubungan antara pemudahcara-pemudahcara dalam mikrosistem tersebut. Interaksi ini merupakan hubungan antara guru dengan orang tua, pengalaman sekolah dengan pengalaman keluarga dan pengalaman bersama dengan kelompok teman sebaya. Sebagai contohnya hubungan ibu bapa dengan guru, ibu bapa dengan rakan, guru dengan rakan, antara rakan, hubungan antara pengalaman sekolah dengan pengalaman keluarga, pengalaman sekolah dengan pengalaman rakan sebaya (Bronfenbrenner, 1979). Hal ini menunjukkan bahawa lapisan mikrosistem adalah lapisan yang berkait rapat dengan perkembangan moral kanak-kanak di rumah, di sekolah dan dalam masyarakat. Jelas di sini guru merupakan pemudahcara yang berinteraksi secara langsung menyumbang kepada perkembangan moral dari aspek pemikiran, perasaan mahupun perlakuan. Teori ini melihat bahawa persekitaran di sekeliling individu terutamanya kanak-kanak dirangsang oleh pemudahcara persekitaran dan interaksi diri dengan persekitaran daripada institusi kekeluargaan, sekolah, masyarakat dan persahabatan membantu memperkembangkan moral individu khususnya bertingkah laku moral kerana mempunyai individu pelbagai latar belakang dan pengalaman hidup (Vishalache, 2009). Teori ini membantu menerangkan pemudahcara guru sebagai individu yang berperanan membentuk perkembangan pembentukan tingkah laku moral dalam kalangan pelajar.

Teori kedua yang menjadi asas kajian ini ialah teori pembelajaran sosial telah diperkenalkan oleh Albert Bandura. Intipati teori ini adalah melihat kepada proses pembelajaran individu dengan pengalaman hidup yang dilalui dari aspek psikologi dan sosiologi iaitu berkait rapat dengan diri sendiri dan persekitaran saling berinteraksi satu sama lain melalui suri teladan (*role model*) (Bandura, 1963). Hal ini demikian kerana manusia merupakan agen perubahan yang mempunyai daya rangsangan pemikiran yang boleh menggerakkan proses secara simbolik serta berupaya membuat peraturan pilihannya secara sendiri namun seialiran dengan usaha memahami budaya alam sekelilingnya mengikut norma masyarakat (Sieber, 1980). Teori ini mendapati bahawa kanak-kanak membentuk tingkah laku yang diinginkan melalui interaksi peneguhan positif dan negatif serta melalui suri teladan yang ditonjolkan oleh individu yang berada di

sekeliling yang berkaitan pengalaman hidup mereka termasuk guru (Bandura & Walters, 1963). Secara pengiraan asas setiap pelajar menghabiskan masa secara putara antara enam atau tujuh jam di sekolah dan secara tidak langsung proses interaksi berlaku antara pelajar dan guru. Oleh hal demikian, guru adalah individu yang banyak berhubung dengan pelajar secara langsung dan tidak langsung di sekolah. Othman (1997) menerangkan bahawa kelakuan manusia saling bertindak secara berterusan antara kognitif, kelakuan dan agen penentu persekitaran. Teori pembelajaran sosial memperakui bahawa kebanyakan kelakuan manusia dipelajari menerusi interaksi pemerhatian terhadap suri teladan atau percontohan dan peneguhan yang diterima (Bandura, 1986; Eisenberg & Mussen, 1989). Secara ringkasnya, kedua-dua teori ini dapat membantu menerangkan tentang peranan guru sebagai pemudahcara dalam pembentukan amalan bertingkah laku moral dalam kehidupan seharian dalam kajian ini.

#### 4.0 METODOLOGI KAJIAN

Kajian ini menggunakan reka bentuk penyelidikan kualitatif, pendekatan kajian kes iaitu satu kes satu lokasi yang melibatkan seramai lapan orang peserta kajian. Peserta kajian merupakan pelajar yang berusia 16 tahun yang bersekolah di salah sebuah sekolah menengah Wilayah Persekutuan Putrajaya. Terdapat dua kaedah pengumpulan data iaitu temu bual separa berstruktur dan analisis dokumen. Pengkaji menggunakan bantuan perisian ATLAS.ti.7 bagi menyusun pelbagai data, selepas itu data dianalisis secara manual dengan kaedah tematik. Seramai lapan orang pelajar Melayu telah dipilih melalui persampelan bertujuan berdasarkan kepada kriteria yang telah ditetapkan. Antara ciri-ciri kriteria yang ditetapkan adalah mempunyai kesediaan dan kesanggupan untuk berkongsi pengalaman berkaitan guru sebagai pemudahcara membentuk amalan bertingkah laku moral dalam kehidupan sehariannya secara jujur dan terbuka semasa temu bual dan dalam penulisan jurnal sendiri. Selain itu, mereka secara sukarela terlibat dalam kajian ini selepas mendapat kebenaran ibu bapa dan pihak sekolah. Peserta kajian ini dimaklumkan tentang tujuan, prosedur, hak dan etika dalam penyelidikan ini kajian sebelum peserta kajian membuat keputusan untuk terlibat dalam kajian ini atau sebaliknya.

Pemilihan lokasi sekolah menengah kebangsaan adalah berdasarkan kepada kriteria pemilihan tempat, seperti sifat dan tujuan kajian, kemudahan tempat, kemasukan dan kebenaran, peluang dan saiz sekolah (Spradley 1980 & Jorgenson 1989). Secara ringkasnya, asas pemilihan lokasi kajian adalah berdasarkan kepada kesanggupan, kesediaan memberi kerjasama peserta kajian dan kebenaran yang diberikan oleh pihak sekolah. Selain itu, Yin (2009) menyatakan bahawa pengumpulan data seharusnya dilakukan di lokasi yang senang dimasuki, tidak kompleks setelah memperolehi kebenaran. Pada peringkat awal kajian dilaksanakan, penerimaan pihak sekolah dan peserta kajian terhadap kehadiran pengkaji adalah baik sehinggalah tamat pengumpulan data dalam kajian ini. Usaha membina *rappor*t antara penyelidik dengan peserta kajian bermula dua bulan sebelum proses pengumpulan data bermula secara formal. Penyelidik mengekalkan *rappor*t dengan semua peserta kajian secara saksama dan melibatkan semua peringkat penting bagi memastikan wujud sikap positif dan penerimaan yang berterusan antara pengkaji dengan peserta kajian dan pihak sekolah.

Justifikasi pemilihan lokasi tersebut adalah kerana majoriti pelajar Melayu, kedua, sekolah menengah di Wilayah Persekutuan Putrajaya mempunyai kesediaan yang lebih tinggi dan lebih bersifat terbuka untuk terlibat dalam kajian ini. Ketiga, pelajar di sekolah di lokasi ini lebih terbuka untuk terlibat dalam kajian ini. Skop kajian ini hanya melibatkan lingkungan maklumat yang diterima secara komunikasi lisan dan bertulis yang dihasilkan dalam jurnal sendiri oleh peserta kajian. Peserta kajian menulis tentang pengalaman mereka berkaitan sejauhmana guru mereka membentuk amalan bertingkah laku moral dalam kehidupan mereka. Batasan kajian ini juga bergantung terhadap sejauhmana maklumat yang diberikan secara lisan dan bertulis secara jujur dan benar. Kajian ini menekankan etika dalam menjalankan penyelidikan dan mengekalkan etika kerahsiaan identiti sebenar peserta kajian. Pengesahan pakar dan audit trail dilakukan sebagai sebahagian daripada strategi menentukan kesahan dan kebolehpercayaan dalam kajian ini.

#### 5.0 DAPATAN DAN PERBINCANGAN KAJIAN

Dapatan kajian ini, hasil analisis tematik bersumber data yang telah diperolehi daripada lapan orang peserta kajian. Dapatan kajian ini dapat dirumuskan mengikut item-item seperti berikut:



### 5.1 Profil Peserta Kajian

Kelapan-lapan peserta kajian ini datang daripada pelbagai latar belakang keluarga dan status sosio ekonomi. Majoriti peserta kajian merupakan anak kakitangan kerajaan yang bekerja di sekitar Wilayah Persekutuan Putrajaya. Persamaan kelapan-lapan peserta kajian ini adalah mereka dikategorikan sebagai pelajar yang bermoral di kalangan guru, pelajar lain dan ibu bapa mereka. Mereka sentiasa mempraktikkan perlakuan bermoral di kawasan sekolah dan di luar sekolah. Mereka juga bergiat aktif dalam pelbagai aktiviti kokurikulum di sekolah. Majoriti peserta kajian ini cemerlang dalam pencapaian akademik.

Jadual 1: Profil Peserta Kajian

Peserta	Jantina	Pencapaian Akademik
PK1	Perempuan	Cemerlang
PK2	Lelaki	Sederhana
PK3	Perempuan	Sangat Cemerlang
PK4	Lelaki	Sederhana
PK5	Perempuan	Cemerlang
PK6	Lelaki	Sangat Cemerlang
PK7	Lelaki	Sederhana
PK8	Perempuan	Sangat Cemerlang

### 5.2 Tema Pemudahcara: Guru Agen Pemudahcara Dalam Persekitaran Sosial Kemanusiaan

Dapatan kajian memperihankan bahawa kesemua peserta kajian mengaitkan guru, ustazah dan kaunselor sebagai pemudahcara persekitaran sosial berbentuk kemanusiaan di sekolah sebagai pembentuk amalan bertingkah laku moral dalam kehidupan seharian mereka. Pemudahcara merujuk sebarang komponen atau perkara yang dikaitkan oleh peserta kajian sebagai sumber yang merangsang, menekankan dan mempengaruhi (Norzihani, 2014) pembentukan amalan bertingkah laku moral mereka. Manakala, persekitaran sosial berbentuk kemanusiaan merujuk kepada individu yang berada dalam persekitaran sosial peserta kajian, yang berperanan memberi penekanan, merangsang dan menggalakkan ke arah membentuk amalan bertingkah laku moral dalam kehidupan seharian.

Individu yang berada di dalam persekitaran sosial berbentuk kemanusiaan di sekolah terdiri sebagai guru, ustazah, kaunselor yang berada di sekolah. Pemudahcara ini mempunyai persamaan dengan teori pembelajaran sosial yang menekankan tentang persekitaran sosial berbentuk kemanusiaan (Bandura, 1977) dan teori ekologi yang melihat peranan dan interaksi guru dengan individu sebagai pemudahcara membentuk amalan bertingkah laku moral (Brofenbenner 1979). Selain itu, dapatan kajian ini juga berpadanan dengan kajian lepas yang dijalankan oleh Zakaria, Ahmad Munawar dan Noranizah (2012) menyatakan bahawa pengaruh guru salah satu pengaruh yang diterima oleh seseorang semasa menjalani proses kehidupan mereka sebagai pemudahcara di bawah persekitaran sosial berbentuk kemanusiaan.

Dapatan kajian memberi gambaran bahawa guru sebagai pemudahcara dalam membentuk amalan bertingkah laku moral dalam kalangan peserta kajian. Peserta kajian mengakui bahawa guru, ustazah dan kaunselor menjadi pemudahcara di sekolah untuk mereka membentuk amalan bertingkah laku moral dalam kehidupan seharian mereka. SK1 menegaskan bahawa ustazah di sekolah rendah sebagai pemudahcara kepada dirinya untuk membentuk amalan bertingkah laku moral khususnya dalam mengamalkan tuntutan dalam ajaran Islam iaitu tolong-menolong dan hormat-menghormati orang lain. Berikut ialah pernyataan daripada SK1 iaitu:

#### 5.2.1 Sub Tema 1: Guru Sebagai Agen Moral

Agen moral bermaksud guru berfungsi sebagai individu mampu mengamalkan tingkah laku moral dan pada masa yang sama mereka menjadi perangsang kepada individu lain untuk mempraktikkan amalan bertingkah laku moral dalam kehidupan seharian.

“...Semua perkara yang baik yang diajar oleh Ustazah. Ditegur oleh ustazah saya di sekolah rendah dulu, sampai sekarang saya tahu tentang apa yang dilakukan oleh seorang muslim, tolong-menolong dan hormat-menghormati...sampai sekarang saya ingat. Saya mula nak berubah” (PMC/PSM/UST/P2/SK1).

SK7 menegaskan bahawa gurunya menjadi pemudahcara kepada dirinya untuk membentuk amalan bertingkah laku moral khususnya hormat-menghormati bermasyarakat, beradab dan bersyukur. Perkara ini disokong melalui petikan daripada SK7:

“...Guru saya yang mengajar saya untuk menghormati mereka, menghormati orang lain atau benda lain dan menghormati diri sendiri...mengajar saya untuk menghormati masyarakat lain dan beradab ketika berhubung dengan mereka...sentiasa memberi tunjuk ajar untuk terima seandanya dengan bersyukur” (PMC/PSM/GR/P2/SK7).

Kelapan-lapan orang peserta kajian juga menyatakan bahawa guru sebagai agen yang menyebarkan kebaikan yang menjadi perangsang kepada mereka membentuk amalan bertingkah laku moral.

### 5.2.2 Sub Tema 2: Guru Sebagai Suri Teladan (*Role Model*)

Selain itu, SK1 juga mengaitkan peranan kaunselor di sekolahnya sebagai penyumbang penting dalam membentuk amalan bertingkah laku moral dirinya khususnya tolong-menolong. SK1 menyatakan hal ini di dalam petikan di bawah:

“...Saya suka tengok kaunselor macam kaunselor sekolah ni. Bila saya tengok cara kaunselor menolong orang membuatkan saya teringin nak jadi macam tu iaitu tolong memberi nasihat kat orang”(PMC/PSM/KSL/P2/SK1).

Selain itu, SK1 menjelaskan kaunselor di sekolahnya juga menjadi salah satu pemudahcara dalam membentuk amalan bertingkah laku moral seperti baik hati melalui sikap yang dipamerkan kepada murid di sekolah. SK1 juga dikenali dalam kalangan rakan-rakannya sebagai pendengar yang baik dan sentiasa membantu rakan-rakan yang mempunyai masalah peribadi dan masalah berkaitan sebarang perkara. SK1 dikenali sebagai kaunselor dalam kalangan rakan-rakannya. Sekiranya mereka mempunyai masalah, SK1 ialah orang pertama yang dicari untuk mendapatkan pandangan dan berkongsi masalah mereka.

### 5.2.3 Sub Tema 3: Guru Pemupuk Nilai Murni

Guru sebagai agen pemupuk nilai murni bermaksud guru menonjolkan, menerapkan dan menerangkan tentang kepentingan nilai murni kepada pelajar secara langsung dan tidak langsung. Kelapan-lapan orang peserta kajian juga menegaskan bahawa guru sebagai individu yang memberikan perangsang kepada mereka membentuk amalan bertingkah laku moral. SK1 mengaitkan guru di sekolahnya banyak menerapkan kepentingan amalan kasih sayang, hemah tinggi, bersyukur dan tolong-menolong dalam dirinya. Misalnya berikut ialah petikan daripada SK1:

“...Guru yang banyak menerapkan kepentingan amalan kasih sayang...menerapkan nilai hemah tinggi dalam dirinya semasa di sekolah...memberitahu tentang kepentingan bersyukur dalam kehidupan...membantu saya dalam mendalami nilai tolong-menolong” (PMC/PSM/GR/P2/SK1).

SK2 menyatakan bahawa guru menjadi pemudahcara yang mendorong kepada dirinya untuk membentuk amalan bertingkah laku moral khususnya berdisiplin, hemah tinggi, kerajinan, tolong-menolong dan bertanggungjawab. Selain itu, SK2 menyatakan bahawa guru sebagai pemudahcara kepada dirinya dalam membentuk amalan bertingkah laku moral khususnya melaksanakan tanggungjawab yang diberikan oleh mereka di sekolah. Berikut ialah pernyataan yang menunjukkan guru sebagai pemudahcara kepada dirinya iaitu:

“...Guru selalu mengingatkan tentang kepentingan mengamalkan disiplin dalam diri...menekankan tentang kepentingan mengamalkan tingkah laku semangat bermasyarakat dalam kehidupan...mengajar tentang nilai berkaitan tingkah laku moral hemah tinggi...selalu menunjukkan sifat kerajinan dalam dirinya dan memberi kerja sekolah kepada saya bagi memastikan saya mempunyai sifat kerajinan...sentiasa menerapkan nilai tolong-menolong dalam kehidupan seharian” (PMC/PSM/GR/P2/SK2).

Berdasarkan pengalaman kelapan-lapan peserta kajian menunjukkan bahawa guru sebagai pemupuk nilai dalam kehidupan seharian mereka. Sama ada guru di sekolah menengah mahupun sekolah rendah.

### 5.2.4 Sub Tema 4: Guru menasihati

Tema ini bermaksud bahawa guru menggunakan kemahiran komunikasi verbal dengan memberi nasihat yang memberi peringatan kepada pelajar tentang tindakan yang sepatutnya dilakukan dan

dilakukan dalam kehidupan sehari-hari. SK3 menegaskan bahwa amalan bertingkah laku moral khususnya bekerjasama selalu diterapkan oleh guru mereka dalam aktivitas di dalam bilik darjah. Berikut ialah petikan daripada SK3: iaitu "...Guru selalu jelaskan sekarang ni umur kelompok remaja macam saya sangat berisiko tinggi untuk terlibat dengan tingkah laku tidak bermoral iaitu jenayah" (PMC/PSM/GR/P2/SK3).

Oleh demikian, SK3 sentiasa berwaspada supaya tidak sesekali terjebak dengan amalan tingkah laku tidak bermoral. SK3 mempunyai hubungan yang rapat dengan guru di sekolahnya. SK3 selalu meluahkan masa untuk bertanya khabar guru yang rapat dengannya. Begitu juga dengan SK6 yang mengakui bahawa guru sebagai pemudahcara membentuk amalan bertingkah laku moral khususnya tolong-menolong, baik hati dan hormat-menghormati. Berikut ialah pernyataan yang menggambarkan guru sebagai pemudahcara yang berkaitan dalam membentuk amalan bertingkah laku moral SK6:

"...Guru di sekolah membantu saya mendalami tolong-menolong...sering mengingatkan saya untuk amalkan hormat-menghormati...selalu mengingatkan saya tentang nilai baik hati" (PMC/PSM/GR/P2/SK6).

Seterusnya, SK2 dan SK5 bersependapat bahawa guru sebagai pemudahcara membentuk amalan bertingkah laku moral dengan memberi teguran dan mengingatkan tentang kebebasan dalam pergaulan perlu dijaga dengan sebaiknya. Dalam kajian ini, jelas bahawa guru berperanan sebagai pemudahcara penting yang menjadi perangsang pembentukan amalan bertingkah laku moral dalam kalangan peserta kajian dalam kehidupan sehari-hari mereka.

## 6.0 PERBINCANGAN DAPATAN KAJIAN

Dapatan kajian ini memberi gambaran bahawa kelapan-lapan peserta kajian memperihalkan bahawa guru berperanan sebagai agen pemudahcara yang bertindak agen moral, pemupukan nilai murni, suri teladan (*role model*), memberi nasihat dalam membentuk amalan bertingkah laku moral melalui nilai hemah tinggi, kasih sayang, berdisiplin, baik hati, tolong-menolong, hormat-menghormati, bersyukur, bertanggungjawab dan bekerjasama melalui pengalaman mereka berada di sekolah. Namun, bagi pengalaman SK3 dan SK5 mendapati bahawa guru berperanan sebagai pemudahcara amalan bertingkah laku moral khusus amalan bekerjasama kepada mereka. Data empirikal daripada kajian ini memperkukuhkan gambaran bahawa guru sebagai agen pemudahcara pembentukan amalan bertingkah laku moral khususnya dalam nilai tertentu dalam kehidupan sehari-hari.

Penerapan nilai penting bagi ahli masyarakat, ini kerana individu dapat menerima idea dan norma yang diamalkan dalam sesebuah masyarakat (V. Kotaiah, 2014). Umumnya, kesemua peserta kajian ini mempunyai hubungan yang sangat rapat dengan guru mereka sama ada guru mata pelajaran mahupun guru kelas. Dapatan kajian ini bertepatan dengan penjelasan oleh Asmawati, Rahil dan Abdul Rahman (2001) menyatakan bahawa guru merupakan pemudahcara terpenting dalam membentuk persepsi dan pemahaman pelajar tentang moral. Hal ini demikian kerana guru merupakan individu yang paling kerap berinteraksi dengan murid secara langsung dan tidak langsung (Mohamad Khairi & Asmawati, 2010) serta hubungan moral yang paling kuat adalah hubungan antara guru dengan pelajar yang didik (Clark, 1990). Berdasarkan perbincangan di atas menunjukkan pengiktirafan pelajar berdasarkan pengalaman mereka bahawa guru adalah agen pemudahcara terhadap pembentukan amalan bertingkah laku moral dalam kehidupan sehari-hari.

Dapatan kajian yang diperolehi ini adalah seiring dengan dua teori asas yang digunakan dalam kajian ini bagi menerangkan peranan guru sebagai pemudahcara pembentukan amalan bertingkah laku moral. Guru sebagai agen moral, pemupukan nilai murni, menjadi suri teladan dan memberi nasihat adalah sememangnya menunjukkan peranan guru ini berada dalam lingkungan mikrosistem dan mesosistem yang mana peranan guru dan bentuk interaksi guru dengan pelajar secara langsung dan tidak langsung memudahcara kepada pembentukan amalan bertingkah laku moral pelajar dalam kehidupan sehari-hari (Brofenbrenner, 1979). Pelajar dan guru tidak boleh dipisahkan kerana sekolah merupakan tempat kedua yang mempengaruhi perkembangan moral pelajar. Segala pengalaman pelajar yang dilalui di sekolah secara positif dan negatif menyumbang kepada perkembangan moral pelajar (Bandura, 1977; V. Kotaiah, 2014). Selain itu, dapatan kajian ini bertepatan dengan teori pembelajaran sosial yang mana guru menjadi suri teladan dalam menonjolkan nilai murni dan moral kepada pelajar. Guru juga menonjolkan elemen penguhan yang positif mampu menggalakkan pembentukan amalan bertingkah laku moral dalam kehidupan sehari-hari.

## 7.0 IMPLIKASI KAJIAN DAN KESIMPULAN

Pengorbanan seorang guru pada pelajar tidak dapat dibalas dengan ucapan terima kasih, jasa mereka adalah besar kepada pelajar mahupun negara. Mereka sanggup berkorban masa dan tenaga demi ingin melihat masa depan pelajar mereka lebih berjaya dan cemerlang. Guru merupakan insan terpilih yang terlibat dalam bidang profesion ini bagi membantu negara membangunkan generasi negara pada masa kini. Terdapat beberapa implikasi kajian ialah kualiti guru perlu dimurnikan dari segi personaliti, perwatakan dan penghayatan nilai berkaitan amalan bertingkah laku moral dalam kehidupan seharian. Hal ini kerana nilai akhlak, sahsiah dan moral yang ditonjolkan oleh guru mempengaruhi perkembangan moral dan tingkah laku moral pelajar secara tidak langsung. Setiap guru perlu lengkapi ilmu semasa menjalani pendidikan perguruan berkaitan pengetahuan asas tentang pendidikan moral dan pendidikan nilai secara formal dan tidak formal sebagai persediaan dalam pengajian sebelum menjadi guru di sekolah. Hal ini penting kerana peranan membentuk tingkah laku bermoral adalah tanggungjawab semua guru walaupun mereka tidak mengajar mata pelajaran Pendidikan Moral secara formal. Gelaran guru adalah gelaran bersama tanggungjawab moral yang mana tidak boleh dinafikan bahawa agenda moral yang perlu dimainkan selagi mereka berada di dalam profesion ini. Pihak ibu bapa perlu memberikan hak kepada guru mendidik pelajar dengan memberi 100% automoni bagi memastikan pelajar yang dilahirkan bukan sahaja cemerlang dari segi akademik malahan juga terpuji dari segi akhlak dan moralnya. Ini kerana pendidikan adalah proses memanusiakan manusia yang memerlukan kepercayaan daripada ibu bapa dan pihak sekolah terhadap keupayaan guru menjalankan tanggungjawab mendidik dengan keikhlasan sepenuh jiwa dan raga mereka.

Pada asasnya perwatakan, nilai dan tingkah laku yang ditonjolkan oleh guru di sekolah dan luar sekolah merupakan sebahagian proses pemupukan nilai secara tidak langsung yang memberi pengaruh besar kepada pembentukan amalan bertingkah laku moral pelajar dalam kehidupan seharian mereka. Hal ini jelas, guru berperanan sebagai suri teladan kepada semua pelajar di sekolah. Tanpa guru sedari pengaruh ini meresap melalui pemerhatian oleh pelajar secara berulang-ulang yang akan membentuk amalan bertingkah laku moral pelajar. Peranan guru mendidik pelajar secara tersurat dan tersirat adalah penting bagi memastikan proses penyuburan, pengukuhan dan pemurnian kepada pembinaan ilmu pengetahuan dan perwatakan yang baik bagi menjadi seorang yang berjaya dalam kehidupan seharian secara holistik. Sehubungan dengan itu, jasa dan pengorbanan seorang guru kepada pelajarnya adalah besar yang mana tidak mampu dibalas dengan ucapan terima kasih. Guru adalah wira pendidikan negara kerana telah melahirkan generasi Malaysia yang berilmu dan bermoral untuk Malaysia. Justeru itu, pihak pentadbir dan guru perlu mengembeling tenaga dalam merangka strategi yang lebih utuh bagi memastikan mereka dapat memantapkan pembangunan sahsiah, nilai, akhlak dan moral murid mereka di sekolah. Pendidikan sebenar adalah pendidikan yang memanusiakan manusia bagi membina tamadun sesebuah negara. Ini kerana Individu dapat membangunkan tingkah laku moral hanya apabila memahami apa yang baik dan jahat, apa yang betul dan apa yang salah (V. Kotaiah, 2014) dengan guru bertindak sebagai agen pemudahcara di sekolah. Secara tidak langsung guru menjadi duta masyarakat dengan memperkembangkan pemahaman amalan bertingkah laku moral yang mana patut dan baik diamalkan bersesuaian dengan norma masyarakat Malaysia.

## RUJUKAN

- Abd Ghafar Mahmud (2011). *Pendidikan Islam: Harapan dan Masa depan*. Kogress Pendidikan Islam Kebangsaan 2011. Anjuran Kementerian Pelajaran Malaysia. Dynasti Hotel Kuala Lumpur, 4-7 Disember.
- Abdul Rahman Md. Aroff (2018). *Keguruan Beretika*. Penerbit Universiti Putra Malaysia, Serdang.
- Abdul Raof Dalip. 1998. *Teknik pengajaran dan pembelajaran agama Islam di sekolah menengah*. Bangi: Universiti Kebangsaan Malaysia.
- Ab. Halim Tamuri & Zawawi Ismail. (2012). *Keberkesanan Pendidikan Islam Dalam Pendidikan Kebangsaan: Peranan Guru*. *Persidangan Meja Bulat "Penyediaan Guru Cemerlang"*. Anjuran Institut Kefahaman Islam Malaysia, 6 September.
- Ahmad Kilani Mohamed. (2005). *Pengurusan Pendidikan Di Sekolah Dari Perspektif Islam*. Johor: Universiti Teknologi Malaysia.

- Al-Ghazali, M. (2012). *Mukhtasar Ihya Ulumidin Imam Al-Ghazali*. Terjemahan Ibnu Yasin. Johor Bahru: Perniagaan Jahabersa.
- Asmawati Suhid. (2005). *Pemantapan Komponen Akhlak Dalam Pendidikan Islam Bagi Menangani Era Globalisasi*. Jurnal Kemanusiaan 6: 95-104.
- Asmawati Suhid (2009). *Pendidikan Akhlak dan Adab Islam: Konsep dan Amalan*. Kuala Lumpur: Utusan Publications and Distributors.
- Asmawati Suhid, Rahil Mahyuddin dan Abdul Rahman Mad Aroff. (2001). *Persepsi pelajar institusi pengajian tinggi terhadap Pendidikan Moral*. Kertas kerja Persidangan Kebangsaan Pendidikan Moral Dalam Dunia Globalisasi, Fakulti Pendidikan Universiti Malaya 23 – 25 Mei
- Bandura, A. (1977). *Social Learning Theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura A., & Walters R. H. (1963). *Social Learning and Personality Development*. New York: Holt, Rinehart & Winston.
- Bronfenbrenner, U. 1979. *The Ecology of the Family as a Context of Human Development: Experiments by Nature and Design*. Cambridge, MA: Harvard University Press
- Christopher M. Clark (1990) *The Teacher and The Taught: Moral Transactions in the Classroom*. San Francisco: Jossey - Bass Publishers
- Eisenberg, N., & Mussen P, H. (1989). *The Roots of Prosocial Behavior in Children* Cambridge University Press.
- Faridah Che Husain & Tengku Sarina Aini Tengku Kasim (2006). *Pendekatan Psikologi dalam Pendidikan Akhlak Muslim Sebagai Pemangkin Pembangunan Insan dan Tamadun*. Jurnal Pengajian Melayu. Jilid 17.
- Hairuddin (2013). *Pendidikan Karakter Berbasis Sunnah Nabi*. Jurnal Al-Ulum. Volume 13, No 1. 167-190. Iain Gorontalo.
- Ishak M., Abiddin N. Z., Fakhrudin F. M., (2017). *Eksplorasi Peranan Guru Pendidikan Islam Sebagai Agen Perubahan Masyarakat Dari Perspektif Pendidikan Pengembangan*. International Journal of Education, Psychology and Counseling, 2(6), 214230.
- Kementerian Pendidikan Malaysia (2013). *Pelan Pembangunan Pendidikan Malaysia, 2013-2025*. Kementerian Pendidikan Malaysia, Putrajaya.
- Maizura Yasin (2015). *Pemahaman Amalan Bertingkah Laku Moral Murid Melayu Tingkatan Empat di sebuah sekolah di Putrajaya, Malaysia*. Tesis Doktor Falsafah yang Tidak Diterbitkan. Serdang: Universiti Putra Malaysia.
- Mohamad Khairi Othman (2013). *Penerapan Nilai Murni dalam Pengajaran dan Hubungannya dengan Penghayatan Nilai Murni dalam kalangan Pelajar Sekolah Menengah*. Tesis Doktor Falsafah yang Tidak Diterbitkan. Serdang: Universiti Putra Malaysia.
- Mohamad Khairi Hj. Othman & Asmawati Suhid. (2010). *Peranan sekolah dan guru dalam pembangunan nilai pelajar menerusi penerapan nilai murni: Satu sorotan*. South East Asia Journal of General Studies, 11: 117-130.
- Mohamad Khairi Haji Othman, Mohd Zailani Mohd Yusoff, Alis Puteh & Nurfasihah Roslan (2017). *Permasalahan Dan Cabaran Guru Dalam Membentuk Nilai Pelajar Di Sekolah Menengah*. Jurnal Sultan Alauddin Sulaiman Shahspecial Issue. E-ISSN: 2289-8042 Pp 1-10
- Mohd Yusof Othman, Ismail Ibrahim, Jawiah Dakir, Lilia Halim, Zakaria Stapa, Ahmad Munawar Ismail, Ab. Halim Tamuri, Ibrahim Abu Bakar, Abrar Idris, Shamsul Shah Tarjo, Shamsul Azhar Yahya, Siti Maheran Ismail @ Ibrahim dan Noor Atiqah Abd Rahman. (2011). *Keberkesanan Pendidikan Islam dalam sistem Pendidikan Kebangsaan*. Laporan penyelidikan Institut Islam Hadhari, Universiti Kebangsaan Malaysia.
- Norzihani Saharuddin (2014). *Elemen-Elemen yang Memudahcara Pemikiran Moral Guru Pendidikan Moral*. Tesis Master Sains yang Tidak Diterbitkan. Serdang: Universiti Putra Malaysia.
- Sonia Kumari, S & Doris Padmini, S. (2011). *Analisis Human Development Index Malaysia*. Kertas kerja dibentangkan di Persidangan Kebangsaan Ekonomi Malaysia ke VI (PERKEM VI), *Ekonomi Berpendapatan Tinggi: Transformasi ke Arah Peningkatan*
- Suhaniya Kalaisilvenm & Fauzi Sukimi (2019). *Parental Control over Children in the use of social media*. Journal of Southeast Asia Social Sciences and Humanities. Vol 89, No 1, National University of Malaysia
- Syahruan Azan (2015). *Hubungan Perapatan Guru dengan Murid dalam Bilik Darjah terhadap Tingkah Laku Moral Murid*. Tesis Master Sains yang Tidak Diterbitkan. Serdang:

Universiti Putra Malaysia.

Tan Bee Piang, Rahimah Wahid, Zuraini Jamil @ Osman (2015). *Peranan guru dalam membina iklim moral dalam bilik darjah*. Jurnal Sains Sosial dan Kemanusiaan. Vol 7, No 3.

Vishalachen Balakrishnan (2009). *Pendidikan Moral untuk Universiti dan Kolej*. Selangor: Arah Publications.

V. Kotaiah (2014). *Role of The Teacher In Development Of Moral Values*. International Journal of English Language, Literature and Translation Studies. Vol.1.Issue.3

Yin, R.K. (2009). *Case Study Research Design and Methods (4th Ed.)*. Thousand Oaks, California: Sage Publication Ins.

Yakcop Jantan & Chua Yan Piaw (2017). *Kompetensi Guru Dalam Membentuk Sahsiah Pelajar Sekolah*. Jurnal Kepimpinan Pendidikan. Julai, Bil. 4, Isu 3.

Zakaria Stapa, Ahmad Munawar Ismail & Noranizah Yusoff (2012). *Faktor Persekitaran Sosial dan Hubungannya dengan pembentukan Jati Diri*. Jurnal Hadhari: An International Journal, 0, 155-172

Zuraidah Abdul Rahman. (2005). *Fasitator kelompok kecil*. Petaling Jaya: IBS Buku Sdn.Bhd.

## Peranan Pendidikan Moral dalam Menyuburkan Sifat Kemanusiaan dalam Kalangan Komuniti Digital

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### ABSTRAK

*Era Revolusi Industri 4.0 telah memberi cabaran baharu dalam dunia pendidikan dengan penekanan kepada pembelajaran abad ke-21 melalui aplikasi pelbagai teknologi digital dalam pendidikan. Walaubagaimana pun, kesedaran tentang penggunaan teknologi digital secara maya dengan beretika membuka ruang kepada pengkaji untuk melihat peranan Pendidikan Moral dalam pembentukan insan berakhlak mulia (IBM), khususnya keperluan memperkembangkan sikap dan kecenderungan mempunyai sifat kemanusiaan dalam kalangan pelajar sebagai komuniti digital. Oleh itu, kertas ini akan membincangkan tentang peranan Pendidikan Moral dalam menerapkan sifat kemanusiaan menerusi pembentukan IBM dari perspektif bidang asas dalam Pendidikan Moral termasuk falsafah, psikologi, sosiologi dan pendidikan moral. Perbincangan akan menunjukkan bagaimana sifat kemanusiaan mendasari maksud sebenar IBM dan seterusnya merumuskan perkaitan maksud IBM dengan peranan Pendidikan Moral dalam konteks komuniti digital. Justeru, kertas ini akan menunjukkan peranan penting Pendidikan Moral dalam menyuburkan sifat kemanusiaan dalam kalangan komuniti digital terhadap penggunaan teknologi digital dalam kehidupan seharian.*

**KATA KUNCI:** Insan Berakhlak Mulia, Pendidikan Moral, Kemanusiaan, Komuniti Digital, Teknologi Digital, Revolusi Industri 4.0

### 1.0 PENGENALAN

Revolusi Industri 4.0 merupakan satu era yang menekankan kepada penggunaan teknologi digital seperti internet, mesin dan tenaga robotik dalam kehidupan seharian manusia. *International Telecommunication Union* (ITU) yang merupakan sebuah agensi khas berkaitan teknologi maklumat dan komunikasi (ICT) di bawah *United Nation* telah menganggarkan peningkatan penggunaan ICT di seluruh dunia pada tahun 2018. Berdasarkan statistik yang dikeluarkan oleh ITU, sejumlah 3,650 juta individu merupakan pengguna internet pada tahun 2017 berbanding hanya 2,880 juta pengguna pada tahun 2014 di seluruh dunia. Di samping itu, kumpulan negara membangun seperti Malaysia juga telah menunjukkan peningkatan penggunaan internet daripada hanya 32.4 individu daripada setiap 100 orang penduduk pada tahun 2014 kepada 42.3 individu bagi setiap 100 penduduk pada tahun 2017 (ITU, 2018). Peningkatan ini menunjukkan bahawa penggunaan teknologi digital telah digunakan secara meluas sebagai medium perhubungan di seluruh dunia termasuk Malaysia (Barnes, Pressey, & Scornavacca, 2019; Faradillah Iqmar, Norazlili, Iza Sharina, & Nor Hafizah, 2016). Penggunaan teknologi digital yang meluas membolehkan manusia berhubung dengan dunia luar melalui pelbagai aplikasi dan laman media sosial seperti *Facebook*, *Twitter* dan aplikasi *Whatsapp*. Perhubungan tanpa batasan melalui penggunaan teknologi digital mewujudkan kelompok komuniti digital yang boleh berhubung secara maya melalui capaian internet dan tidak memerlukan perhubungan fizikal secara langsung (Che Su & Nan Zakiah, 2018; Faradillah Iqmar et

al., 2016). Oleh itu, manusia dalam komuniti digital mempunyai kebebasan untuk bersuara seperti meluahkan idea, pandangan dan komen di alam maya (Wan Amizah & Muhammad Adnan, 2017).

Walaupun bagaimanapun, kebebasan bersuara dalam penggunaan teknologi digital telah menimbulkan pelbagai implikasi negatif sehingga peraturan untuk membatasi kebebasan bersuara dibuat untuk mengekang pengguna daripada terlalu bebas mengeluarkan pandangan dan kritikan. Peraturan tentang penggunaan pelbagai media sebagai medium kebebasan bersuara telah dinyatakan dalam artikel 19 Deklarasi Hak Asasi Manusia 1948 oleh UNESCO. Selain itu, dalam konteks Malaysia sebagai sebuah negara yang mengamalkan demokrasi berparlimen, hak kebebasan bersuara dengan batasan tertentu juga telah ditetapkan dalam Perlembagaan Persekutuan (Wan Amizah & Muhammad Adnan, 2017). Namun, kewujudan peraturan tentang penggunaan teknologi digital masih menimbulkan kebimbangan dalam kalangan komuniti digital di Malaysia khususnya terhadap keselamatan penggunaan internet. Kebimbangan ini menggambarkan bahawa pengguna internet dalam komuniti digital masih terdedah kepada pelbagai ancaman negatif ketika melayari internet (Mohamad Salleh & Mohd Ilham, 2018). Jadual 1, 2 dan 3 menunjukkan peratus kes pelanggaran data melalui internet, kebimbangan keselamatan pengguna internet di Malaysia serta tindakan yang diambil apabila mereka mengalami pelanggaran data yang dikeluarkan oleh *Unisys Security Index Malaysia 2019*:

Jadual 1: Kes Pelanggaran Data Pada Tahun 2019

Perkara	Peratus (%)
Profil media sosial telah digodam	15
Manipulasi maklumat peribadi untuk tujuan penipuan	19

Jadual 2: Laporan Kebimbangan Keselamatan Pengguna Internet di Malaysia

Kebimbangan	Peratus (%)
Penipuan kad bank	88
Akses tanpa kebenaran kepada maklumat peribadi	87
Penggodaman atau virus internet	78

Jadual 3: Tindakan Apabila Mengalami Pelanggaran Data

Tindakan	Peratus (%)
Terus berurusan dengan organisasi tetapi tidak secara dalam talian	14
Mendedahkan secara umum isu itu kepada media	18
Mendedahkan secara umum isu itu di media sosial	25
Mengambil tindakan undang-undang	30
Berhenti berurusan dengan organisasi seperti menutup akaun	32

Berdasarkan jadual 1, 15% pengguna internet di Malaysia melaporkan bahawa mereka mengalami pelanggaran data berkaitan penggodaman profil media sosial dan 19% pula berkaitan penipuan maklumat peribadi. Walaupun peratusan yang mengalami pelanggaran data adalah kecil, tetapi laporan ini menunjukkan salah satu ancaman negatif yang dihadapi oleh pengguna internet sehingga menimbulkan kebimbangan sebanyak 87% mengenai akses tanpa kebenaran kepada maklumat peribadi di internet seperti dalam jadual 2. Jadual 3 pula menunjukkan tindakan yang diambil oleh masyarakat Malaysia apabila mereka mengalami kes pelanggaran data. Di antara kelima-lima tindakan yang diambil, mendedahkan secara umum isu pelanggaran data di media sosial merupakan pilihan tindakan masyarakat Malaysia sekaligus menggambarkan media sosial merupakan salah satu platform penting untuk berkongsi maklumat tentang pelanggaran data yang dialami.

Dalam satu kajian berkaitan penggunaan media sosial dalam kalangan pelajar asasi di sebuah pusat pengajian tinggi di Malaysia, *facebook* merupakan media sosial yang paling popular digunakan dan diakses hampir setiap hari oleh mereka (Faradillah Iqmar et al., 2016). Walaupun kajian tersebut mengaitkan penggunaan media sosial dengan peningkatan pencapaian akademik, tetapi 24% daripada responden yang terlibat mengakui bahawa penggunaan media sosial menyebabkan mereka ketagih terhadapnya (Barnes et al., 2019; Wang, Sigerson, & Cheng, 2019). Walaupun angka tersebut tidak begitu besar, tetapi ketagihan



kepada penggunaan media sosial boleh mengundang pelbagai implikasi kepada remaja sama ada secara positif atau negatif (Mohd Fikri, Norsiah, & Norfaezah, 2019).

Di samping itu, data daripada kajian Suhaniya dan Mohamad Fauzi (2019) pula menunjukkan bahawa kanak-kanak yang berusia antara 11 hingga 18 tahun lebih kerap menggunakan internet berbanding kanak-kanak berusia 7 hingga 10 tahun. Dalam kajian Rozana, Roslina dan Suraya (2019) pula, hampir 55.5% pelajar berumur 10 dan 11 tahun dalam kajian mereka memiliki peralatan digital khususnya telefon mudah alih dan mereka mendapat kepercayaan ibu bapa untuk menggunakannya bagi tujuan yang baik sebagai medium komunikasi, panggilan semasa kecemasan atau perbincangan tentang perkara berkaitan pembelajaran. Dapatan ini membuktikan bahawa pelajar merupakan golongan yang perlu diterapkan dengan sikap dan kecenderungan mempunyai sifat kemanusiaan dalam penggunaan teknologi digital khususnya media sosial. Tambahan pula, penggunaan media sosial boleh berlanjutan hingga ke peringkat usia dewasa kerana masyarakat kini banyak bergantung kepada peranan media sosial dan teknologi digital untuk berkomunikasi dan mendapatkan maklumat dalam kehidupan seharian (Mohamad Salleh & Mohd Ilham, 2018).

Disebabkan itu, peranan pendidikan khususnya sama ada secara formal atau tidak formal penting untuk membimbing remaja menggunakan teknologi digital secara berhemah melalui pemupukan sikap dan kecenderungan mempunyai sifat kemanusiaan sebagai pengguna teknologi digital. Justeru, kertas ini akan membincangkan tentang peranan Pendidikan Moral sebagai salah satu usaha kepada penerapan sifat kemanusiaan menerusi pembentukan insan berakhlak mulia (IBM) dari perspektif bidang asas dalam Pendidikan Moral. Berpanduan kepada sorotan literatur yang berkaitan dengan falsafah, psikologi, sosiologi dan pendidikan moral, kertas ini akan membincangkan tentang bagaimana sifat kemanusiaan menjadi asas kepada maksud sebenar IBM dan seterusnya merumuskan perkaitan maksud IBM dengan peranan Pendidikan Moral dalam konteks komuniti digital. Akhir sekali, kertas ini akan menunjukkan peranan penting Pendidikan Moral dalam menyuburkan sifat kemanusiaan dalam kalangan komuniti digital terhadap penggunaan teknologi digital dalam kehidupan seharian.

## **2.0 SIFAT KEMANUSIAAN DAN IBM DARIPADA PERSPEKTIF BIDANG ASAS PENDIDIKAN MORAL**

Pendidikan Moral adalah berasaskan tiga bidang iaitu falsafah, psikologi dan sosiologi moral. Dalam konteks sosiologi moral, Yao dan Enright (2018) menyatakan bahawa media berfungsi sebagai agen sosialisasi untuk melahirkan manusia yang saling mengambil peduli akan kebajikan orang lain. Cabaran yang perlu dihadapi oleh manusia dalam Revolusi Industri 4.0 adalah penggunaan mesin dan tenaga robotik yang dijadikan sebagai pengganti kepada penggunaan tenaga manusia (Nurfazwin & Nor Fadila, 2019). Namun, penggunaan mesin dan robotik yang dijadikan sebagai agen autonomi yang menentukan hala tuju kehidupan manusia tidak mampu untuk menggantikan fungsi manusia sebagai agen moral yang berautonomi (Bigman & Gray, 2018; Bigman, Waytz, Alterovitz, & Gray, 2019). Oleh itu, penggunaan mesin dan robotik sebagai gambaran kepada kemajuan sains dan teknologi perlu diimbangi dengan sifat kemanusiaan yang hanya boleh dimiliki dan dikembangkan oleh manusia melalui domain moral seperti penaakulan dan emosi moral (Bigman et al., 2019). Dalam konteks penggunaan media sosial sebagai medium komunikasi pula, sifat kemanusiaan juga perlu dipraktikkan kerana pengguna media sosial cenderung untuk berkongsi pelbagai aktiviti dan maklumat peribadi yang boleh membahayakan dan mengancam keselamatan pengguna itu sendiri (Mohamad Salleh & Mohd Ilham, 2018). Perkongsian pelbagai aktiviti dan maklumat peribadi di laman sosial seperti *facebook* memerlukan pengawalan daripada pengguna kerana pihak lain mudah untuk mendapat akses kepada akaun peribadi seseorang pengguna dan menyebabkan perkongsian menjadi tular sama ada untuk tujuan yang baik atau sebaliknya (Mohamad Salleh & Mohd Ilham, 2018; Suhaniya & Mohamad Fauzi, 2019). Justeru, penyuburan sifat kemanusiaan adalah penting untuk memastikan pengekalannya kemajuan sains dan teknologi yang lebih mapan (Morshidi & Chang, 2018) khususnya dalam kalangan pelajar.

Selain itu, Keadaan saling mengambil peduli akan kebajikan orang lain digambarkan oleh Yao dan Enright (2018) sebagai sifat kemanusiaan yang melambangkan ketinggian moral seseorang. Gambaran bahawa sifat kemanusiaan melambangkan ketinggian moral seseorang menunjukkan kepentingan pembentukan IBM melalui pelaksanaan Pendidikan Moral. Oleh itu, penyuburan sifat kemanusiaan perlu difahami dalam konteks pelbagai perspektif bidang asas moral seperti falsafah, psikologi dan sosiologi moral dalam pembentukan IBM. Pembentukan IBM melalui Pendidikan Moral adalah berfokus kepada

pemahaman tentang konsep kemoralan iaitu moral, nilai dan etika serta perkembangan tiga domain moral iaitu penaakulan, emosi dan perlakuan moral. Pemahaman kepada konsep kemoralan dan perkembangan moral melambangkan pengamalan tiga prinsip moral yang utama iaitu altruistik, autonomi dan keadilan (Abdul Rahman, 2018; Kementerian Pendidikan Malaysia, 2015).

Moral, nilai dan etika adalah saling berkait dengan maksud hukum dan adab yang dijadikan sebagai piawai, norma dan panduan sesebuah kelompok masyarakat untuk menentukan perlakuan moral (Abd Rahman & Chang, 1994; Durkheim, 1961; Rokeach, 1979). Konsep kemoralan ini menggambarkan keperluan untuk menyuburkan sifat kemanusiaan berdasarkan tiga prinsip moral yang mendasari perbincangan tentang IBM dari perspektif, falsafah, psikologi dan sosiologi moral. Falsafah kemoralan sosial mempunyai pandangan bahawa konsep etika dan kemoralan adalah berkait dengan peraturan masyarakat dan autoriti sekaligus menggambarkan peranan sosiologi moral dalam pembentukan IBM (Abdul Rahman, 2018). Durkheim (1961) menekankan bahawa individu mempunyai autonomi untuk bertindak dalam situasi tertentu melalui pemahaman kepada peraturan sosial yang ditentukan dan membolehkan individu mematuhi sesuatu peraturan dengan kerelaan (Abdul Rahman, 1999; Yao & Enright, 2018). Memahami peraturan sosial yang ditentukan membolehkan individu memikirkan kesesuaian tindakannya berdasarkan situasi yang dialami (Gunawan, Utanto, & Maretta, 2017). Oleh itu, penyuburan sifat kemanusiaan juga mengambil kira konsep IBM yang berpegang kepada prinsip individu memiliki autonomi dalam mengambil tindakan tetapi perlu diimbangi dengan pematuhan kepada peraturan masyarakat.

IBM menurut falsafah kemoralan sosial dan deontologi juga berpandangan bahawa kemoralan perlu mementingkan kemanusiaan dan masyarakat secara keseluruhan (Abdul Rahman, 2018). Dalam konteks pembentukan karakter IBM pula, falsafah etika keperibadian mulia juga sependapat dengan pandangan Al-Ghazali bahawa sifat yang baik perlu dilatih hingga menjadi kebiasaan yang diamalkan untuk memberi manfaat kepada individu dan masyarakat (Aminatun, 2019; Attaran, 2015; Chowdhury, 2016; Croitoru & Munteanu, 2014; Jeynes, 2017). Kepentingan untuk mengambil kira kebajikan masyarakat dalam setiap tindakan (Rubini, 2019) adalah relevan dengan falsafah utilitarian yang menjadikan akibat sesuatu perbuatan sebagai penentuan perlakuan yang baik. Golongan utilitarian berpendapat bahawa kemoralan adalah mencari kebahagiaan yang lebih banyak berbanding kesakitan melalui keseronokan (Abdul Rahman, 2018; Fleischmann, Lammers, Conway, & Galinsky, 2017; Jamil, Mohammad, & Ramu, 2018). Namun, perasaan seronok adalah bersifat relatif dan subjektif (Abdul Rahman, 2018) yang memerlukan kematangan individu untuk membuat penilaian tentang tindakan yang baik berasaskan sifat kemanusiaan khususnya apabila melibatkan penggunaan teknologi digital. Misalnya, sekiranya seseorang individu menggunakan teknologi digital untuk tujuan menghasilkan keseronokan kepada ramai orang, maka sifat kemanusiaan yang dilahirkan dalam konteks ini adalah baik. Sebaliknya, jika seseorang individu beranggapan bahawa menggunakan teknologi digital untuk tujuan yang kurang beretika seperti menyebarkan berita-berita palsu atau keaiban orang lain boleh memberi keseronokan yang paling banyak, maka tujuan tersebut adalah bercanggah dengan sifat kemanusiaan yang seharusnya mengambil kira kepentingan orang lain (Durkheim, 1973; Rubini, 2019).

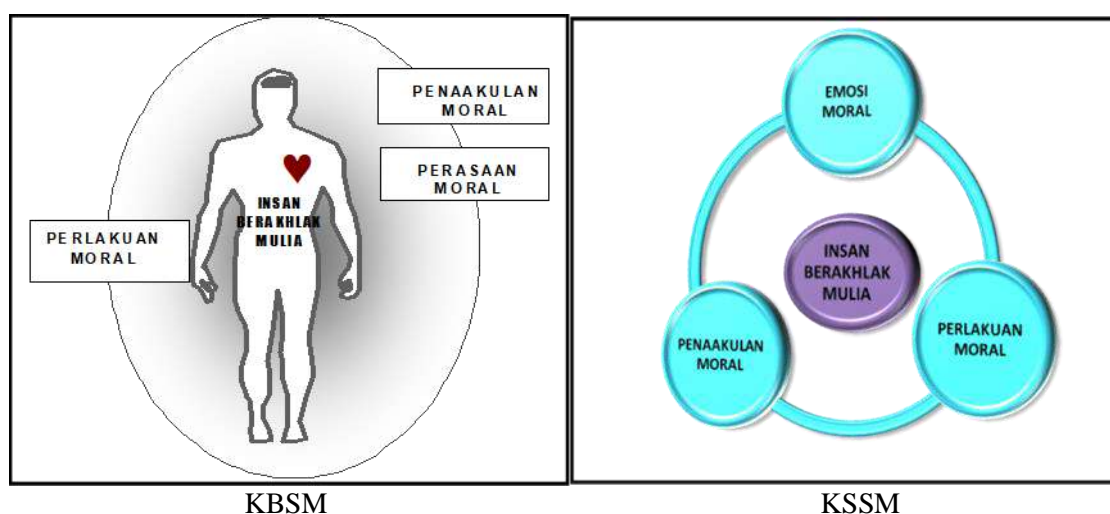
Oleh itu, sifat kemanusiaan dalam konteks penggunaan teknologi digital juga meliputi keupayaan minda dan emosi untuk membuat penaakulan sebagai agen moral yang berautonomi dan kecenderungan emosi untuk bertindak berdasarkan prinsip altruistik (Bigman & Gray, 2018; Bigman et al., 2019; Syamsuar & Reflianto, 2019). Walaupun falsafah eksistensialisme dan egoisme menjadikan prinsip autonomi sebagai keperluan untuk mengutamakan kepentingan diri, tetapi perkembangan moral menyeluruh dalam konteks psikologi moral boleh membantu individu mengimbangi domain penaakulan dan emosi moral untuk menghasilkan tindakan yang menggambarkan sifat kemanusiaan berdasarkan prinsip altruistik dan keadilan. Kepentingan menyuburkan sifat kemanusiaan melalui perkembangan emosi moral juga menafikan pandangan Kant dalam prinsip kewajipan yang mengabaikan perasaan simpati dan kemurahan hati dalam mempamerkan sifat kemanusiaan (Abdul Rahman, 2014; Railton, 2017). Perkembangan domain emosi moral adalah penting untuk membolehkan individu mencapai kematangan moral (Lickona, 1991) dalam membuat keputusan dan tindakan khususnya dalam mempamerkan sifat kemanusiaan sebagai asas IBM.

Rumusannya, sifat kemanusiaan mendasari maksud IBM dalam pelbagai perspektif falsafah, psikologi dan sosiologi moral yang memperlihatkan kepentingan Pendidikan Moral sebagai satu usaha untuk menyuburkan sifat kemanusiaan dalam kalangan pelajar yang merupakan sebahagian daripada komuniti digital. Walaupun para pendidik disarankan untuk menggunakan pelbagai pendekatan teknologi

termasuk medium media sosial dalam pengajaran dan pembelajaran abad ke-21, penyuburan sifat kemanusiaan adalah tidak terasing daripada pendidikan dalam usaha memartabatkan komuniti digital yang masih mementingkan sifat kemanusiaan (Hisbiyatul, 2017; Syamsuar & Reflianto, 2019). Dalam konteks masyarakat pluralisme di Malaysia (Nur Surayyah, 2009), khususnya pelajar Pendidikan Moral yang mempunyai kepelbagaian latar belakang budaya, agama dan kepercayaan, pemahaman kepada IBM yang merupakan asas kepada penyuburan sifat kemanusiaan perlu dititik beratkan. Justeru, peranan Pendidikan Moral melalui pembentukan IBM adalah penting untuk melahirkan pelajar yang boleh menjadi pengguna teknologi digital yang beretika khususnya ketika berinteraksi dalam laman media sosial.

### 3.0 PENYUBURAN SIFAT KEMANUSIAAN MELALUI IBM DAN PENDIDIKAN MORAL

Dalam konteks Malaysia, salah satu pendekatan yang digunakan untuk menyuburkan sifat kemanusiaan dalam kalangan komuniti digital khususnya remaja sekolah adalah melalui sistem pendidikan secara formal seperti mata pelajaran Pendidikan Moral. Mata pelajaran Pendidikan Moral telah diperkenalkan pada tahun 1983 dengan penekanan kepada usaha untuk melahirkan IBM (Chang, 2013; Vishalache, 2017). Walaupun setelah melalui pelbagai perubahan kurikulum, Pendidikan Moral masih mengekalkan matlamat melahirkan IBM agar pelajar dapat membuat keputusan beretika dalam mengambil tindakan (Kementerian Pendidikan Malaysia, 2000, 2015; Vishalache, 2010) termasuklah dalam penggunaan teknologi digital yang semakin popular dalam kalangan remaja sekolah. Oleh itu, mata pelajaran Pendidikan Moral memainkan peranan penting dalam usaha menyuburkan sifat kemanusiaan melalui pembentukan IBM. Rajah 1 menunjukkan persamaan matlamat Pendidikan Moral untuk melahirkan IBM berdasarkan Sukatan Pelajaran Pendidikan Moral KBSM (2000) dan Dokumen Standard Kurikulum dan Pentaksiran Pendidikan Moral KSSM (2015):



Rajah 1: IBM sebagai Matlamat Pendidikan Moral dalam KBSM dan KSSM

Pembentukan IBM melalui Pendidikan Moral melibatkan aspek perkembangan penaaakulan moral, emosi moral dan perlakuan moral bersandarkan matlamat Pelan Pembangunan Pendidikan Malaysia (PPPM) 2013-2025 dalam tunjang sains dan teknologi, kemanusiaan serta sikap dan nilai yang masih berteraskan kepada Falsafah Pendidikan Kebangsaan (FPK) dan Dasar Pendidikan Kebangsaan (DPK) (Kementerian Pendidikan Malaysia, 2017). Tunjang sikap dan nilai yang berteraskan FPK dan DPK merupakan salah satu hasrat dalam Pendidikan Moral untuk memastikan pelajar mengamalkan nilai-nilai universal yang terdapat dalam agama, tradisi dan adat resam pelbagai kaum serta perundangan di Malaysia. Amalan nilai-nilai universal seperti toleransi, hormat, baik hati dan hemah tinggi (Kementerian Pendidikan Malaysia, 2015) menunjukkan kepentingan penyuburan sifat kemanusiaan yang menjadi asas kepada pembentukan IBM melalui Pendidikan Moral. Nilai-nilai seperti toleransi, hormat, baik hati dan hemah tinggi merupakan antara nilai yang penting dalam penyuburan sifat kemanusiaan (Winaya, 2018) kerana ia melibatkan hubungan antara diri dan orang lain sekaligus menyumbang kepada kesejahteraan masyarakat khususnya dalam kalangan komuniti digital.

Selain itu, matlamat pembentukan IBM dalam Pendidikan Moral juga selaras dengan tiga prinsip moral iaitu altruistik, autonomi dan keadilan bagi membina dan mengekalkan masyarakat yang bermoral dan beretika (Kementerian Pendidikan Malaysia, 2015). Dalam konteks komuniti digital, menggunakan teknologi digital seperti internet dan media sosial untuk berkomunikasi perlu dilakukan secara bermoral dan beretika agar tidak berlaku pelanggaran hak peribadi yang boleh mengundang pelbagai implikasi negatif (Che Su & Nan Zakiah, 2018; Wan Amizah & Muhammad Adnan, 2017). Penyuburan sifat kemanusiaan menerusi prinsip altruistik, autonomi dan keadilan juga dapat memenuhi empat tonggak pendidikan UNESCO, antaranya adalah belajar untuk hidup bersama (*learning to live together*) kerana ia mengambil kira kepentingan bersama sebagai komuniti digital yang boleh mengekalkan kesejahteraan sesebuah masyarakat (Kementerian Pendidikan Malaysia, 2016). Di samping itu juga, Pendidikan Moral berperanan menyuburkan sifat kemanusiaan melalui pembentukan karakter pelajar iaitu IBM dalam konteks perkembangan moral menyeluruh meliputi domain psikologi moral iaitu penaakulan, emosi dan perlakuan moral. Matlamat pembentukan IBM dari aspek perkembangan moral menyeluruh juga memenuhi tonggak pendidikan UNESCO iaitu belajar untuk membentuk peribadi (*learning to be*). Keperibadian IBM yang dibentuk menerusi perkembangan moral menyeluruh boleh menyumbang kepada penyuburan sifat kemanusiaan dalam kalangan pelajar Pendidikan Moral kerana mereka berupaya untuk mencari penyelesaian terhadap isu remaja atau dilema moral yang dihadapi khususnya dalam kalangan komuniti digital dengan lebih rasional dan berempati (Kementerian Pendidikan Malaysia, 2015). Perkembangan moral menyeluruh, prinsip-prinsip moral serta pegangan nilai-nilai universal yang membantu penyuburan sifat kemanusiaan menggambarkan kepentingan memahami pembentukan IBM dalam konteks falsafah, psikologi dan sosiologi moral.

Justeru, pembentukan IBM juga seharusnya mengambil kira pelbagai faktor yang boleh mempengaruhi individu dalam mempertimbangkan perlakuan yang melambangkan IBM. Dalam konteks Malaysia yang mempunyai masyarakat pluralisme (Nur Surayyah, 2009) tetapi berpegang kepada Islam sebagai agama rasmi (Vishalache, 2017), pembentukan IBM memerlukan pemahaman secara holistik dari sudut falsafah, psikologi dan sosiologi moral. Tambahan pula, mata pelajaran Pendidikan Moral di Malaysia dipelajari oleh pelajar yang mempunyai pelbagai latar belakang budaya, agama dan kepercayaan sekaligus mewujudkan pelbagai fahaman dan nilai yang menjadi pegangan dan panduan dalam menentukan definisi konsep IBM. Oleh itu, perbincangan tentang maksud IBM yang dikupas dan dirumus dari bidang asas dalam Pendidikan Moral akan memberi gambaran tentang maksud IBM dan kaitannya dengan peranan Pendidikan Moral untuk menyuburkan sifat kemanusiaan dalam kalangan komuniti digital khususnya pelajar sekolah.

#### **4.0 IMPLIKASI IBM DAN PENDIDIKAN MORAL DARIPADA PELBAGAI PERSPEKTIF BIDANG ASAS PENDIDIKAN MORAL**

Perbincangan tentang asas kemoralan dari perspektif falsafah moral dan perkaitannya dalam konteks psikologi dan sosiologi moral telah memberi pemahaman bahawa terdapat pelbagai tafsiran tentang konsep IBM. Perbincangan sebelum ini turut menyentuh tentang matlamat penghasilan IBM dalam kurikulum Pendidikan Moral. Mengambil kira bahawa pelajar Malaysia khususnya datang daripada kepelbagaian latar belakang kepercayaan dan agama, maka definisi IBM perlu difahami dari pelbagai perspektif dalam menentukan kemoralan individu. Selain itu, kepelbagaian latar belakang kepercayaan dan agama dalam kalangan komuniti digital juga perlu diberi perhatian dalam membincangkan tentang peranan Pendidikan Moral untuk menghasilkan IBM. Hal ini demikian kerana, pengguna teknologi digital khususnya laman media sosial adalah terdiri daripada golongan kanak-kanak dan remaja sekolah (Mohd Fikri et al., 2019; Rozana, Roslina, & Suraya, 2019; Suhaniya & Mohamad Fauzi, 2019). Oleh itu, pelaksanaan Pendidikan Moral dalam penghasilan IBM untuk menyuburkan sifat kemanusiaan adalah penting kerana ia akan memandu pelajar menggunakan teknologi digital secara berhemah.

Berdasarkan perbincangan tentang IBM dalam konteks falsafah moral, penentuan kepada kemoralan individu yang mendasari IBM adalah berasaskan kepada perkembangan psikologi moral dan pengaruh daripada sosiologi moral. Dalam konteks psikologi moral, falsafah etika keperibadian mulia yang berpegang kepada konsep pembentukan karakter melalui pendidikan (Croitoru & Munteanu, 2014; Jeynes, 2017) menggambarkan kepentingan Pendidikan Moral sebagai medium penyuburan sifat kemanusiaan melalui pembentukan IBM. Selain itu, falsafah utilitarianisme yang melihat bahawa kesan sesuatu tindakan yang membawa lebih banyak keseronokan berbanding kesakitan adalah baik (Abdul Rahman, 2018;

Fleischmann et al., 2017) juga memerlukan bimbingan dalam konteks pembelajaran Pendidikan Moral kerana keseronokan adalah bersifat subjektif bergantung kepada tafsiran individu (Karandikar, Kapoor, Fernandes, & Jonason, 2018) dan relatif iaitu boleh berubah tertakluk pada situasi dan keadaan (Fleischmann et al., 2017). Menggunakan falsafah ini sebagai asas kepada penentuan IBM memerlukan kematangan moral individu yang boleh dicapai menerusi perkembangan psikologi moral yang terdiri daripada penaaakulan, emosi dan perlakuan moral (Jamil et al., 2018). Kematangan moral boleh membantu individu membuat keputusan tepat tentang definisi keseronokan yang boleh membawa kebaikan dan kesejahteraan kepada diri dan orang lain. Misalnya, keseronokan berbuat baik kepada ramai orang boleh dikembangkan melalui domain emosi moral sekaligus menyuburkan sifat kemanusiaan yang menjadi asas kepada IBM dalam konteks falsafah utiliti. Penyuburan sifat kemanusiaan melalui falsafah utiliti menjadikan komunikasi dalam komuniti digital seperti media sosial lebih bermanfaat di mana pelajar dapat mengelakkan diri daripada terlibat dengan jenayah buli siber atas kesedaran bahawa jenayah buli siber boleh mendatangkan kesan buruk kepada emosi mangsa.

Di samping itu, falsafah kemoralan sosial dan deontologi boleh dilihat dari perspektif sosiologi moral kerana kedua-dua falsafah ini mengaitkan kemoralan dengan kewujudan peraturan dan undang-undang yang dijadikan sebagai kontrak sosial dalam masyarakat (Graham, Haidt, & Nosek, 2009). Idea yang mendasari falsafah kemoralan sosial adalah peraturan diwujudkan oleh golongan berautoriti sebagai panduan untuk bertindak dalam situasi tertentu (Abbott, 2019; Mohd Azhar, Mohd Koharuddin, Muhamed Fauzi, & Othman, 2004). Dalam konteks penghasilan IBM melalui Pendidikan Moral, idea kemoralan sosial perlu difahami melalui kepelbagaian latar belakang agama dan kepercayaan pelajar serta set nilai yang berbeza mengikut kelompok masyarakat. Hal ini demikian kerana, setiap agama dan kepercayaan serta kelompok masyarakat mempunyai peraturan dan undang-undang tersendiri yang perlu dipatuhi selain daripada peraturan dan undang-undang negara yang ditentukan oleh autoriti (Atifah, Muhammad Ridhuan Tony Lim, Mohd Nuri Al-Amin, Enizahura, & Ahmad Tarmizi, 2018). Bersandarkan kepada pandangan bahawa individu yang bermoral adalah individu yang patuh pada peraturan autoriti, maka peraturan dan undang-undang berkaitan penggunaan teknologi digital khususnya internet diperkenalkan di peringkat antarabangsa mahupun secara spesifik mengikut kesesuaian negara masing-masing (Wan Amizah & Muhammad Adnan, 2017). Kepentingan mewujudkan peraturan tentang penggunaan teknologi digital adalah kerana fungsi media massa sebagai agen sosialisasi yang menjadi saluran untuk membentuk, menyebarkan dan merubah sesuatu budaya (Berns, 2010).

Dalam konteks Malaysia, Suruhanjaya Komunikasi dan Multimedia Malaysia (1998) telah diperkenalkan sebagai satu usaha ke arah membentuk sifat kemanusiaan dalam kalangan pengguna ICT melalui penguatkuasaan terhadap beberapa akta di bawah suruhanjaya tersebut. Sifat kemanusiaan yang dibentuk melalui pematuhan kepada peraturan dan undang-undang yang ditetapkan boleh mengelak seseorang individu khususnya pelajar daripada terlibat dengan penyalahgunaan rangkaian media sosial seperti *Twitter* dan *Facebook* yang digunakan untuk mencerooboh hak privasi orang lain, menyamar dan membuli mangsa (Amini Amir, 2012). Oleh itu, IBM dan Pendidikan Moral perlu difahami dari perspektif falsafah, psikologi dan sosiologi moral bagi memastikan Pendidikan Moral dapat memainkan peranannya untuk menyuburkan sifat kemanusiaan dalam kalangan komuniti digital.

## 5.0 KESIMPULAN

Peranan Pendidikan Moral adalah penting dalam penyuburan sifat kemanusiaan kerana ia adalah asas kepada pembentukan IBM. Walaupun kepelbagaian pandangan falsafah moral tentang kemoralan yang merupakan asas untuk memahami IBM telah dibincangkan, tetapi usaha penyuburan sifat kemanusiaan yang berpanduan kepada pelbagai perspektif falsafah, psikologi dan sosiologi moral perlu difahami secara holistik kerana setiap individu mempunyai set nilai dan kepercayaan yang berbeza tentang kemoralan. Oleh kerana media massa merupakan salah satu agen sosialisasi yang penting, maka perbincangan tentang peranan Pendidikan Moral dalam konteks penyuburan sifat kemanusiaan dalam kalangan komuniti digital adalah relevan dalam era Revolusi Industri 4.0.

Pendidikan Moral merupakan salah satu *platform* pendidikan dalam menyuburkan sifat kemanusiaan kerana konsepnya yang mengambil kira kepelbagaian perspektif tentang kemoralan dengan merujuk kepada penerapan nilai-nilai sejagat yang merupakan sebahagian daripada asas kepada pencapaian matlamat untuk menghasilkan IBM melalui Pendidikan Moral. Penghasilan IBM dalam Pendidikan Moral pula turut mengambil kira kematangan moral yang meliputi perkembangan domain penaaakulan, emosi dan perlakuan

moral secara menyeluruh. Perkembangan moral menyeluruh adalah penting dalam menyuburkan sifat kemanusiaan agar seseorang individu dapat membuat keputusan rasional dalam setiap tindakan yang diambil demi kesejahteraan masyarakat tanpa mengabaikan kepentingan diri sendiri. Oleh itu, peranan Pendidikan Moral adalah penting dalam menyuburkan sifat kemanusiaan kerana ia mengambil kira kepelbagaian perspektif kemoralan yang dapat mewakili kemajmukan masyarakat di Malaysia.

## RUJUKAN

- Abbott, A. (2019). Living One's Theories: Moral Consistency in the Life of Émile Durkheim. *Sociological Theory*, 37(1), 1–34. <https://doi.org/10.1177/0735275119830444>
- Abd Rahman, M. A., & Chang, L. H. (1994). *Dinamika Guru Pendidikan Moral*. Kuala Lumpur, Malaysia: Longman Malaysia Sdn. Bhd.
- Abdul Rahman, M. A. (1999). *Pendidikan Moral: Teori Etika dan Amalan Moral*. Serdang, Selangor: Penerbit UPM.
- Abdul Rahman, M. A. (2014). Values Education and the Malaysia Education Blueprint. *Journal for Interdisciplinary Research in Education (JIRE)*, 4(1), 59–73.
- Abdul Rahman, M. A. (2018). *Keguruan Beretika*. Serdang, Selangor: Penerbit UPM.
- Aminatun, H. (2019). Moralitas Dalam Pemikiran Fiqh. *Jurnal Ilmu Pendidikan Islam*, 17(1), 15–30.
- Amini Amir, A. (2012). Etika Digital Dan Berinternet Menurut Perspektif Islam. *Jurnal Penyelidikan Islam*, 25, 55–82.
- Atifah, A. Y., Muhammad Ridhuan Tony Lim, A., Mohd Nuri Al-Amin, E., Enizahura, A. A., & Ahmad Tarmizi, T. (2018). Indicators for Socio-Religious Harmony Index (SRHI) Instrument for Malaysia: Findings of FDM Expert Panel. *Pertanika Journal of Social Sciences & Humanities*, 26(S), 121–136.
- Attaran, M. (2015). Moral Education, Habituation, and Divine Assistance in View of Ghazali. *Journal of Research on Christian Education*, 24(1), 37–51. <https://doi.org/10.1080/10656219.2015.1008083>
- Barnes, S. J., Pressey, A. D., & Scornavacca, E. (2019). Mobile ubiquity: Understanding the relationship between cognitive absorption, smartphone addiction and social network services. *Computers in Human Behavior*, 90(2019), 246–258. <https://doi.org/10.1016/j.chb.2018.09.013>
- Berns, R. M. (2010). *Child, Family, School, Community: Socialization and Support* (8th Edition). Belmont, USA: Wardsworth.
- Bigman, Y. E., & Gray, K. (2018). People are averse to machines making moral decisions. *Cognition*, 181(August), 21–34. <https://doi.org/10.1016/j.cognition.2018.08.003>
- Bigman, Y. E., Waytz, A., Alterovitz, R., & Gray, K. (2019). Holding Robots Responsible: The Elements of Machine Morality. *Trends in Cognitive Sciences*, 23(5), 365–368.
- Chang, L. H. (2013). Revisiting the Values in Moral Education for Malaysian schools. *Journal of Research, Policy & Practice of Teachers & Teacher Education*, 3(2), 49–59.
- Che Su, M., & Nan Zakiah, M. I. (2018). Persepsi Dan Penggunaan Media Sosial Dari Perspektif Ibu Bapa: Satu Analisis Kualitatif. *Jurnal Komunikasi*, 30(Special Issue), 43–74.
- Chowdhury, M. (2016). Emphasizing Morals, Values, Ethics, And Character Education In Science Education And Science Teaching. *The Malaysian Online Journal of Educational Science*, 4(2), 1–16.
- Croitoru, I., & Munteanu, H. (2014). The Moral-religious Education – A Support of Self-conscience Training. *Procedia - Social and Behavioral Sciences*, 116, 2155–2163.
- Durkheim, E. (1961). *Moral Education*. New York: Free Press of Glencoe.
- Durkheim, E. (1973). *Emile Durkheim on Morality and Society*. (B. Robert N., Ed.). London: The University of Chicago Press LTD.
- Faradillah Iqmar, O., Norazlili, H., Iza Sharina, S., & Nor Hafizah, A. (2016). Gen Y: A Study On Social Media Use And Outcome. *Journal of Management & Muamalah*, 6(1), 53–64.
- Fleischmann, A., Lammers, J., Conway, P., & Galinsky, A. D. (2017). Paradoxical Effects of Power on Moral Thinking: Why Power Both Increases and Decreases Deontological and Utilitarian Moral Decisions. *Social Psychological and Personality Science*, 10(1), 110–120.
- Graham, J., Haidt, J., & Nosek, B. A. (2009). Liberals and Conservatives Rely on Different Sets of Moral Foundations. *Journal of Personality and Social Psychology*, 96(5), 1029–1046.
- Gunawan, D., Utanto, Y., & Maretta, Y. A. (2017). An analysis on Indonesian teachers' reasoning in resolving moral dilemmas. *Man in India*, 97(2), 829–841.

- Hisbiyatul, H. (2017). Memahami Media Pembelajaran sebagai Refleksi Kemanusiaan dalam Praktik Pendidikan. *Al- 'Adalah*, 20(1), 137–152.
- Jamil, R., Mohammad, J., & Ramu, M. (2018). Antecedents of Unethical Behaviour Intention: Empirical Study in Public Universities in Malaysian Context. *Journal of Academic Ethics*, 17(1), 95–110.
- Jeynes, W. H. (2017). A Meta-Analysis on the Relationship Between Character Education and Student Achievement and Behavioral Outcomes. *Education and Urban Society*, 00(0), 1–39.
- Karandikar, S., Kapoor, H., Fernandes, S., & Jonason, P. K. (2018). Predicting moral decision-making with dark personalities and moral values. *Personality and Individual Differences*, (March), 0–1.
- Kementerian Pendidikan Malaysia. (2000). Huraian Sukatan Pelajaran Pendidikan Moral KBSM. Kementerian Pelajaran Malaysia: Pusat Perkembangan Kurikulum.
- Kementerian Pendidikan Malaysia. (2015). Dokumen Standard Kurikulum dan Pentaksiran KSSM Pendidikan Moral. Putrajaya: Bahagian Pembangunan Kurikulum.
- Kementerian Pendidikan Malaysia. (2016). Buku Penerangan KSSM. Putrajaya: Bahagian Pembangunan Kurikulum.
- Kementerian Pendidikan Malaysia. (2017). Dasar Pendidikan Kebangsaan (DPK) Jilid 4. Putrajaya: Kementerian Pendidikan Malaysia.
- Lickona, T. (1991). *Educating for character: How our schools can teach respect and responsibility*. New York: Bantam Books.
- Mohamad Salleh, M. A., & Mohd Ilham, N. M. (2018). Pengalaman dan Kesedaran Pengguna Dewasa Terhadap Isu Pengawasan di Media Sosial. *Jurnal Komunikasi, Malaysian Journal of Communication*, 33(1), 502–512. <https://doi.org/10.17576/jkmjc-2017-3301-33>
- Mohd Fikri, Y., Norsiah, A. H., & Norfaezah, Y. (2019). Pengaruh Gaya Keibuan Terhadap Penerimaan Media Sosial Dalam Kalangan Pelajar Sekolah Menengah. *Journal of Human Capital Development*, 12(1), 1–11.
- Morshidi, S., & Chang, D. W. (2018). (Re)positioning humanities in the Malaysian higher education landscape. *Kemanusiaan*, 25(1), 191–206. <https://doi.org/10.21315/kajh2018.25.s1.10>
- Nur Surayyah, M. A. (2009). Human Capital as a Normative account of Education for Morality and Citizenship. Dalam A. R. Fadzilah, P. Faradillah, & E. Habibah (Eds.), *Teacher's Learning Curriculum Innovations and Knowledge Applications* (pp. 63–72). Serdang, Selangor: Universiti Putra Malaysia Press.
- Nurfazwin, A. R., & Nor Fadila, A. (2019). Industry 4 . 0 Civil Engineer Job Skills Required by Employers in Malaysia. *Jurnal Kemanusiaan*, 17(1), 28–31.
- Railton, P. (2017). Moral Learning: Conceptual foundations and normative relevance. *Cognition*, 167, 172–190. <https://doi.org/10.1016/j.cognition.2016.08.015>
- Rokeach, M. (1979). *Understanding Human Values Individual and Societal*. New York: The Free Press.
- Rozana, I., Roslina, I., & Suraya, Y. (2019). Student's Habits And Preferences In Digital Game : A Case Of Designing An Educational Game For Primary Schools Student. *Jurnal Kemanusiaan*, 17(1), 57–59.
- Rubini. (2019). Pendidikan Moral dalam Perspektif Islam. *Jurnal Komunikasi Dan Pendidikan Islam*, 8(1), 225–271.
- Suhaniya, K., & Mohamad Fauzi, S. (2019). Kawalan Ibu Bapa terhadap Anak-Anak dalam Penggunaan Media Sosial (Parental Control Over Children in the Use of Social Media). *Akademika*, 89(1), 111–124.
- Syamsuar, & Reflianto. (2019). Pendidikan dan Tantangan Pembelajaran Berbasis Teknologi Informasi di Era Revolusi Industri 4.0. *E-Tech : Jurnal Ilmiah Teknologi Pendidikan*, 6(2), 1–13.
- Vishalache, B. (2010). The development of Moral Education in Malaysia. *Asia Pasific Journal Of Educators and Education*, 25, 89–101.
- Vishalache, B. (2017). Making moral education work in a multicultural society with Islamic hegemony. *Journal of Moral Education*, 46(1), 79–87. <https://doi.org/10.1080/03057240.2016.1268111>
- Wan Amizah, W. M., & Muhammad Adnan, P. (2017). Media Baharu dan Institusi Raja di Malaysia: Kes Penghinaan Raja-raja di Media Sosial. *Jurnal Komunikasi-Malaysian Journal of Communication*, 33(1), 406–422.
- Wang, H. Y., Sigerson, L., & Cheng, C. (2019). Digital Nativity and Information Technology Addiction: Age cohort versus individual difference approaches. *Computers in Human Behavior*, 90(2019), 1–9.
- Winaya, I. M. A. (2018). Efektivitas Implementasi Model Pembelajaran Tematik Berbasis

- Teknohumanistik Dalam Pengembangan Nilai-Nilai Karakter Pada Siswa SD Dwijendra Denpasar.  
*Jurnal Ilmiah Ilmu Sosial*, 4(2), 102–113.
- Yao, Z., & Enright, R. (2018). The role of consequences of moral action in maximizing moral elevation.  
*Journal of Moral Education*, 47(4), 451–465. <https://doi.org/10.1080/03057240.2018.1428540>



# **LANGUAGE AND LITERACY EDUCATION**

## A Merry Chorus: Learning the Language of Love in the Film *Adiwiraku*

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### ABSTRACT

*Language and literacy are developed at a very young age the world over. A child's mother tongue usually holds sway over every other language. There are many native bilinguals and trilinguals as well. In Malaysia, Bahasa Malaysia is the national language; however, the English language is also considered an important subject in the government school curriculum. In light of this, the researchers feel that the film *Adiwiraku* is relevant in terms of representing the English Language as an important tool of communication as well as a language that can be learned by non-native English speakers. The local film depicts the journey of Cheryl Ann Fernando who was posted at a rural school, Sekolah Menengah Kebangsaan Pinang Tunggal for the purpose of educating the students in the English language. She initially finds it challenging to communicate with these students in the English language due to the students' poor proficiency in it. She gradually learns to engage the students in activities that help the students' English competency. Fernando felt that one major way of boosting the English language skills of the students as well as their confidence was by getting them to participate in a district level choral speaking competition. The method employed in this research is textual analysis of the film. Such an analysis enables the researchers to delve into the communication strategies found in the film genre. The teacher as can be seen in the film begins to empathize with her students' dilemma, leading the researchers to focus on several concepts of empathy; they are as follows: i) communicate a supportive climate where the instructor relates to the feelings of those under his or her instruction; ii) attend to a student's non-verbal and verbal communication where there is understanding of the student's mannerisms; iii) reflect and clarify feelings where the instructor responds accordingly and iv) portray genuineness in being honest about one's thoughts.*

**KEYWORDS:** *Adiwiraku*, choral speaking, communication strategies

### 1.0 INTRODUCTION

In a multi-ethnic nation like Malaysia, the English language is not only considered a very important language but is encouraged to be used at many levels, starting at schools. In fact, many parents, especially in urban settings try to get their children to speak English at home as well. One of the ways to get to speak, learn and practise the English language is through the reading of newspapers, magazines and watching the news and films. Films, being a medium which is popular with students, are encouraged to be used as a language learning tool. Even non-native speakers have been seen to have improved their command of the English language through electronic media.

In Malaysian schools, learning and mastering the English language is deemed important. More and more educators are finding creative ways and means to ensure the learning of a language not native to many of the students in schools, especially in the government, especially so in the rural schools. The movie, *Adiwiraku* (Ong, 2017) depicts the said scenario. The school SMK (National Secondary School) Pinang Tunggal, considered a government school in the rural northern state of Kedah has students primarily from the Malay community attending classes. There are two teachers of the English language who join forces to train the students to participate in the choral speaking district competition. Seen as a near impossible task, the pair go on to recruit members for the choral speaking and the challenges they face can be empathized with by the audience. This paper will describe the trials and tribulations of the educators, particularly that of Cheryl Ann Fernando, in whose first person narration the film is addressed to the viewers. Fernando's narration is in Bahasa Malaysia although the dialogues in the film are delivered both in English and Bahasa Malaysia.

*Adiwiraku*, the Malay phrase for 'My Superhero' is the way the teacher Cheryl Ann Fernando views her students at the end of her teaching term of two years with the students of SMK Pinang Tunggal.

Fernando, who had previously been a public relation (PR) consultant for four years, decided that since she enjoyed teaching the students at her church, she would delve into teaching. After a stint at an international school, she joined to train at a non-profit non-governmental organization (NGO) called 'Teach for Malaysia'. Those who train here are volunteers who are sent to non or under-performing schools in the rural areas of Malaysia (Yiswaree, 2017). Inspired by an article written by Fernando about her teaching experience at SMK Pinang Tunggal, came the idea for a film directed by Singaporean Eric Chong and produced by SOL pictures Filmmecca Studio (Yiswaree, 2017). The film was released on 9<sup>th</sup> March, 2017 and it went on to garner the best film, best actress and best original story awards at the 29<sup>th</sup> Malaysian Film Festival in 2017 (*The Star Online*, 2017). An added accolade is the 2018 win by Eric Chong for the film *Adiwiraku* is the diploma of honor for the best feature film at 48th Roshd film festival, Tehran, Iran (<https://www.facebook.com/adiwirakuthemovie/photos/adiwiraku-has-been-awarded-the-diploma-of-honor-honorary-prize-for-the-best-feat/1067636056731559/>).

The textual analysis of the film *Adiwiraku* is the method employed to focus on the core issues of the paper. These involve the teaching of the English language to non-native speakers as well as the challenges faced as well overcome by the leading protagonist in the movie. The movie is based on the true story of Cheryl Ann Fernando, who as a part of the Teach for Malaysia plan, is sent to a school in northern Malaysia to teach the English subject in an underperforming school. Fernando's character is portrayed by local actress Sangeeta Krishnasamy. The majority of the students of SMK Pinang Tunggal choral speaking team, namely Zidane and Nur Idina, were cast as themselves in the movie. Through the analysis of the text, the researchers came up with a thematic fragmentation of the four empathy concepts which are discussed in the paper.

## 2.0 CHORAL COMMUNICATION

Choral speaking has been a component in language lessons. In every country, there are choral speaking guidelines especially when it comes to competitions. In Malaysia itself, choral speaking competitions are held at school, district and national levels. What makes choral speaking popular is that many nuances of the language are studied and performed. Choral speaking is encouraged in Malaysian schools to build the confidence of the students in the use of the English Language, especially in pronunciation and articulation.

Choral speaking is basically a group recital of a poem or a dramatic piece which includes various voice combinations. Intonation is considered very important as it is the quality of the voice that indicates the tones and flavours of the script. The judging criteria involves factors such as subject matter, articulation, voice types, rhythm and timing, natural sound effects and natural demeanour. According to the Ministry of Education in Malaysia (<https://www.moe.gov.my>), a few guidelines are as follows:

- i. The members of the choral speaking team must be of the same school.
- ii. The script format can be either poetry or short prose with a preference for originality and authenticity
- iii. The performers must be dressed in their respective school attire
- iv. The content of the script should not include sensitive topics such as race, religion, politics and so on.
- v. There should not be any background music and props.

The researchers found that the entire challenging experience for Fernando can be encompassed in the four domains of empathy which includes communicating a supportive climate, identifying the unique abilities of each child, accurately reflecting and clarifying feeling and being genuine (Samovar, Porter and McDaniel, 2007: 281-282). These four domains are explained below.

## 3.0 EMPATHIC ENVIRONMENT

In *Adiwiraku*, Fernando is at first stressed by the attitudes and the mischief by the students. It was not easy to cope with temperamental and raging teen hormones at the school. A student was seen throwing a chair at a schoolmate. Fernando needed to step in to stop the fight. On realizing the behaviour of the various students, she felt a need to understand the provocations rather than judge them at random. On receiving a circular regarding the Kuala Muda district level choral speaking competition, Fernando talks to

fellow teacher Constant and although not really thinking it possible, decide to give it a try. The decision for the script comes when a song is heard playing in Constant's car radio. Fernando composes the lyrics and then decides to form a team. When Fernando and Constant are not met with much success due to the poor proficiency in English (pronunciation and enunciation), lack of confidence and equally poor attendance, on studying these factors, Fernando reaches out by creative methods to lure the students.

Based on the textual analysis, the researchers believe that it is important that despite not feeling welcomed by the students, an instructor makes the environment conducive for the learners to study in. The instructor can only do so if she can understand the feelings and needs of her students rather than judge their temperaments. At this instance, it necessitates the instructor to provide nourishment especially for the under achievers in what can be termed the communal classroom or learning environment. One of the ways to get students to register as participants was to offer packet drinks and food snacks. Also, upon completion of practice at late hours, students were chauffeured back to their homes. There was also a time when they went out for a break of 'ice cream' consumption. By producing a climate of support and showing empathy, an instructor can reach out to even the most introverted learners.

#### 4.0 COMMUNICATIVE CHALLENGES

In *Adiwiraku*, Fernando discovers that one of her brighter students Alia, is rather withdrawn and seems to experience pain on her right hand. Fernando cares enough to follow her home to discover why she landed such bruises on her right hand. On getting to know that Alia from the lower secondary class has to take care of her mentally-ill mother who gives her a beating every time she gets home, literally breaks Fernando's heart. She cannot imagine a child having to go through all this and still get to school to study. It can be seen here that the instructor has looked beyond the verbal messages of the learner, which leads to very interesting, albeit painful discovery of the circumstances in which one lives.

In another instance, Kemboja, who is generally MIA (Missing in Action) for many classes, suddenly turns up. Reading her body language, Fernando makes her feel welcomed in the class by limiting her questions to her. It is only on learning that Kemboja needs to work to support her sickly father that Fernando gets to know why she cannot make it to classes regularly. Fernando offers to help by providing whatever financial assistance she can to the father but the father declines as he says this situation was not going to improve as what she offered was for a short duration. One can see how by reading between the lines, Fernando does her best to empathize with Kemboja's dilemma. When Fernando insists that Kemboja attends school regularly, she is devastated when Kemboja asks her if she has ever been hungry. To study on an empty stomach is nigh impossible, she reiterates. Fernando can only sympathize.

In the case of Alia again, although the teacher feels that Alia's mother is responsible for Alia's situation she needed to understand that Alia's mother not being mentally stable still loves her daughter but has to release her frustration through physical abuse. Fernando could not afford to be judgemental about Alia's mother as Alia herself has so much love for the mother who does not seem to have a choice but to inflict pain on her daughter. Fernando needed to understand the filial piety through Alia's non-verbal cues.

From the textual analysis of the movie, the researchers believe that an instructor must learn to meta-cognate as spoken messages have various levels of meanings. To best deal with a learner, it is necessary to understand the learner's verbal and non-verbal cues (Samovar, Porter and McDaniel, 2007).

#### 5.0 REAL REFLECTIONS

One of the students in the choral speaking team decides not to be a part of the team any more. When he insists on leaving for the reason that he just wants to leave, she lets him go. She then goes on to ask if anyone else wanted to quit the team. A few students raise their hands and she lets them go without further question. Fernando is basically trusting the reasons, whatever they may be, for the students to leave the team. Fernando opens up her home to the students to study in during their free time. One student Iqbal who is not good at English tries his hardest to learn as he is interested in the reward system of stickers advocated by Fernando. She distributes stickers in the class to anyone who makes a good point or gets the answer right. It becomes a matter of pride for the students to get as many stickers as possible. Iqbal is interested in getting his 20 stickers for good work and this incentive makes him learn English quicker. He also relates to Fernando that he wants to gift a schoolbag to his sister since her schoolbag is no longer useable. Fernando promises him one after the Hari Raya holidays. As Iqbal is innocent and honest in asking her for a gift, it

reflected his real thoughts. This incident however becomes a point of heartbreak as Iqbal loses his life in a road accident due to his not donning a helmet when riding his motorcycle.

With her introduction of the 'sistem ganjaran prestasi' or reward system, in which stickers are handed out to students for a job well done, Fernando is reflecting the hidden potential of the students in learning the English language. To understand another human being one of the important factors is to respond to what people say and act accordingly. The further step is to reflect on the meanings of the expressions. Seeing the expressions of simple joy and pride in their achievements make Fernando reflect on how she can further explore possibilities of using other reward mechanism. It can be seen that the students reciprocate by becoming more engaging learners as they reflect on the instructor's interest in them.

## 6.0 TRUTHFUL TAKES

In one of the scenes in *Adiwiraku*, after Fernando discovers that Alia's hand is bruised, she and Constant take her to the clinic for treatment. Although Fernando knows about the cause of the bruises, which are a result of the abuse by Alia's mentally unfit parent, she does not divulge it to anyone so as not to break Alia's trust. Here, one can experience the relationship between Fernando and Alia being cemented by a bond of trust as well as love.

In the case of the leader of the choral speaking team, Zidane who is frustrated by the group not being perfect enough, he becomes emotional as he constructs the team as 'his' team rather than everyone's team. It is Zidane who has managed to put the team together. This is why he tries so hard to get the team to be do the best they can. Fernando is angered by Zidane's attitude as she says that it is not HIS team or effort alone, but that it is everyone's team. She is honest and direct with him and he is able to appreciate this after he has cooled down from his outburst. Also, one of the members Idina takes the effort to go and talk to him despite not being agreeable on many points. When people are truthful with one another, there is greater team work as well. When Fernando and Constant have to repeatedly budget their priorities, it is the honesty that they share that creates a better bond.

During the choral speaking competition the students of SMK Pinang Tunggal are awed by the performances of the other schools and they feel that they are not going to go anywhere in the competition. This is when Fernando truthfully tells them that everyone may jeer at them and even compare them but it was up to each of them to prove everyone wrong. She encourages them by saying that the fact that they were participating in this competition was in itself an achievement and that memorizing a 15 minute speech in English is an even greater achievement. By telling them that for her, they were already winners, Fernando is motivating them to shake off their insecurities. As their choral speaking motto reflected 'sakit itu sementara; kegemilangan itu selamanya' (pain is temporary; victory is forever).

At the end of the teaching contract at SMK Pinang Tunggal, Fernando chooses to pursue a doctorate at a public university. As she packs her things in the staff room to leave, she can only think back on all her wonderful memories at the school. When the students approach her to stay another year, she genuinely feels a love for them and tells them to believe in themselves as she believes in them. She tells that she is leaving her superheroes. That in itself is a statement that reflects her real thoughts and feelings. It is when truth is communicated to others, especially learners and young learners at that, empathy is truly achieved.

Many a time, what a teacher says must be in congruence with what he or she does. Learners appreciate honesty and truthfulness in their instructors for it helps the students to establish a genuine rapport with them (Samovar, Porter and McDaniel, 2007). In of the scenes Fernando is seen letting the students into her home for extra studies; here she opens up her heart to the learners and they too welcome her efforts in teaching them not only subject related matters but also values to inculcate and keep. The students allow Fernando into their comfort zone as they have grown to trust her.

## 7.0 CONCLUSION

One of the ways to encourage language and literacy is to introduce creative methods of learning (Luqman, 2019). As experienced in the film *Adiwiraku*, the adoption of choral speaking as part of the school activity encouraged the learning and speaking of the English language. The pedagogical implications of using choral speaking in teaching communication are various. Among these are to improve the grammatical structure of the said language, teach pronunciation, inculcate a love for form and rhythm, raise confidence and encourage communication. The teachers trained the team well especially since competition is tough

when up against more urban schools. The story of Cheryl Ann Fernando and the SMK Pinang Tunggal choral speaking group as portrayed in the film has inspired many schools in Malaysia to take up this activity and engage in competitions.

It must be remembered that it takes courage, determination and effort to train students in any endeavour. The inspiring story of Fernando only goes to show that if a teacher sets her heart and mind on doing something constructive for his or her students, it will bear fruit. Fernando had to spend a lot of time on tutoring the students outside of school hours; she also had to use a major part of her monthly income on the needs of the students. Sacrifices made by educators must not be taken for granted. It is not about the winning of a competition but the journey of getting students to love what they learn and to help them build their confidence and the skills needed for their future. For the students, this can be a priceless learning experience and for the teacher, it is the satisfaction of a job well done. Only when a person can empathize with another that things will work well for both. It is about making a merry chorus and about learning the language of love. For Fernando, her students were her 'Adiwira' but for those she had taught at the school, she was their 'superhero'.

## REFERENCES

- 2017, September 24. 'Adiwiraku' wins Best Film at 29th Malaysia Film Festival. *The Star Online*. Retrieved 6 August 2019 from, <https://www.thestar.com.my/news/nation/2017/09/24/adiwiraku-wins-best-film-at-29th-malaysia-film-festival/>
- Choral speaking competition for primary and secondary schools: Rules and guidelines. Retrieved 6 August 2019 from, <https://www.moe.gov.my/index.php/pekeliling/surat-siaran/1082-choral-speaking-competition-for-primary-and-secondary-schools/file>
- Facebook. *48th Roshd film festival, Tehran, Iran 2018*. Retrieved 6 August 2019 from, <https://www.facebook.com/adiwirakuthemovie/photos/adiwiraku-has-been-awarded-the-diploma-of-honor-honorary-prize-for-the-best-feat/1067636056731559/>
- Luqman, H. M. K. (2019, August 25). 'Newspapers bring the world into classrooms'. *New Sunday Times*. P. 11.
- Ong, Eric (2017). *Adiwiraku*. SOL Pictures.
- Samovar, L. A., Porter, R. E. & McDaniel, E. R. (2007). *Communication between cultures* (6th ed.). California, CA: Thomson Wadsworth.
- Yiswaree, P. (2017, February 11). How one woman became a teacher and ended up in a movie. *Malay Mail Online*. Retrieved 6 August 2019 from, <https://www.malaymail.com/news/malaysia/2017/02/11/how-one-woman-became-a-teacher-and-ended-up-in-a-movie/1312303>

## SCAFFOLDING SPEAKING FLUENCY USING THE VIDEOBLOG PORTFOLIO

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### ABSTRACT

*With the upsurge of technological advancement, the internet and social media, many studies on instructional practices in English Second Language (ESL) classrooms with the use of technology have been carried out to match the 21st century learning climate. Practitioners, curriculum designers and scholars continue to explore the potentials of using various media tools that can support teaching and learning. Today, frequent engagement with social media and the internet has allowed learners to sharpen their English language communication skills. This study explored the potentials of using video blogging portfolio to improve speaking fluency among ESL learners at a higher learning institution in Malaysia. The researchers employed an exploratory single case study to mitigate the existing gap that is linked to the limited opportunity and exposure Malaysian ESL learners have to communicate using the second language, L2. In the effort of encouraging communication using the language, the researchers employed the use of the social media platform, as the vlog-portfolio to systematically compile learners' communicative activities. An instructional module was designed by the researchers and integrated into an existing curriculum as a project based learning. Field observations and post interviews were used to identify the scaffolding techniques employed by the learners. Fluency and pause rates were also measured to determine the outcome of the project. The findings revealed that learners showed developmental patterns in their speech fluency rates. A focus group interview revealed that learners were able to practice English extensively with the vlog-portfolio project. Besides producing speech, they also actively participated in assessing their spoken language performance through peer-reviewing sessions using a qualitative case study document which encouraged self-assessment, peer-assessment and reflective practices among learners. The researchers concluded that the vlog-portfolio is beneficial as a learning tool as it complements instructional needs, encourages feedback, helps learners improve on fluency, and allows learners to practice speaking using a social media platform.*

**KEYWORDS:** Video blogging, peer-scaffolding, e-learning, instructional practice, English second language

## 1.0 INTRODUCTION

The use of English for communication has become a need for countries worldwide to develop both socially and economically. For this reason, the first in anticipating globalisation is to acknowledge the role of technology that is significant of this age (Lowell & Thakkar, 2013). Technology eases the transfer of information across the world which is evident in the surge of social media — enabling people to connect despite their distances. At this juncture, studies in the world of English Language Teaching (ELT) that are connected to technological development are important with the upsurge of innovations in language teaching and learning to be in line with the education framework.

### 1.1 Problem statement

Giving speeches in front of a large audience is believed to cause speaking-anxiety upon learners, which hinders them from attempting any English conversations in impromptu or face-to-face conversation especially among English as a Second Language (ESL) and English as a Foreign Language (EFL) learners (Pertaub, Slater, & Barker 2002; Woodrow, 2006; Tanveer, 2007). In Malaysia, surveys still show that common problems in communication during interviews among graduates include poor speaking skills,

inability to comprehend questions, and lack of interaction skills (Saleh & Murtaza, 2018; Alias, Sidhu, & Chan, 2013). At schools, it was suggested that students were found to be rather passive when they have to speak in the classroom (Kaur, 2015). Likewise, scholars (Darmi & Albion, 2013; Hassan & Selamat, 2002) agreed that school students are not given enough support for their learning especially in nurturing listening and speaking to improve communication in the second language (L2), hence there is minimal exposure to practice L2 within a meaningful communicative context at primary and secondary levels. It can be deduced that the problem transpires across educational levels from schools to postgraduate education. Hon (2018) suggested giving meaningful and relatable tasks to learners will consequently be more engaged in learning. Thus it is a necessity to conduct further studies on instructional designs that subscribe to this belief, so more applicable learning tools can be discovered to enhance educational outcomes.

In an English as a Second Language (ESL) or English as a Foreign Language (EFL) environment, it is uncommon for learners to be using English in communicating especially with a multiracial background in Malaysia. Henceforth, the current study aimed to investigate the use of Instagram as an e-portfolio to encourage communication among L2 speakers. It was to mitigate the problem of using the L2 and the lack of exposure to the target language. The researchers employed the use of the social media platform, Instagram as an e-portfolio – redefined as the vlog-portfolio to systematically compile learners' communicative activities. The collaborative video blogging project provides an alternative solution to the lack of exposure to the L2 and lack of engagement in speaking activities among ESL learners. Therefore, video blogging was proposed as a tool to enhance speaking fluency among ESL learners at a higher learning institution in Malaysia.

This paper sought to answer the following research question: To what extent does the vlog portfolio develop oral fluency through peer scaffolding?

## 1.2 Video blogging and L2 Learning

Video blogging or *vlogging* has been chosen as a tool to help learners practice their spoken English, and it has gained popularity over the years (Mogallapu, 2011). Video blogging is believed to not only allow learners to practice the language regularly as opposed to using only summative assessment methods and in-class communicative activities, but it transcends beyond the classroom – which opens the doors for them to participate in collaborative blended learning among peers (Hung, 2011; Lim, 2013; Shih, 2010). Lim (2013) in her study notably paints video blogging as a new and possibly more effective form of communication tool. It is a platform of expressions and provides comfort and a less threatening environment for those who utilise it to speak up their thoughts. These studies suggest that video blogging does possess the potentials to be used as a learning tool to supplement formal learning.

Moreover, Sharples and Domingue (2016) argued that although it is possible to attend different courses and seminars on public speaking, opportunities to practice and receive feedback from tutors or peers under realistic conditions are limited. The study conducted by Gorkaltseva et al. (2015) also argued that oral fluency was severely hindered because of the learners' low motivation for verbal interactions, which resulted from the two major factors: learners' lack of pragmatic competence and lack of linguistic competence. The evidence given by Gromik (2015) and Chen (2006) supported that EFL learners, unlike ESL learners, do not have adequate opportunity to use the language during non-contact class time.

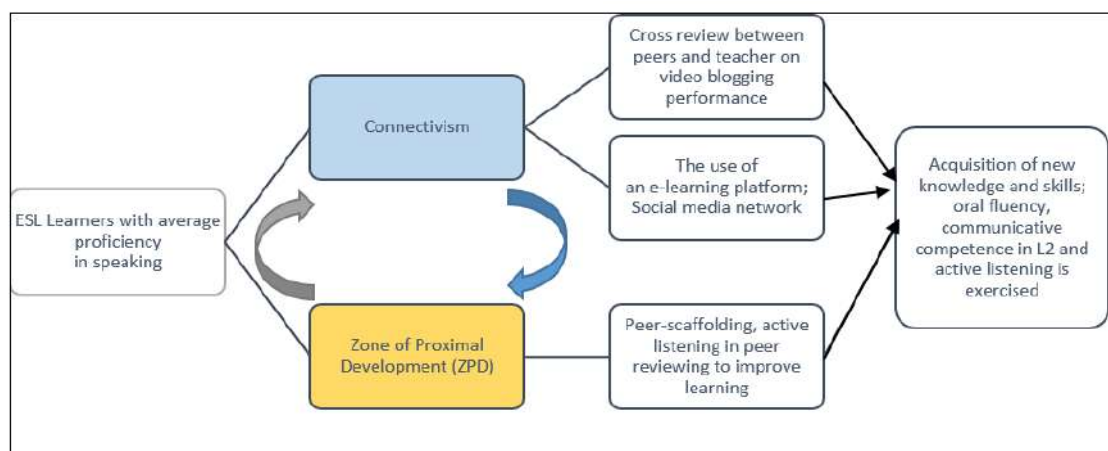
Jong and Hulstijn (2009) break oral proficiency into three major aspects, which are fluency, accuracy, and vocabulary. Fluency was chosen as the speaking criteria in this study as its measurement of outcome. According to Barnard (2018), the average speaking rate changes dramatically for the purpose of speech and the time of response. He quoted the National Center for Voice and Speech, that the average conversation rate for English speakers in the United States is about 150 words/minute. The current study seeks to analyse oral fluency development among ESL learners after being exposed to the vlog-portfolio project using a fluency rate formula. The theories of scaffolding by Vygotsky (1970) and Connectivism by Siemens (2004) underpin the use of video blog tool to scaffold learning.

### 1.1.1 Theoretical Framework

In the present study, video-blogging portfolio is seen as the supportive learning tool to facilitate learning. This study integrates the Zone of Proximal Development (ZPD) by Vygotsky (1970) and Connectivism by Siemens (2004) that emphasise learning through peer support and a technological mediation as a learning tool. The present study adapts these theories as both acknowledge collaboration among students with peers through a network to stimulate progress in learning. Additionally, the two



theories also recognise other learning tools like social media, mobile technology, and the internet besides teachers to enhance learning. The researchers believe that a video based project such as developing a video blog portfolio using the social media is a potential learning platform, paramount for speaking development with its scaffolding properties and collaborative opportunities.



**Figure 1:** Theoretical framework showing the theories that underpin the study.

## 2.0 METHODOLOGY

The study uses qualitative design where the researchers employed a single case study on the application of a video blog portfolio in a higher education setting with a group of ESL learners. The participants were purposively selected to only possess intermediate to advanced level of proficiency in English. This was determined through their MUET band scores (3-5). The instructor of the course assisted the researchers in identifying these participants. They were all taking a similar module of an English proficiency course. A module was developed to guide the participants to conduct the project. The module was aligned with the course objectives stipulated in the curriculum with guidance and feedback from the course instructor. A total number of 19 participants took part in the study.

To address ethical concerns, participants' identities and their educational institution are kept anonymous, so participants were given pseudonyms. The findings may not be generalised to other studies as they are only applicable to outside the parameter of the study and any audio visual records must only be used for the project. The social media used as the e-portfolio was set to private, accessible only to the participants and the researchers throughout the course of the study. The researchers then disposed of and blocked any access to the digital audio visual recordings after the study has been conducted to preserve the privacy of the data.

To conclude, the methods of data collection involved were observation of peer interaction, which is where the researchers observed and took the field notes of participants interacting in a discussion. Next the data was collected through a focus group interview, which took place at the end of the video blog project with 7 randomly selected participants, and a qualitative document was collected for 10 consecutive weeks.

## 3.0 DATA ANALYSIS

Data analysis conducted involves coding and clustering themes from peer interaction transcripts, focus group interview and speech fluency rates. Findings are presented based on the themes that emerged from the data, including excerpts from the transcripts. This is followed by interpretations of the data and the use of infographics to illustrate the speech fluency development. Data for the speech analysis were collected from a qualitative document designed by the researchers. This document is called the Speech Review Report (SRR) form. Peer validation from practitioners and an expert of the field were conducted to ensure the validity of the document. A preliminary study was carried out to ensure the face validity of the document. Besides this form, the data was also sourced from audio visual records, video and interview recordings, which were strictly kept in privacy, and disposed of at the end of the study.

A speech fluency analysis was executed to distinguish fluency rates throughout the video blog project. The researchers adapted the formula used in past studies to measure the oral fluency rates (Abdi, Eslami, & Zahedi, 2012; Jong & Hulstijn, 2009; Tavakoli & Skehan, 2005). The formula measures Speed rate, with the total number of words uttered by the speaker divided by the total time of response (120 seconds).

## 4.0 RESULTS AND FINDINGS

The researcher used qualitative data analysis tools to help organise the data. Then, possible themes derived from the data were elicited. Interrelating themes/description were then clustered together. Member check was employed to help validate the accuracy of these themes. Finally, the interpretation of meaning of emerging themes/descriptions were drawn. Below are the themes that constantly emerged during the study clustered into three sections, observation of peer interactions, focus group interview, and analysis of speech fluency.

### 4.1 Observation of peer interactions

#### Theme 1: Frequency of practice

For the first theme, the participants' responses implied that they required multiple attempts to complete the task. Participants recorded their utterances several times in order to produce the video speech. The researchers probed a question during the peer reviewing session.

#### Probe: How many times did you record yourself before posting the video blog online?

Amirul: *Uhhmm... for this chapter I recorded for 3 times.*

Bazilah: *I think more than 3 times.*

Cindy: *Aaa I record myself 3 times.*

Oz: *2-3 times.*

Ell: *So for me I actually take a lot of videos in the past, but for this video actually I try twice (2 times).*

Farid: *More than 5 times*

Gamora: *I also more than 5 times*

Harris: *4-5 times*

Lang: *About ummm 8!*

Daniel: *I record myself around 10 times.*

Isolde: *I think 10, above 10*

Nana: *aaa not more than 10 times*

Statement	Frequency
1. Participants who recorded their video speech once before publishing the content.	0
2. Participants who recorded their video speech twice before publishing the content.	2
3. Participants who recorded their video speech three times before publishing the content.	3
4. Participants who recorded their video speech four times before publishing the content.	1
5. Participants who recorded their video speech five times before publishing the content.	2
6. Participants who recorded their video speech six times before publishing the content	4

Figure 2 shows the recording frequency attempted by participants.

The vlog project from the beginning was to encourage participants to practice their English no matter what their proficiency levels are using a technological tool. The feedback above reveal that participants actively participated by rehearsing their video blog speech multiple times. Previous studies claimed that it is necessary to supplement formal learning with additional tools in order to see significant improvements.

Hsu et al. (2008), utilised audio blogs in his study to increase extended learning beyond the formal learning setting. Initially participants of his study spent approximately six hours a week in the classroom, yet it was deemed insufficient to result in a noticeable difference in communicative skills. Therefore, an audioblog was integrated into the curriculum to meet instructional needs to improve the language learning process and learning outcomes. Participants showed encouraging results after the audioblog was implemented. Although their language did not show significant improvements, the participants' motivation in using audioblogs was apparent. More importantly, the audioblog eased feedback transfer with the application of the audioblog. Sharples and Domingue (2016) posited that although it is possible to get exposure to public speaking in regular communicative classrooms, opportunities to practice and receive

feedback from tutors or peers under realistic conditions are limited. However, the study by Hsu et al (2008) found that technology and blended learning can change these two conditions.

It is therefore deduced from the above that to enrol in a classroom alone is not sufficient for learners to progress significantly, hence an alternative technological media was suggested to supplement formal instruction. The researchers then observed that the video blogging method has the potential corresponding to the instructional needs. Learners were able to practice their spoken language outside of classroom contact hour at a maximum extent following their personal pace. This aligns with the theory of Connectivism, which induce technology to expedite network and increase learning opportunities.

During the interview sessions, the researcher asked the participants how video blogging has helped them improve their communication in English. This was after 7 weeks of intervention and it was their final video blog project. A majority of the respondents replied with a unanimous voice that the video blog has helped them speak with more confidence. Below are excerpts of the responses:

## **Theme 2: Video blogging and learners' improvement in communication**

### **Probe: How does the video blog help improve communication in English?**

Amirul: *Video blogging helped me with my communication because it help me realised that I could actually speak fluent English and it help me on my confident.*

Bazilah: *It will help us to improve not to be shyness cause some of us are not usually talk in English. Also, it will improve our confident for presenting something when talking English.*

Ell: *Yes, video blogging help me improve my communication with other people. It make my English more fluent and smooth, and then these exercises will give me more courage to actively communicate in English.*

Lang: *Video recording does help me a lot video recording with friend is a good idea too because more to normal conversation, video blogging helps me to improve my English because you talk every week and become a habit.*

The feedback from the participants imply that learners did benefit from the vlog portfolio project especially in the development of their oral fluency, building confidence in speaking or presenting in English, interpersonal communication, and helps them form the habit of practicing English at their own leisure. The findings are parallel to Hung's (2011) findings in a study on video blogging. He reported a number of advantages associated with vlogging, such as visual representation, relief from time constraints, self-evaluation, professional development, wider audience, peer learning and technical capability. However, some students also exclaimed that the video-blog did not leave much impact on their overall performance. Below are their feedbacks on the video-blog project.

## **Theme 3: Video blogging did not help in improving learners' communication in English**

### **Probe: How does the video blog help improve communication in English**

Isolde: *I think video blogging didn't helps me a lot but I think it's a good try for me and it's a new experience for me.*

Khayma: *The video blogging let me learn how to speaking in front of the camera, but not people, this don't decrease my nervous.*

It was suggested that video blogging only allowed participants to speak in front of the camera instead of a real life audience which did not help reduce anxiety in public speaking. Weak linkage to real-time communication was also addressed by Hung (2011). The feedback implied that learners may not benefit as much if exposure is only done through video-blog practice but they also require real life public speaking practice to benefit more in terms of improving their oral fluency in speaking. Thus, online interface alone does not allow learners to fully experience improvement as the experience of speaking in front of the camera is not the same as speaking in front of the real life audience.

## **4.2 Focus group interview**

This interview took place after the video blog project. 7 participants were chosen to participate in this interview. Their responses were transcribed and analysed to draw the relevant themes that help the researchers to answer the research question. A set of open ended questions were probed to the participants who took part in this group interview, and below are their responses.

### Theme 1: Video blogging has helped participants improve their spoken English

#### Probe: How does video blogging help you improve your English?

*"I think I have used more words and improved my language after the vlog project as I know learn my mistakes and I improve it. I think I can more easy speak a lot more within 2 minutes after the vlog project, because this project is a practice, make me more confident talk in front the people. I feel like I have improved my pronunciation after the vlog project, because I practice again and again. I feel like I commit less fillers if I does not feel nervous. I believe that the vlog project if practice can help students improve their spoken English."*

The response implies participant's improvement in oral fluency. Participant indicated that he has improved in terms of speech delivery. The participant explained that he could speak more within 2 minutes after participating in the video-blog project. Furthermore, he explained how the vlog project has enabled him to practice using English and prepare for a more challenging task such as giving a speech in front of a real life audience. Gromik (2013) in his study found that through video blogging, students were able to increase the number of words they spoke in their speeches over the length of the term. Henceforth, it is consistent to the response given by the participant of the current study where video blogging benefits students in terms of their speech development.

### Theme 2: Video Blogging Takes Time to Complete

#### Probe: How does video blogging help you improve your English?

*"First of all, throughout filming the video I do used more words and improve my sentence structure after the vlog project. I think I can speak a little bit more after the vlog project. Lately, my pronunciation also improving a lot compare to before this. Moreover, the fillers that I've made depends on the things that I interested. If I'm good enough in the field, I would speak fluently compare to the part on title which I done before for example video 5 and video 7 is the most vlog that I'm satisfied with. Lastly, I think it will help students to improve their spoken English in any form of field because we need to know what we're speaking so the sentence structure should be smooth, simple and clean to understand but it takes time to do with it since it need to find relevant and useful information in the process of doing the script. After complete the script, I need to film it and sometimes if done some mistake it has to be record and re-take again..."*

The next participant further also supported that he could speak slightly better after conducting the vlog-project. Furthermore, he added that the pauses or filler committed would depend on the topic of interest. This is a new interesting finding describing how the learners' topic of interest could also impact their oral fluency, which was also addressed by Gromik (2013) in his study topic variations did determine students' perceptions on task difficulty. The participant concluded that the video-blog portfolio could help learners improve their spoken English in any fields because it is important to know what is being spoken, thus the video-blog has helped him to reflect on his speech. This feedback is parallel to the results of the study from Hung (2011), where the students favourably perceived the vlog project because vlogs not only helped them organise and reflect on their learning products, but also allowed them to archive their learning.

However, in completing the task, the respondent also implied that the vlog-project takes time to be completed as thorough planning was needed to find relevant information and also to draft a script for the speech. This is highly consistent to one of the challenges suggested in past literature (Hung, 2011). After the script was completed, participant explained that due to many errors and attempts made in the process of recording the video, it took a lot of his time before he could post the final product of the video. This valuable response allows the researcher to understand that in conducting similar project based learning in the future, a more realistic task is needed, so it is more efficient and practical to the learners as well as the instructor (Hsu et al, 2008).

Lim (2013) in her study found that video-sharing websites are fast becoming popular, albeit contested, spaces for critical documentary and experimental works to inform, educate, and encourage discourse among young adults. Therefore, video blogging could be a suitable tool to be integrated in today's classroom. This study suggests that, video blogging can be an alternative enabler for language learners who do not practice the L2 on a regular basis.

### Theme 3: Video blogging allows participants to practice English

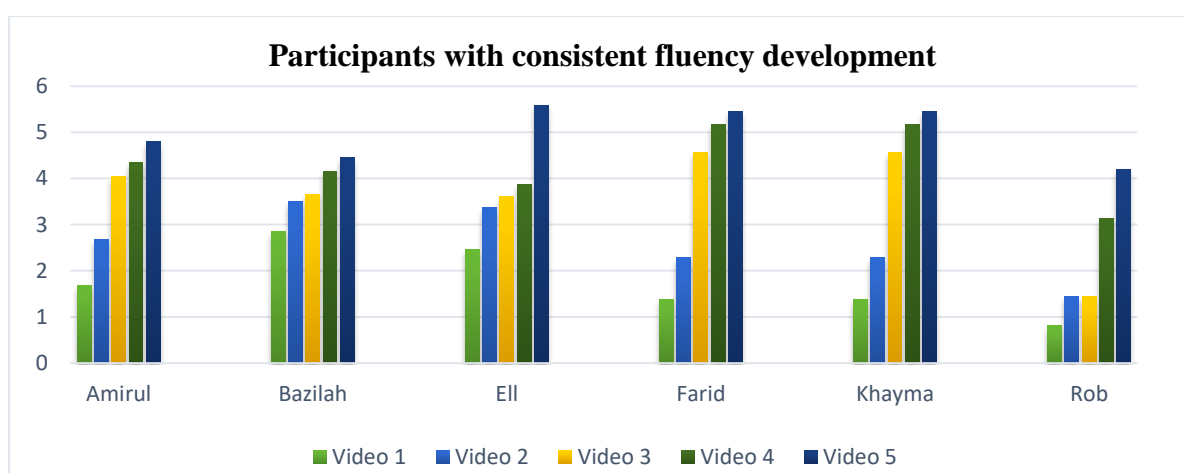
#### Probe: How does video blogging help you improve your English?

*"Do I think vlogging improved my English? Yes, vlogging did improve my language I can talk with it more confidence. Yes, I can and a lot of my videos are more than two minutes. Sure it can improved my pronunciation, I found it I won't talk a lot of ummm, a – I do believed because a lot of students didn't speak with English when they talk with their family and friends so this is a very good chances for us to talk every week it is a good pratise."*

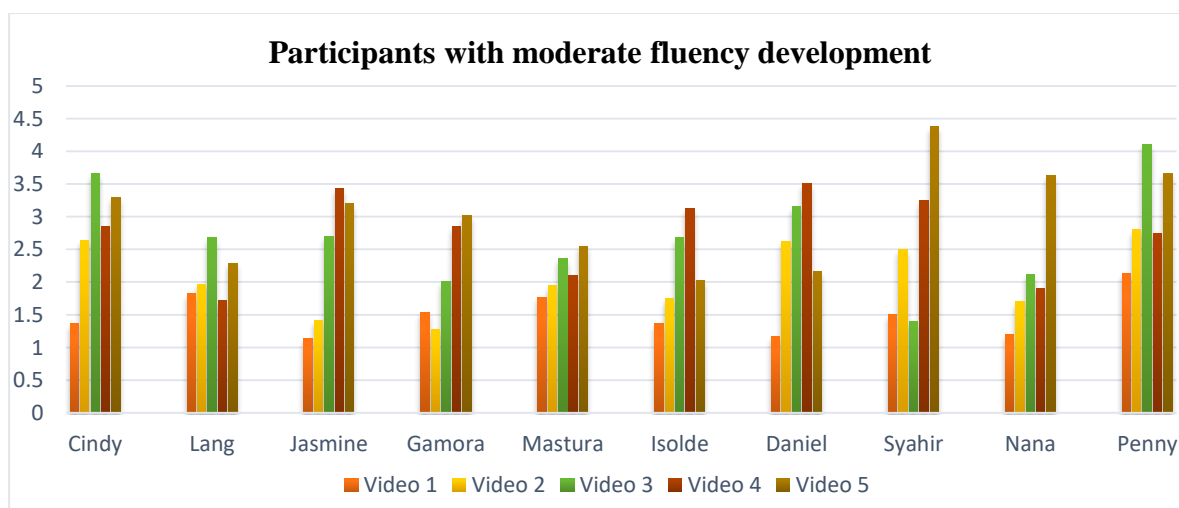
The feedback suggests that using video blog method as a supplementary media has enabled learners to practice English outside of classroom contact hour. Learners generally do not English when speaking to family and friends. Therefore, with the video-blog project they could speak English every week and practice to improve their communication in the target language. She also agreed with Farid and Amirul that the video blog has increased learners' confidence in speaking English

#### 4.3 Analysis of speech fluency rate

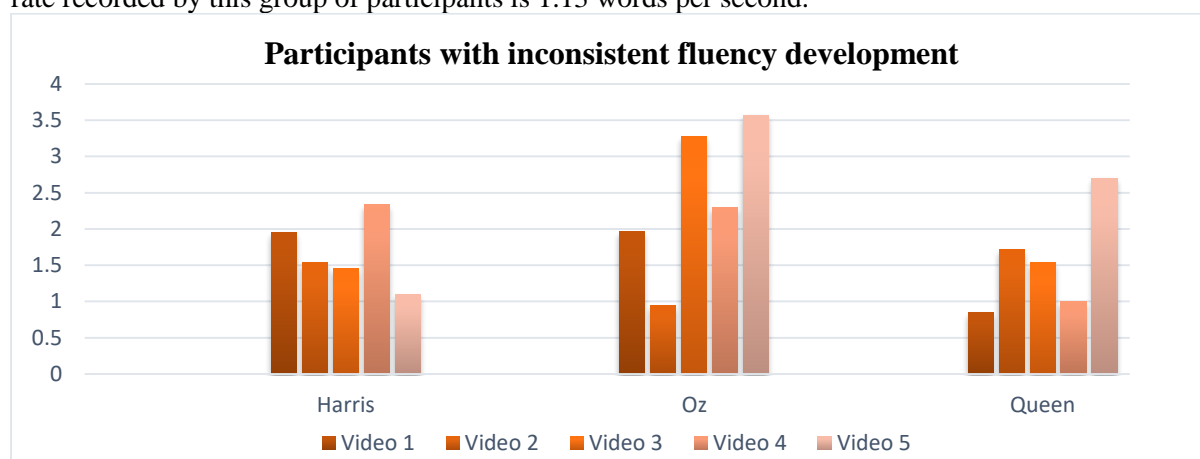
Table 1 reports the fluency rates of learners throughout the course of the video blog project. The frequency of words used within total time of response is the descriptive data mainly used to represent fluency development. The data then was derived from the formulas adopted from (Gromik, 2013; Abdi et al., 2012; Jong & Hulstijn, 2009). The first formula of Speed Fluency measures the fluency rate. The participants' video blog entries were transcribed within the total response time of 2 minutes. The columns represent their speech fluency in 5 video blog entries.



The bar graph of **Figure 3** illustrates the participants of this video blog project with consistent fluency development. Six out of nineteen participants have shown consistent development. It is therefore concluded that the video blog project to some extent does help the participants exercise their fluency and improve in their speech. The highest fluency rate recorded is 5.59 words per second and the lowest 4.20 words per second. By the standard of the speakers' fluency rates, both of them have actually achieved the average speaking pace (Barnard, 2018). However, the limitation of this fluency analysis is the words were transcribed by the participants. Repetitive and unnecessary words were not excluded in the analysis. Thus, the accuracy of the figures may not be reflective to the actual speech rate, yet in this exploratory study it is sufficient to see that learners did succeed in increasing the volubility of their speech rates through constant exposures to video blogging.



The participants in **Figure 4** demonstrate moderate fluency development in their speech fluency analysis. It is unknown to the researcher what influenced their varying performances in their speech. All of the participants' fluency rates increased when the researcher compared their first video blog and their final video blog. These participants only had a drop in their fluency rates once in one of the video blog projects they made. The highest fluency rate recorded is 4.38 words per second while the lowest fluency rate recorded by this group of participants is 1.13 words per second.



The participants in **Figure 5** demonstrate inconsistent fluency development due to frequent fluency rate falls. These participants did not show consistent improvement in terms of their speech fluency, despite being exposed to the video blog weekly, with fluency rates ranging between 0.80 words per second to 3.60 words per second. Each participant's fluency rate dropped two times through the five video blog entries.

#### 4.4 Analysis of Reflection Posts

**SB6:** *Well, this is my first time video blogging so there are so much of mistake and difficult to compete it. The first thing is need to simply memorize it or else I will have to look at the paper which looks unnatural to the screen.*

**SB5:** *This video was my first time recording video blog, it is interesting, but I recorded 10 times sounds terrible*

Participants' feedback suggests the first attempt of vlogging was difficult and they committed many mistakes in the process. They were memorising scripts and were reading rather than speaking. Some participants took many attempts to record, and it was distressing.

**SB6:** *In this video, I find it very interesting. This is because I am a person who loves to work by hand. I also have friends to help me record when I am doing "hand knitting". I have record it one time only.*

**SB5:** *I did about a bunny tutorial. As I made this before, I can just straightly explain how it work. I really enjoy this topic due to I like to make stuff. I speak very rush due to the time limit.*

The reflection posts show the participants' progress after five video blog tasks. Participants described their experience to play a huge role in helping them complete the tasks after several attempts. Participant SB6 demonstrated this by having his/her friends help with the recording while s/he is doing the knitting for the video. After the 5<sup>th</sup> video blog project, participants indicate that they require less time to produce the video. Participant SB5 implied that s/he is able to speak at a faster pace and meet the time limit in the fifth video blog project.

The feedback in the reflection entries of the learners have highlighted three important aspects. First, peer scaffolding or peer collaboration did play a role in helping learners pick up the pace to complete a task (Vygotsky, 1970; Siemens, 2004). Secondly, as participants completed the weekly video blog task, they improved from being dependent to independent or autonomous learners when completing the video blog assignment which is in line with the theory of ZPD. Third, participants were able to time themselves better and adhere to the limit set by the researcher. By this mean, they were able to improve the pace of their speech to effectively deliver the important points without exceeding the time given.

## 5.0 CONCLUSION

The vlog-portfolio has encouraged peer interactions and induced a safe virtual environment for learners to practice communicating in the target language. When sufficient scaffolding was given to learners in the forms of peer support, technology and teacher supervision, learners began to show interest in attempting the L2 with their peers and they became more independent in their learning. For these reasons, it is highly recommended for teachers or instructional designers to consider utilising the social media as a portfolio for learners to try video blogging. This platform is close to the learners, which makes it a relevant learning tool.

## REFERENCES

- Abdi, M., Eslami, H., & Zahedi, Y. (2012). *The Impact of Pre-Task Planning on the Fluency and Accuracy of Iranian EFL Learners' Oral Performance*. International Conference on Education and Educational Psychology (ICEEPSY 2012). Procedia - Social and Behavioral Sciences, 69 (ICEEPSY), 2281–2288.
- Alias, M., Sidhu, G. K., & Chan, Y. F. (2013). *Unemployed Graduates' Perceptions on Their General Communication- Skills at Job Interviews*. Procedia - Social and Behavior- al Sciences, 90, 324 – 333.
- Bakar, N., & Ismail, K. (2007). *Using Blogs to Encourage Esl Students to Write Constructively in English*. Nadzrah Abu Bakar Kemboja Ismail, 1(1), 45–57.
- Barnard, D. (2018). *Average Speaking Rate and Words per Minute*. Retrieved from <https://virtualspeech.com/blog/average-speaking-rate-words-per-minute>
- Darmi, R., & Albion, P. (2013). *English Language in the Malaysian Education System: Its Existence and Implications*. 3rd Malaysian Postgraduate Conference (MPC2013), 2(July 2015), 3–4.
- Fidan, M. (2018). *The Usage of Video Blog (vlog) in the "School Experience" Course: The Opinions of the Pre-service Teachers*.
- García, V. (2015). *Theory of Connectivity as an Emergent Solution to Innovative Learning Strategies*, (February 2014).
- Gromik, N. (2012). *Cell Phone Video Recording Feature as a Language Learning Tool: A Case Study*. Computers & Education, 58(1), 223-230.
- Gromik, N. (2015). *Video Productions with Mobile Phones for Educational Purposes*. In Z. Yan (Ed.), Encyclopedia of Mobile Phone Behavior (pp. 1256-1272). Hershey, PA: IGI Global.
- Hassan, F., & Selamat, N. F. (2002). *Factors That Contribute to the Learners' Speaking Problem*. Manjulah a / p Elangovan, 1999–2001.
- Hiew, W. (2012). *English Language Teaching and Learning Issues in Malaysia: Learners' Perceptions Via Facebook Dialogue Journal*. Journal of Arts, Science & Commerce, 3(1), 11–19.
- Hon, I. (2018). *Reflection Through Blogs in ESL Project-Based Learning*. Universiti Putra Malaysia, Malaysia. 6–7.

- Hon, I., Mukundan, J., & Rezvani Kalajahi, S. (2014). *Perception of Improving English Language Proficiency Through Video Compositions Among Male and Female Students of MRSK Kuala Kai*. *Advances in Language and Literary Studies*, 5(4): 42-59.
- Hsu, H. Y., Wang, S. K., & Comac, L. (2008). *Using Audioblogs to Assist English-Language Learning: An Investigation into Student Perception*. *Computer Assisted Language Learning*, 21(2), 181–198.
- Hung, S. T. (2011). *Pedagogical Applications of Vlogs: An Investigation into ESP Learners Perceptions*. *British Journal of Educational Technology*, 42(5), 736–746.
- Jong, N. De, & Hulstijn, J. (2009). *Relating Ratings of Fluency to Temporal and Lexical Aspects of Speech*
- Kaur, M. (2015). *Effectiveness of Oral Proficiency in English For Secondary Schools (OPS-English) Programme In Improving English Language Vocabulary Among Secondary School Students*. *Advances in Language and Literary Studies*, 6(6).
- Lim, J. B. Y. (2013). *Video Blogging and Youth Activism in Malaysia*. *International Communication Gazette*, 75(3), 300–321.
- Mogallapu, A. (2011). *Social Network Analysis of the Video Bloggers' Community in Youtube*, 1689–1699.
- Pertaub, D.-P., Slater, M., & Barker, C. (2002). *An Experiment on Public Speaking Anxiety in Response to Three Different Types of Virtual Audience*. *Presence: Tele-operators and Virtual Environments*, 11(1), 68–78.
- Samuel, R., & Bakar, Z. (2008). *The Effectiveness of "VELT" In Promoting English Language Communication Skills: A Case Study in Malaysia*. *International Journal of Education and Development Using Information and Communication Technology*, 4(3), 109–126.
- Siemens, George. (2008). *A Learning Theory for the Digital Age: Connectivism*. *Digital Age*, 1–5.
- Shahariah Saleh, N., & Murtaza, S. F. (2018). *English Language Use in Malaysian Government and Private Civil Engineering Workplaces*. *International Journal of Education and Literacy Studies*, 6(3), 84.
- Sharples, M., & Domingue, J. (2016). *Adaptive and Adaptable Learning. Lecture Notes in Computer Science*. Switzerland, 9891, 13–16.
- Shih, R. (2010). *Blended Learning Using Video-Based Blogs: Public Speaking for English As A Second Language Students*, 26(6), 883–897.
- Slater, M., Pertaub, D-P., and A.Steed (1999) *Public Speaking in Virtual Reality: Facing and Audience of Avatars*, *IEEE Computer Graphics and Applications*, 19(2), March/April 1999, p6-9
- Tanveer, M. (2007). *Investigation of The Factors That Cause Language Anxiety For ESL / EFL Learners In Learning Speaking Skills And The Influence It Casts On Communication In The Target Language*. By, (June), 1–92.
- Vygotsky, L. (1978). *'Mind in Society'*. US: President and Fellows of Harvard College.
- Woodrow, L. (2006). *Anxiety and Speaking English as a Second Language*. *RELC Journal*, 37(3), 308–328.



## Teaching Listening in the Digital Society: An Explanatory Study

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### ABSTRACT

*“Listening”, which is a receptive skill, is one of the key competencies addressed in any English as a Second Language (ESL) classroom. When implementing listening activities in the ESL classroom, most teachers use authentic podcasts as materials as they are especially useful for students whose native language is not English” However, in the ESL classrooms, low-proficiency students frequently struggle to comprehend English podcasts. Even in the context of English for Medical Purposes (EMP) in the ESL setting, most of the students face difficulties in comprehending lectures and authentic material presented in English. Elaborating on the necessity of incorporating listening activities in EMP curriculum, Gibson (2013) mentions that various listening tasks such as listening to guest speaker doctors and reporting the facts should be taught in the EMP classrooms. The foundation students gain through these activities aid them to eradicate the barrier of understanding their subject lectures which are conducted in English. Therefore, language teachers are responsible to minimize the difficulties faced by ESL students in listening activities. Addressing this identified issue, the current study was implemented in an English for Medical Purposes (EMP) classroom for students who were unsuccessful in their first attempt of the listening component in their End-of-Course English exam. To prepare these students for their second attempt, nearly 12 hours were allocated for listening classes. Yet, it was inadequate to satisfy their requirement of mastering listening ability to continue their studies in medicine. Thus, identifying their need for resources to access resources to improve listening skills at their own pace, a Computer Assisted Language Learning (CALL) platform was developed as a Self-Directed Learning (SDL) tool. In this platform, various guidelines on improving their listening skills were included alongside several listening activities to familiarize the students with authentic podcasts. In order to obtain participants’ views on the implemented online platform, the present mixed method study uses two main research instruments. The first instrument in the present research is questionnaires, which are distributed among participants. Through the questionnaires, participants’ experience, their views and suggestions for further developments will be collected. In addition, to capture an in-depth understanding of the benefits and drawbacks of the introduced online platform, few interviews will be conducted with randomly selected students. Their interviews will be helpful to identify whether the students actually benefited from the platform. Thereafter, the collected data will be analyzed to decide the impact created by the digitalization of the ESL classroom, with respect to listening activities. It will be compared with students’ experience in traditional ESL classroom, in order to understand the benefits of introducing an online platform as a Self-Directed Learning (SDL) tool.*

**KEYWORDS:** Computer Assisted Language Learning, English for Medical Purposes, Listening, Self-Directed Learning

### 1.0 INTRODUCTION

One of the four key competencies addressed in English Language Teaching is “Listening”, which is a receptive skill. In any English language-learning course, listening tasks are added to ensure students achieve proper listening skills. According to Rost (1994), “listening is vital in the language classroom because it provides input for the learner”. Without understanding input at the right level, any learning simply cannot begin.” Therefore, there is a clear requisite to include listening activities in the language classroom where the learners receive a comprehensible input to enhance their language acquisition.

When implementing listening activities in the ESL classroom, teachers are very likely to make use of authentic podcasts as materials. Commenting on that, O’Byrne & Hegelheimer (2007) state “podcasts hold more potential” in English for Academic Purposes (EAP) classrooms and “they are especially useful for students whose native language is not English” (Read, 2005.)

However, most of the second language learners face difficulties in understanding listening comprehension due to various issues. Especially, low-proficiency students frequently struggle to comprehend English podcasts. Commenting on this difficulty, Brown (2006) explains: “listening is so challenging, teachers need to think carefully about making our activities successful and our content interesting.” (p.1). Thus, through this study, it was intended to determine effective strategies to teach listening in the ESL setting.

The context used to conduct this study was an English for Medical Purposes (EMP) classroom, where students were unsuccessful in their first attempt of the listening component in their End-of-Course

English exam. Most of the ESL learners face difficulties in comprehending lectures and authentic material presented in English, even in the context of EMP. Elaborating on the necessity of incorporating listening activities in EMP curriculum, Gibson (2013) mentions that various listening tasks such as listening to guest speaker doctors and reporting the facts should be taught in the EMP classrooms. Through the incorporation of these activities, the foundation students' gain aids them to eradicate the barrier of understanding their subject lectures that are conducted in English. Therefore, language teachers in EMP contexts are responsible to reduce the difficulties faced by ESL students in listening activities and to improve their confidence and motivation to practice more listening activities.

### **1.1. Motivation for the Research**

When teaching listening to ESL learners, from the researcher's firsthand experience, it was observed that most of the learners face troubles to catch up with the pace of the listening podcasts while comprehending the tasks. Thus, students are affected by the factors of affective filter hypothesis (Krashen, 1982) when acquiring the language. Especially, students do not feel confident and motivated in the language classroom. Therefore, it was noted that a strategy should be implemented in the classroom to reduce the affective factors students face when comprehending listening tasks.

Furthermore, though there are ESL online tools available which the learners can freely access, there are lack of such resources that address English for Specific Purposes, such as English for Medical Purposes (EMP). Consequently, though the students access and practice the other material available online, since they are not tailor-made or target-oriented, they might not be benefited from the activities, as they ought to be. Therefore, there was a clear necessity to introduce a tailor-made platform to improve listening skills in a context like English for Medical Purposes.

Though students practice listening comprehension activities in the language classroom, most of the times they do not practice listening tasks away from the classroom setting, mostly due to the unavailability of the tailor-made tools that fulfill their language requirements. Hence, there was a requisite to implement Self-Directed Learning (SDL) tool where students can be provided with an opportunity to practice language-learning activities at their own pace.

### **1.2. Research Questions**

Based on the aforementioned discussions, the following questions were derived as the research questions of this study.

- What are the difficulties faced by ESL learners when comprehending listening activities?
- How to eradicate the difficulties faced in listening through an implementation of a SDL tool?

### **1.3. Research Objectives**

Through conducting this research, following objectives are to be achieved.

- To investigate the causes for the difficulties faced by ESL learners when comprehending listening activities
- To determine how Computer Assisted Language Learning (CALL) and Self-Directed Learning (SDL) tools can be used to eradicate the difficulties faced by ESL learners when comprehending listening activities.

## **2.0 LITERATURE REVIEW**

### **2.1. The Role of Listening in Language Learning**

Listening is one of the key competencies addressed in 1 language learning. Defining Listening in the academic context, Rost (2016) states that: "Listening in an academic context, usually involving the integration of listening with content learning, classroom interaction, note-taking, discussion with peers, reports and presentations, and test-taking" (p. 311). Specifying on the role of listening in most of the language classrooms, Nunan (2001) comments that: "Listening is the Cinderella skill in second language learning. All too often, it has been overlooked by its elder sister: speaking" (p.1). However, though a receptive skill, listening should not be overlooked due to productive skills since the receptive skills contribute tremendously to provide a comprehensible input to language learners. According to Krashen's theory of Second Language Acquisition: "We acquire language by understanding messages, that

Comprehensible Input (CI) is the essential environmental ingredient in language acquisition” (1991, p. 409). Thus, in order to provide ESL learners with comprehensible inputs, listening in the language classroom should not be overlooked.

According to Richards (2008): “The teaching of listening has attracted a greater level of interest than it did in the past.” (p.1) Thus, currently, in most of the exams, there is a listening component, acknowledging that listening skills are a core component of second language proficiency (Richards, 2008. p.1.). As Richards (2008) claims there are two types of listening activities: 1) Listening as Comprehension and 2) Listening as Acquisition. He explains that “Listening as Comprehension” concerns on facilitating understanding of spoken discourse whereas “Listening as Acquisition” considers on how listening can provide input that triggers the further development of second-language proficiency (Richards, 2008. p.3.). Thus, language teachers should pay attention on incorporating both *listening as comprehension* activities and *listening as acquisition* activities in the ESL classrooms.

## **2.2. Listening in Computer Assisted Language Learning**

Davis (2002) states that CALL is perceived as an approach to language teaching and learning in which the computer is used as an aid to the presentation, reinforcement and assessment of material to be learned, usually including a substantial interactive element. Thus, even when teaching listening to ESL learners, CALL can be incorporated in the language-learning classroom. Nevertheless, CALL could be expanded to be provided as Mobile-Assisted Language Learning (MALL), where the students can access the content anytime from anywhere, even when they are away from the traditional language classroom.

According to Hsu (1994), CALL offers environments in which a second language student can participate in interactive learning. (p.32) In addition, the extra-linguistic supports, such as the podcasts provided in CALL, can aid second language students' comprehension. (Hsu, 1994. p.32). Explaining the role of podcasts in listening activities, O'bryan & Hegelheimer (2007) claims that both teachers and students find podcasts as a positive use of material in the language learning classrooms.

Furthermore, confirming the effectiveness of CALL in the language learning classrooms, Nachoua (2012) claims that incorporating CALL in the classroom enhanced the students' motivation and hence their performance in listening was improved where the students developed their performance in grammar, vocabulary, writing and listening. (p.1158)

## **2.3. Importance of Self-Directed Learning**

According to Holec (1979): “The concept of autonomous learning requires a redefinition of knowledge from an objective universal to a subjective individual knowledge determined by the learner”. Thus, Self-Directed Learning makes learners more independent. In the context of language learning too, learners could be directed to be independent and acquire languages in their own pace, through experiments of trial and error.

However, language teachers also have a vital role in the context of Self-Directed Language Learning. Commenting on the role of teacher, Holec (1979) states that teacher should set-up new objectives, which help the learner define his personal objectives and help him acquire autonomy. Thus, teachers should be able to guide the students to fulfill their own language requirements while directing them to acquire independence in the tasks they do.

Self-Directed Learning opens new avenues in the 21<sup>st</sup> Century Education as well. Tan & Ling (2015) identify Self-Directed Learning as a key 21st century skill. (p.61). Moreover, it is also emphasized that Self-Directed Learning can be introduced in various settings such as in and out of school, though the extent of self-directed learning may not be the same in all contexts. (Tan & Ling, 2015, p.61) Thus, in the current study, a SDL tool is introduced to improve the listening skills of ESL learners.

## **3.0 METHODOLOGY**

### **3.1. Introduction to the platform**

In order to address the issue of difficulties students' face when comprehending authentic listening material, a Computer Assisted Language Learning (CALL) platform was developed as a Self-Directed Learning (SDL) tool (Figure 1 and Figure 2). The platform was titled as “English for Medical Purposes. (Ariyasinghe, 2019.) Through this tool, the main intention was to provide a platform for the students to access resources to improve listening skills at their own pace. Included in the platform were various

guidelines on improving their listening skills and several listening activities. Numerous tips of listening tasks were added in order to support students to know the techniques in listening. Simultaneously, several listening activities based on various aspects of medicine were added to familiarize the students with authentic podcasts.



Figure 1: Home Page



Figure 2: Home Page

### 3.1.1. Included activities

Numerous activities, which are related to various themes in medicine, were included in the website. The audio-tracks were linked through YouTube videos to the quiz form. However, in order to ensure that the students' concentration will not deviate from the audio track, only couple of pictures were added to the respective YouTube video.

Google Forms were used to create quizzes, which provide instant answers upon the submission. Thus, students had the opportunity to view their score and to identify their wrong answers and the corrections. (Figure 3 and Figure 4)



Figure 3: Listening Activities



Figure 4: Listening Activities

### 3.1.2. Included tips and guidelines

Most of the students face struggles when doing listening activities as a result of not following the proper techniques. Hence, tips for listening were added under two categories: "Tips for Preparation" (Figure 5) and "Tips for the exam" (Figure 6).



Figure 5: Tips for Preparation



Figure 6: Tips for the exam

### **3.1.3. Implementation of the platform**

In order to familiarize the students with the newly implemented platform, an introductory session was conducted in the computer laboratory. They were given instructions on how to access the tool at home and how the activities should be conducted. Researcher found that conducting this session was beneficial for the students and it led them to achieve an efficient result.

### **3.2. Data Collection**

In this study, two main research instruments were used. The first instrument was questionnaires distributed to obtain participants' views whereas the second instrument was interviews which were done to capture an in-depth understanding of the benefits and drawbacks of the introduced online platform. Questionnaires were distributed in mainly two incidents.

- Prior to introducing the platform to students
  - In order to gain students' view on the listening activities in the traditional classroom setting
- After introducing the online platform to students
  - To collect data on participants' experience in using the online platform and to know their suggestions for further developments

#### **3.2.1. Triangulation of data**

The present research was inclusive of both quantitative and qualitative data in order to assure the validity of the study using a variety of methods. Though the students answered the questionnaire provided, to gain a clearer picture of the issue and to identify better solutions, interviews were needed. Thus, various ambiguities that occurred through the answers given in the questionnaires could be eradicated through students' responses in the interview.

#### **3.2.2. Participants in the study**

Participants of this study were 42 undergraduates who follow medical sciences in English medium. Participants' first attempt in listening component in the exam was unsuccessful and hence, they were studying to face the second attempt in listening component.

### **3.3. Data Analyzing**

After collecting data from the participants through questionnaires and interviews, a content analysis was done. Through the questionnaires, data such as participants' experience, their views and suggestions for further developments were collected. The results of the questionnaires that were distributed prior to the implementation of the study and after the implementation of the study were compared to obtain a comparative viewpoint of students' experience in traditional ESL classroom and the digitalized self-directed learning (SDL) tools. The quantitative data was analyzed separately.

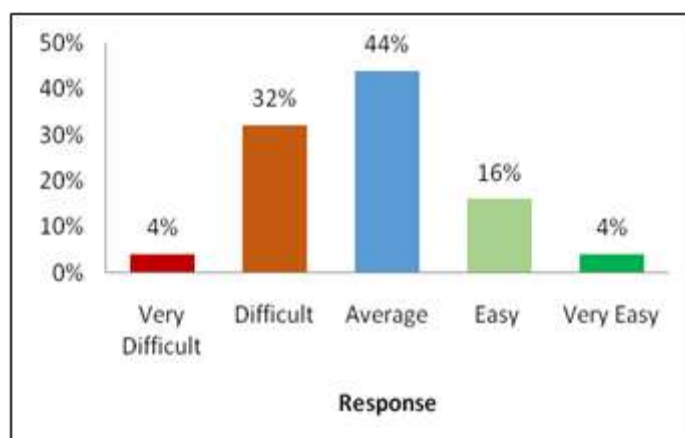
The collected data through the interviews was thematically analyzed in order to decide the impact created by the digitalization of the ESL classroom, with respect to listening activities. The interviews were helpful to determine students' standpoint to listening activities in traditional classroom and Computer-Assisted Language Learning setting.

## **4.0 RESEARCH FINDINGS**

The data collected in the study was analyzed under various themes in order to gain an extensive insight to the current listening practice in the classroom setting as well as the newly implemented Self-Directed Learning (SDL) tool.

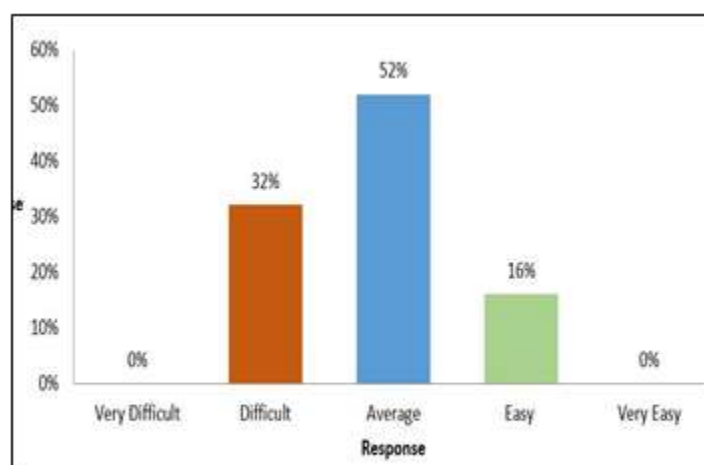
### **4.1. Current Listening Tasks**

With respect to the listening activities that were previously done in the classroom, students were given questions to answer on the content and the degree of difficulty of the tasks. The participants of the study are allocated 15 hours of classes that are dedicated to teach listening. In the classes, they practice listening activities and they are given some activities as take-home tasks to complete as well.



*Figure 7: Degree of Difficulty in Classroom Tasks*

When the participants were inquired of the degree of the difficulty of the classroom activities (Figure 7) majority of them stated that the difficulty of the tasks are average. Yet, a considerable percentage of students mentioned that the tasks were difficult, whereas 4% claimed the tasks were very difficult. On the contrary, one fifth of the study sample claimed that the tasks were either easy or very easy.



*Figure 8: Degree of Difficulty in Take-home Tasks*

Thereafter, they were questioned on the degree of difficulty in the take-home tasks given. (Figure 8). Same as the classroom activities (Figure 7), the majority claimed the difficulty was average. However, unlike the classroom activities, none claimed whether they were very difficult or very easy. The response percentages of “difficult” and “Easy” (respectively 32% and 16%) were same as the percentages of classroom activities.

Next, students were inquired on the content of the current listening tasks and as to why they think that the tasks given to them were difficult than anticipated. They were asked whether they can comprehend the content in the listening tasks and if they cannot, what could be the possible reasons for the difficulty they face in comprehending.



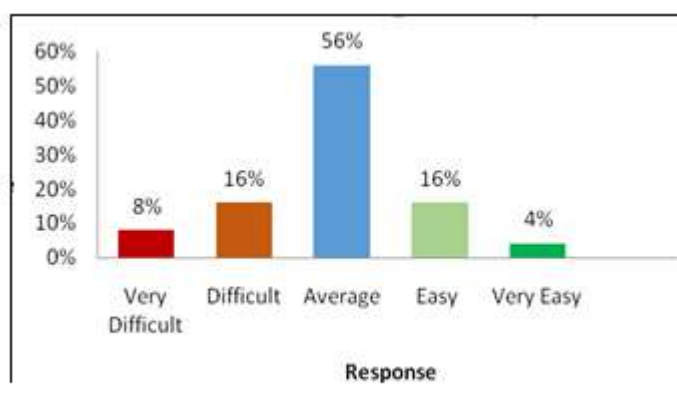


Figure 9: Degree of Difficulty in the Content

As the data in figure 9 represents, more than half of the participants had claimed that their comprehension of the content in listening tasks was “Average.” Approximately, quarter of the participants stated that the content of the listening activity was not easy to comprehend. On the contrary, one fifth of the participants claimed that the content was either “easy” or “very easy”.

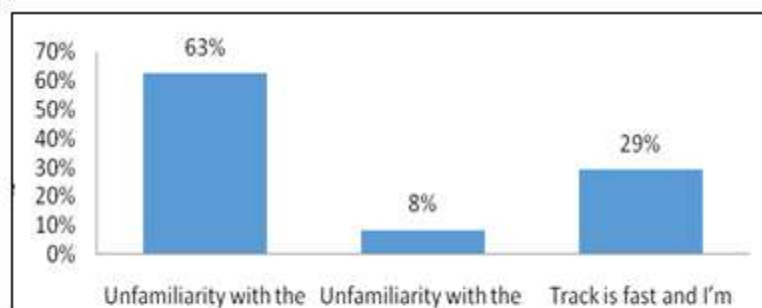
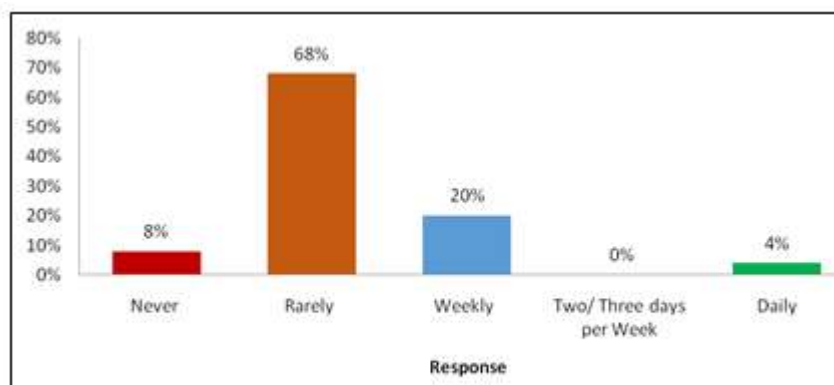


Figure 10: Reasons for the difficulty in understanding the content

Since there is a considerable number of students who face difficulties in understanding the content, they were asked for the reason. From the responses (Figure 10), it was evident that 63% of the students find that they are unfamiliar with the accents they hear in the listening recordings. Nearly one third of the participants claimed that they are not used to the pace/ speed of authentic speaking whereas 8% of the participants stated that they could not comprehend listening tasks since they are unfamiliar of the vocabulary.

#### 4.2. Frequency of listening practice

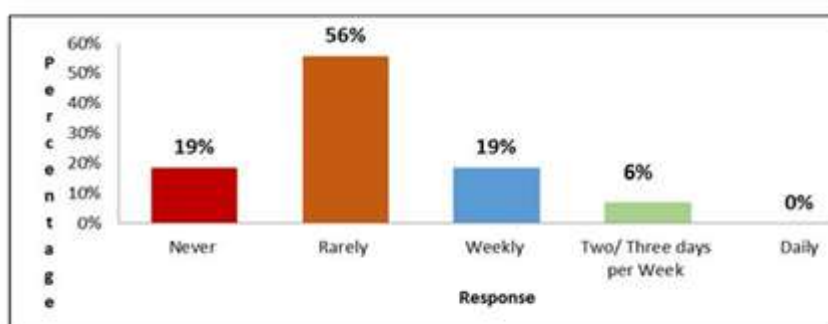
Since it was a necessity to find reasons for students' difficulties in order to identify a proper solution to address the problem, students were given questions to determine the frequency of their listening practice and how frequent they incorporate listening tasks to their day-to-day activities.



*Figure 11: Frequency of listening practice*

When the participants were inquired of their frequency of listening practice (Figure 11), approximately two third of the participants claimed that they rarely practice listening activities whereas 8% of the participants stated that they never practice listening activities at home. One fifth of the participants mentioned that they practice listening activities weekly whereas 4% of the participants practice listening tasks daily.

Since one of the major reasons as to why the students find listening as a difficult task is their lack of preparation and unfamiliarity of the nature of the activities students were inquired on the frequency of the tasks they do to practice listening.



*Figure 12: Incorporation of listening tasks to day-to-day*

In order to determine how the students incorporate listening tasks to their day-to-day activities, they were asked on how frequent they watch English movies/ TV series, how frequent they listen to English songs and English radio channels and news telecasts. Figure 12 summarizes the responses of the participants.

According to the students' responses, more than half of the participants claimed that they rarely do dedicated day-to-day activities that aid them to improve their listening skills in English. Significantly, 75% of the study sample mention that they never or rarely incorporate listening tasks to their day-to-day activities. Thus, this clearly depicts that students do not practice adequate listening tasks outside the classroom. Consequently, they face difficulties in identifying the various accents and to catching up the pace and the speed of authentic speech.



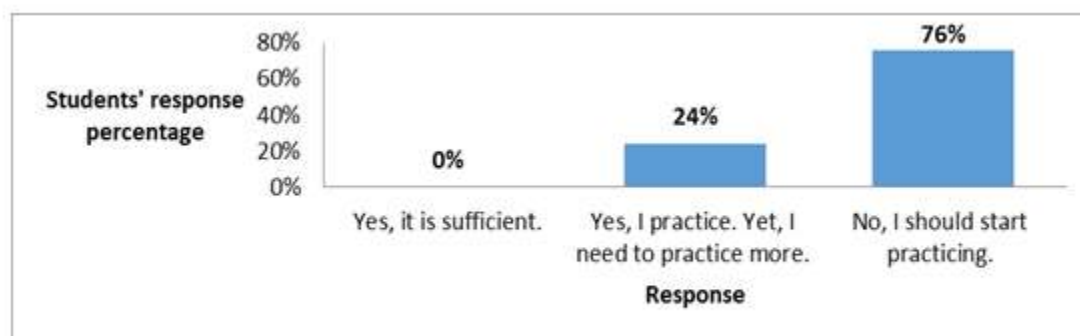


Figure 13: Sufficiency of Practicing

In order to make the students self-reflect on their own practicing strategies, they were asked whether they think their practicing is sufficient (Figure 13). Significantly, none claimed their listening practicing was sufficient. Although, almost quarter of the student sample stated that they practice, they have mentioned that they need to practice more. Conversely, more than 75% of the students had claimed that they do not practice listening and they should start practicing.

### 4.3 Responses on the Self-Directed Learning

#### 4.3.1 Pre-implementation responses

Prior to the implementation of the self-directed learning tool, students were inquired on their perception on Computer Assisted Language Learning. The figure mentioned below embodies the responses of the participants.

From the responses shown in the figure 14, 68% of the participants had claimed that they prefer to do CALL activities. However, the concern of the majority was the lack of time they might be able to allocate for CALL tasks. Conversely, 32% of the participants had stated that they prefer traditional classroom listening activities to CALL. Compare the pre-implementation responses with the post-implementation responses in the latter part of this paper.

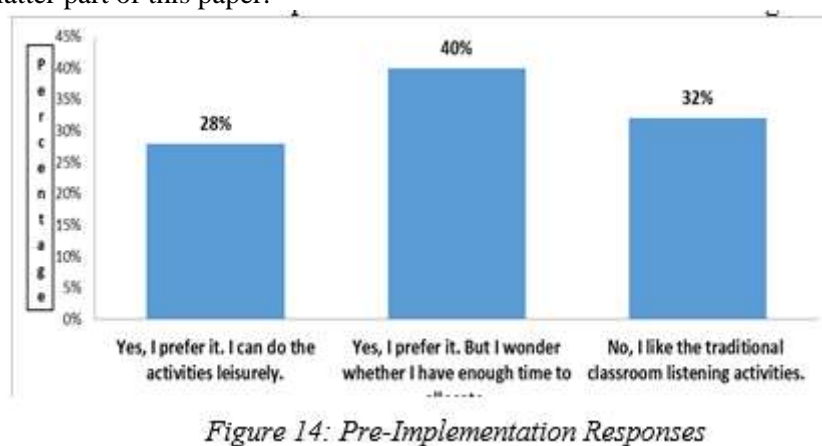


Figure 14: Pre-Implementation Responses

#### 4.3.2 Post-implementation Responses

After the implementation of the Self-Directed Learning tool, feedback was taken from the students to determine the effectiveness of the tool. Following figure (figure 15) show the responses of the participants.

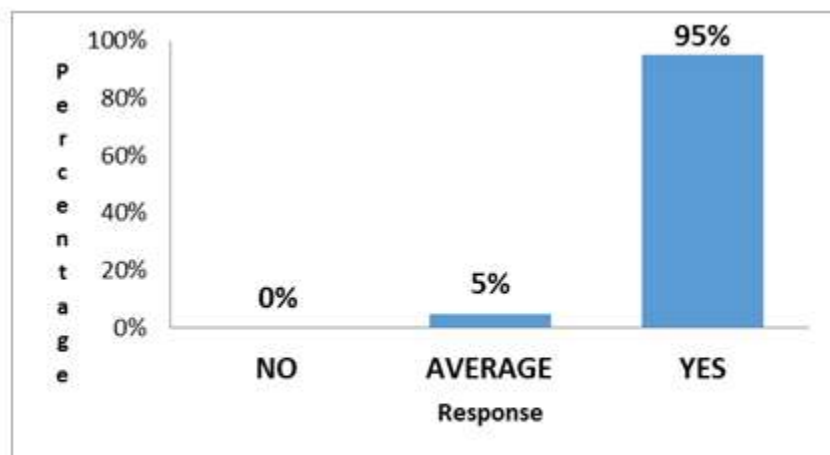


Figure 15: Preference of SDL tool

After the implementation of the tool, when the students were asked whether they preferred the SDL tool to the traditional classroom setting, 95% of them had claimed that they liked the SDL tool. When compared with figure 14, these responses clearly depict that prior to the implementation of the tool, participants lacked awareness on the effectiveness of the listening activities. Earlier, 32% of the participants preferred the traditional classroom setting activities to the SDL tool. However, after the implementation, none of them did not mention that they did not like the tool. More than 90% of participants agreed that the SDL tool is effective and it is quite beneficial to improve their listening skills. (Figure 16 and Figure 17). None of the participants claimed that it was ineffective.

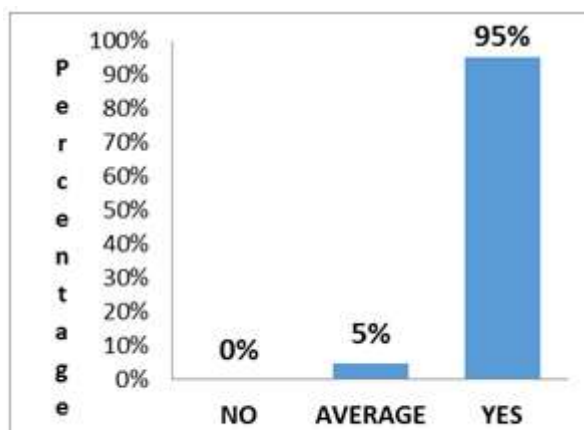


Figure 16: Effectiveness as a SDL tool

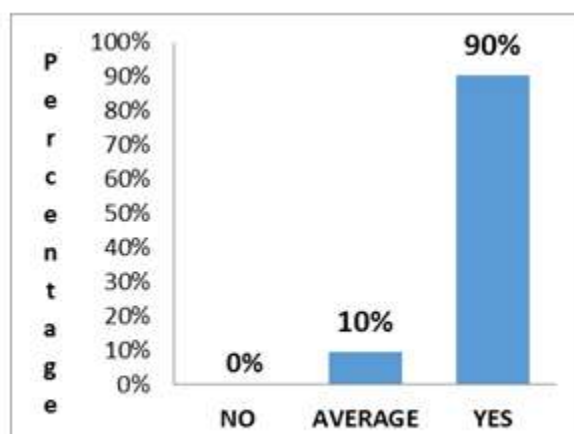


Figure 17: Beneficial to improve listening

When the participants were asked to provide feedback on the tips given in the tool with respect to listening, 86% claimed that the addition of the listening tips were quite useful. (Figure 18)

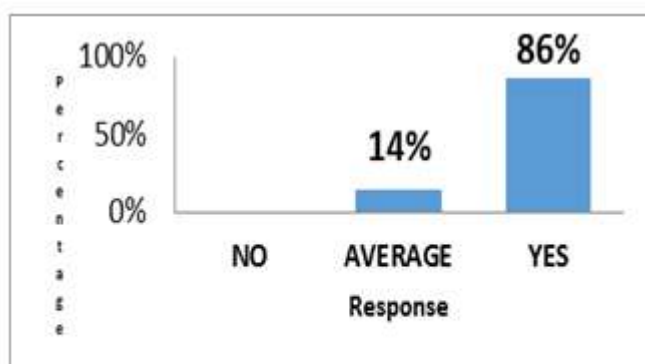


Figure 18: Feedback on Listening Tips

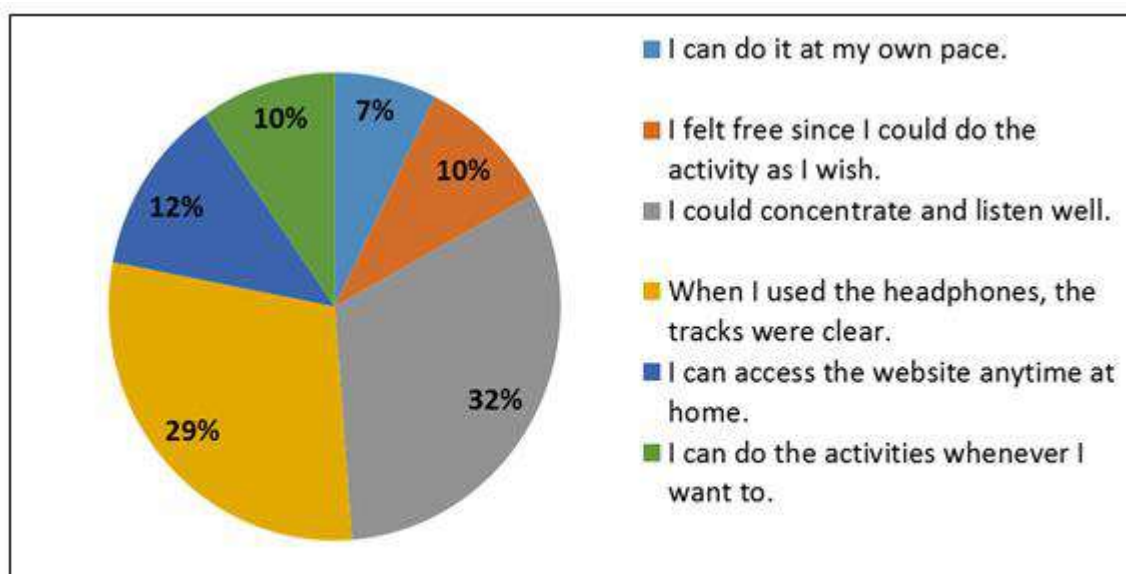


Figure 19: Students' reasons to prefer the SDL tool

Above figure (Figure 19) shows that approximately two third of the participants preferred the SDL tool to traditional classroom activities since they could concentrate well. Usually, in the traditional classroom setting resources are lacking to provide headphones to every student. Yet, when the students practiced listening activities through SDL tool away from the traditional classroom, they were able to use their own headphones and clearly identify the vocabulary while catching up with the accents of the tracks. Hence, 29% of the sample had stated that they liked the SDL tool since they found the tracks clear when using the headphones. Twelve percent of the participants liked the tool because of the accessibility whereas 10% felt that they were to do the activities on their own using the SDL tool. Since the activities could be accessed at any time, 10% of the participants preferred the tool whereas 7% of the participants mentioned that they could do their activities at their own pace. Thus, it could be stated that there were numerous benefits that enhanced the effectiveness of the SDL tool.

#### 4.3.2.1 Suggestions for further improvement

From the interviews that were conducted with randomly selected students, questions were asked on as to how they wish to see improvements in the website. Most of them claimed that they wished if there were more activities in the website for them to practice more. Since the tool was in the experimental stage, only five exercises were added at the beginning. However, the researcher wishes to add more activities in the future. In addition, they also stated if various types of questions were added to the forms, it would have been better than adding only MCQ and short answer questions. Moreover, they suggested adding conversations such as doctor-patient dialogues to the website along with tracks containing lectures related to medical education.

## 5.0 CONCLUSION

After analyzing the aforementioned research findings, the following conclusions can be drawn.

### 5.1. Degree of difficulty of the listening tasks

When the students were inquired on the degree of difficulty of the given listening tasks, most of them have mentioned that the activities are of average difficulty (Figure 07.) Moreover, they have mentioned they find the take-home tasks are easier than the tasks given in the classroom. (Figure 08). However, their own self-reflection of their competency becomes questionable when analyzing their responses in the latter part with respect to content of the listening activities.

### 5.2. Degree of difficulty in the content of listening tasks

Though more than half of the students stated that they find the comprehension of the listening tasks easier (Figure 09), later all the participants had mentioned reasons for the difficulty in understanding the listening tasks (Figure 10). Though 92% of the participants are confident with vocabulary, 63% of the participants face troubles in understanding the accent whereas 29% claimed that they are not used to the pace of the listening podcasts. Since all of the participants had mentioned that they face various difficulties in listening tasks, their own self-reflection of their competency becomes questionable.

### 5.3. Frequency of Listening Practice

From the participants responses, it was clearly evident that 75% of them either rarely or never practice listening tasks. Though they could incorporate listening through watching English movies/ TV series, listening to English songs or watching news, majority of them mentioned that they rarely do so (Figure 11 and Figure 12). This indicates that most of them face difficulties when practicing listening tasks because of their lack of exposure to listening activities away from classroom. Participants themselves agree that their current practicing and exposure is not sufficient in Figure 13 and they claim that they need to practice more.

### 5.4. Implementation of the online platform

Prior to the implementation of the online platforms as a SDL tool, when the participants were inquired whether they would prefer practicing listening using an online platform, majority mentioned they liked it though they wonder whether they could allocate time. (Figure 14) Meanwhile nearly one third of the participants claimed that they would prefer listening activities traditional classroom setting. Yet, when they were introduced to the SDL tool, more than 90% of the participants mentioned that the tool was efficient and beneficial to improve their listening skills (Figure 16 and Figure 17). Thus, their post-implementation insights contradicts the pre-implementation views they had on using an online platform for listening. Probably, prior to this implementation, they might not have been exposed to language learning through SDL tools. Nevertheless, since the online platform was tailor-made and it catered to the students' requirements, the participants had preferred the platform.

### 5.5. Overall Conclusion

Thus, after analyzing the aforementioned facts in 5.2 and 5.3, it can be stated that the ESL learners face various difficulties when practicing listening activities because of their lack of exposure and lack of practice. However, when a tailor-made online platform was implemented and introduced for the students, they found that the tool was quite efficient and beneficial to improve their listening competency. Therefore, it can be concluded that the difficulties students face in practicing listening in the ESL classroom setting can be considerably eradicated through introducing Computer Assisted Language Learning activities as Self-Directed Learning tools.

### 5.6. Implications for further studies

The current study was limited to only to investigate the effectiveness of implementing Computer Assisted Language Learning activities as Self-Directed Learning tools in the English for Medical Purposes classroom. Nonetheless, it concerned only on the listening competency. Yet, further studies could be done in EAP and ESP classrooms such as Business English and Legal English. In addition, the scope of the present study could be broadened by exploring the effectiveness of Self-Directed Learning with respect to the other key competencies of language learning.

## REFERENCES

- Ariyasinghe, D.A.G. (2019). *English for Medical Purposes*. Retrieved August 29, 2019  
<https://sites.google.com/view/listening-for-medical-purposes/>
- Brown, S. (2006) *Teaching Listening*, NY, USA: Cambridge University Press.
- Davies, G. (2002). CALL (computer assisted language learning). *LLAS Centre for Languages, Linguistics and Area Studies*. Retrieved from <https://www.llas.ac.uk/resources/gpg/61>

- Gibson, F., (2013). English for Medical Purposes. In *The Handbook of English for Specific Purposes*(pp. 243–262). John Wiley & Sons.
- Holec, H. (1979). *Autonomy and Foreign Language Learning*. Retrieved from <https://eric.ed.gov/?id=ED192557>
- Hsu, J.-F. (1994). *Computer Assisted Language Learning (Call): The effect of ESL students' use of interactional modifications on listening comprehension* (unpublished doctoral dissertation). Iowa State University, USA.
- Krashen, S. (1982). *Principles and Practice in Second Language Acquisition*. London: Pergamon.
- Krashen, S. (1991). The Input Hypothesis: An Update. In *Georgetown University Round Table on Languages and Linguistics (GURT) 1991 . Round Table on Languages and Linguistics (GURT) 1991* (pp. 409–431). Washington: Georgetown University Press.
- Nachoua, H. (2012). Computer-Assisted Language Learning For Improving Students' Listening Skill. *Procedia - Social and Behavioral Sciences*, 69, p.1150–1159. Retrieved from <http://www.sciencedirect.com/science/article/pii/S187704281205505X>
- Nunan, D. (2001). New Ways in Teaching Listening. *The Journal of TESOL France*, 8, p. 51–66.
- O'Brien, Anne & Hegelheimer, Volker. (2007). Integrating CALL into the classroom: The role of podcasting in an ESL listening strategies course. *ReCALL*, 19(2), p.162-180. doi: 10.1017/S0958344007000523.
- Richards, J. C. (2008). *Teaching listening and speaking*. NY, USA: Cambridge University Press.
- Rost, M. (1994). *Introducing listening*. London: Penguin books
- Rost, M. (2016). *Teaching and researching listening*. New York: Routledge.
- Tan, L., & Ling, J. K. (2015). *Self- Directed Learning: Learning in the 21st Century*.

## Relationship between Communication Apprehension and Willingness to Communicate among TESL Undergraduates in a Public University in Malaysia

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### ABSTRACT

*Teaching English as a Second Language (TESL) undergraduates are trained to become English language educators in the Second Language (L2) context. Thus, they have to be proficient, confident and fluent when speaking in English. However, this is not necessarily true, as they are also L2 speakers who are continuously developing their interlanguage. Also, being proficient does not necessarily mean that one would have low communication anxiety and be highly willing to communicate in a variety of contexts. However, as future English language teachers the TESL undergraduates must be willing to communicate, as their future profession would require them to engage in discussions and present their ideas and knowledge of subject-matter to colleagues, students, educational administrators and parents, among others. Communication apprehension (CA) is one of the factors that could hinder willingness to communicate (WTC), as those who experience high CA would most likely withdraw from communicating or avoid communication. CA is also often compounded by the thought of being evaluated or judged by others. The current research was carried out to find out the relationship between CA and the WTC among the population of TESL students in a public university in Malaysia during meetings, small group discussions, public speaking and interpersonal communication using the Personal Report of Communication Apprehension Scale (PRCA-24) (McCroskey, 1982) and the Willingness to Communicate Questionnaire (McCroskey & Richmond, 1987). There were 145 respondents from the B. Ed TESL programme from year 1 to year 4. The results showed that respondents scored a moderate mean score for CA in all four settings: communicating in groups, inter-personal, public speaking and meetings, and they also scored moderate scores for WTC for all four settings. The highest mean score was recorded for communicating with friends and acquaintances. The respondents also preferred group discussions and public speaking. The lowest mean score was recorded for speaking during meetings. The Pearson correlation coefficient result showed moderate negative correlation between CA and WTC. Results of this study could have pedagogical implications as educators should be aware of the levels of CA and WTC among their learners, and the relationship between CA and WTC to ensure that lessons are geared towards helping to reduce CA and increase WTC among learners to help them become confident and highly motivated individuals who could voice out opinions and ideas in different settings, and communicate content effectively.*

**KEYWORDS:** Communication Apprehension, Willingness to Communicate, ESL

### 1.0 INTRODUCTION

It is perhaps assumed that TESL undergraduates are proficient and confident in speaking English, and would do so with ease in front of a group of people, as they are English language teachers-in-training. However, this might not necessarily be true, as they are second language speakers of English and they themselves are continuously developing their interlanguage. Speaking is also often viewed as a stressful skill to master as giving a speech or speaking in front of a class is a common fear among people. This could be further amplified by the need to communicate well which would require linguistic, sociolinguistic, discourse and strategic competence which are the components of communicative competence. In short, ideally, when speaking one must use correct grammar and appropriate vocabulary, adhere to social rules such as levels of formality and politeness, use appropriate non-verbal behaviors such as gestures and body

language, speak fluently, and modify content by gauging the listeners' level of understanding and interest, and ensure ideas are presented in a coherent and cohesive manner. Speakers might even have to paraphrase and respond to the listeners' comprehension checks and clarification requests. All these might be daunting for L2 speakers, even if they are generally proficient in the language. MacIntyre (2007) posited that proficient learners might be unwilling to communicate due to low motivation for learning and high levels of anxiety.

As TESL undergraduates aspire to become English language teachers, there is a strong need for them to be willing to communicate, and their willingness to communicate (WTC) might be linked with communication apprehension (CA) which is related to levels of anxiety. The current study attempted to identify the students' levels of CA and WTC during class activities, small group discussion, public speaking and interpersonal communication, as these would have pedagogical implications on teaching instruction and practices adopted for these students. Therefore, the current study sought to answer the following research question: Is there a significant relationship between CA and WTC among TESL undergraduates in a public university in Malaysia?

## **2.0 COMMUNICATION APPREHENSION AND WILLINGNESS TO COMMUNICATE**

Communication apprehension (CA) refers to "an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons" (McCroskey, 1977, p. 78). Yousef, Jamil and Razak (2013) reported that high levels of anxiety could be attributed to factors such as motivation, self-perception, lack of self-confidence, socio-cultural and personal attributes such as shyness and grit. Anxiety is also caused by the thought of being evaluated by others. McCroskey & Richmond (1991) estimated that 20% of the population suffer from CA at any one time. This is partly due to the communication components including competence, skills and affect which can cause anxiety among language learners.

Horwitz et al. (1991) posited that the manifestation of CA can result in difficulties in speaking and understanding spoken language. This can be further compounded by lack of vocabulary knowledge and inaccurate pronunciations. As oral or speaking activities are quite common in ESL classrooms, the feelings of frustration for not being able to speak fluently might affect a learner's willingness to communicate. Thus, it is likely that those who experience high CA would avoid communicating or withdraw from communication (McCroskey and Richmond, 1987).

In a study involving Chinese learners of English, Liu (2007) found that learners experience anxiety when they have a single performance such as a presentation. This usually occurs among students who lack adequate English vocabulary knowledge, have low English proficiency, and have memory disassociation. While a study carried out in a public university in Malaysia showed that public speaking resulted in high levels of CA at 81.6% (Azrizal, 2014). A study conducted by Wan Zumusni et al., (2010) found that public speaking was not preferred by the students as a method of improving their English. Only 3% of the students chose it as an interesting activity. The reason why the students felt that way was because speaking in public causes anxiety and fear, and could lead to stage fright. In another study involving 113 students from several universities in Malaysia, the majority of undergraduates had high levels of CA which suggests that apprehension is one of the factors that hinders language learning (Noor et al., 2015).

WTC was initially conceptualised as a personality-based predisposition in L1 speakers of English (McCroskey & Baer, 1985). However, this model has been improved to examine a hierarchy of antecedents starting with personality traits and moving towards more communication-related variables, like communication apprehension and perceived competence (MacIntyre, Babin, & Clément, 1999). WTC was further extended to refer to a person's motivation to use the target language to communicate. To promote higher WTC among learners, more opportunities to practice in the second language should be provided, and these opportunities should facilitate authentic second language usage (MacIntyre et al., 2001). Thus, the development of WTC is often regarded as an important aim for L2 teaching as it is seen to have a dual purpose; it encourages interaction in the L2 classroom, as well as enables students to continue to communicate in the L2 outside of the classroom (MacIntyre et al. 2003).



### 3.0 METHODOLOGY

The current study adopted a correlational study to identify the levels of CA and WTC among TESL undergraduates in a public university in Malaysia, and to gauge whether there is a relationship between the CA and WTC levels.

#### 3.1 Participants

The participants were 145 TESL undergraduates (32 Males, 113 Females) in a public university in Malaysia from first year students to final year students. Their age range is between 19 to 25 years old. The students are generally good users of the English language as they scored Band 4 (good user) and Band 5 (very good user) in the Malaysian University English Test (MUET), which is a test that all undergraduates have to sit for as part of the requirement to enter public universities in Malaysia. All the TESL undergraduates in the university were selected for this study.

#### 3.2 Instruments

Two questionnaires were used to collect data on CA and WTC levels: The Personal Report of Communication Apprehension (PRCA-24) and the WTC instrument (McCroskey & Richmond, 1987). The PRCA-24 was used to measure communication apprehension levels, while the WTC instrument was used to measure levels of willingness to communicate. Both questionnaires were administered to all participants, and they completed the questionnaires within 45 minutes.

##### 3.2.1 CA measure

The Personal Report of Communication Apprehension (PRCA-24) (McCroskey, 1982) was used to measure participants' communication anxiety level. It consists of 24 items which requires participants to rate themselves using a five point likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Items of PRCA-24 focus on four categories of context (group discussions, meetings, interpersonal conversations, and public speaking). Scores ranging from 24 to 55 indicate low levels of CA. Scores between 55 to 83 indicate moderate levels of CA, and scores between 83 to 120 indicate high levels of CA. Communication apprehension has often been measured using the PRCA-24 instrument, and it is more preferred compared to the earlier versions of the instrument (PRCA, PRCA10, PRCA-24B, etc.) as it is highly reliable (alpha regularly >.90) and has very high predictive validity (McCroskey, 1982).

##### 3.2.2 WTC measure

The WTC scale (McCroskey & Richmond, 1987) measures participants' willingness to communicate. The scale consists of 20 situations in which a person might choose to communicate or not to communicate. Participants would have to indicate the percentage of times they would choose to communicate in each type of situation (0 = Never to 100 = Always). The range of scores based on the norms of WTC is shown in Table 1. The face validity of the instrument is strong, and extensive research results show high predictive validity of the instrument with alpha reliability estimates ranging from .85 to well above .90 (McCroskey & Richmond, 1987).

Table 1: Norms for WTC scores

Category	Level
Group Discussion	>89 High WTC, <57 Low WTC
Meetings	>80 High WTC, <39 Low WTC
Interpersonal Conversations	>94 High WTC, <64 Low WTC
Public Speaking	>78 High WTC, <33 Low WTC
Strangers	>63 High WTC, <18 Low WTC
Acquaintance	>92 High WTC, <57 Low WTC
Friends	>99 High WTC, <71 Low WTC
Total	>82 High Overall WTC, <52 Low WTC

(Source: McCroskey & Richmond, 1987)

### 3.3 Data analysis

All 145 participants completed the PRCA-24 and WTC instruments. Data collected was analysed using descriptive statistics and Pearson correlation coefficient. All the results were run using SPSS 24.0.

## 4.0 RESULTS

### 4.1 Overall Level of Communication Apprehension (CA)

Participants' overall level of communication apprehension was measured using PRCA-24 scale which utilises a 5-point likert scale. Results of CA levels are shown in Table 2.

Table 2: Mean and Standard Deviation for Sub-scores and Overall Level of Communication Apprehension (CA)

No.	Sub-scores	Mean	SD	Level
1.	Group Discussions	14.19	1.93	
2.	Meetings	13.58	4.19	
3.	Interpersonal	12.80	3.90	
4.	Public Speaking	14.55	3.10	
	Total CA	55.12	10.55	Moderate

The findings demonstrate that students involved in this study possess moderate levels of communication apprehension in all dimensions. The highest mean score was recorded for the dimension of public speaking (M = 14.55, SD = 3.10), followed by group discussions (M=14.19, SD=1.93), meetings (M=13.58, SD=4.19) and the lowest is for interpersonal conversation (M=12.80, SD=3.90). This indicates that students have the highest level of CA during public speaking. This would imply that they feel anxious and nervous when delivering a speech in English in front of an audience. Overall, the students show a moderate level of CA (M=55.12, SD=10.55).

### 4.2 Overall Level of Willingness to Communicate (WTC)

To determine the level of willingness to communicate, the descriptive statistics of 2 sub scores namely receiver type (stranger, acquaintance and friend) and context type (group discussion, meetings, interpersonal and public speaking) were calculated using SPSS 24.0. Willingness to Communicate was measured using McCroskey & Richmond's (1987) WTC instrument with scales ranging from 0% to 100%. Table 3 shows the mean, standard deviation and level of WTC based on the different constructs.

Table 3. Students' overall level of Willingness to Communicate (WTC)

Sub-scores	Mean	SD	Level
<b>Receiver Type</b>			
Stranger	42.62	20.98	Moderate
Acquaintance	61.97	19.70	Moderate
Friend	77.13	16.85	Moderate
<b>Context Type</b>			
Group discussion	65.40	19.30	Moderate
Meetings	53.31	19.33	Moderate
Interpersonal	64.94	18.93	Moderate
Public speaking	62.63	18.67	Moderate
<b>Overall</b>	60.57		Moderate

As shown in table 3, the overall level of WTC among the TESL students could be considered as moderate. In terms of receiver type, the lowest mean score was recorded for speaking to strangers (M=42.62, SD=20.98) and the lowest mean score for context type was recorded for meetings (M= 53.31, SD=19.33). The result shows that the students are more willing to speak with their friends (M=77.13, SD=16.85) and acquaintances (M=61.97, SD=19.70), than strangers (M=42.62, SD=20.98). The students are also most comfortable having group discussions (M=65.40, SD=19.30). The scores suggest that the

students are more willing to communicate in English during group discussions with friends, and they are less willing to communicate with strangers, in front of an audience, or in meetings.

#### 4.3 Correlation between Communication Apprehension and Willingness to Communicate

Pearson coefficient correlation was used to determine whether there is any correlation between CA and WTC. Table 4 shows the Pearson coefficient results.

		CA	WTC
CA	Pearson Correlation	1	-.346
	Sig. (2-tailed)		.000
	N	145	145
WTC	Pearson Correlation	-.346	1
	Sig. (2-tailed)	.000	
	N	145	145

A two-tailed Pearson coefficient results shows a negative correlation ( $r = -.346$ ,  $p = .000$ ) between CA and WTC. According to Cohen (1988), 0.346 denotes moderate correlation. Therefore, there is a moderate negative relationship between communication apprehension and willingness to communicate.

## 5.0 DISCUSSION AND CONCLUSION

The current study found that low CA is linked to high WTC ( $r = -.346$ ). Thus, there appears to be a need to lower learner anxiety in an effort to enhance their willingness to communicate. In a similar vein, MacIntyre et al. (1997) found that perceptions of competence in the L2 can be negatively affected by language anxiety and individuals who are highly anxious about communicating tend to perceive their communication competence to be lower than it is rated by a neutral observer. Even proficient learners might be unwilling to communicate, and motivation for learning and anxiety about communicating may have a direct influence on L2 use (MacIntyre, 2007).

The participants demonstrated the highest mean scores in CA for public speaking and group discussion. This would mean that they experience relatively high anxiety for these two activities. Young (1991) suggested that to reduce L2 anxiety, several elements and practices need to be managed and improved. These include managing personal and interpersonal issues, instructor-learner interactions, classroom procedures, language testing, instructor beliefs about language learning and learner beliefs about language learning. Another recommendation to improve English speaking competence and reduce communication apprehension is to carry out frequent group discussions, public speaking sessions and presentations, either planned or impromptu, as part of the class activities (Al-Tamimi, 2014).

The students show an overall moderate level of WTC, and they are especially apprehensive about speaking to strangers and speaking during meetings. Thus it would be recommended that students be given more practice in public speaking so that they get used to putting forth their ideas, and engaging in discussions to ensure that they make meaningful contributions to the group work. Also, they should be exposed to different contexts in which they would have to exchange ideas and opinions with people outside of their circle of friends. This is especially important given that their chosen future vocation would require them to interact with their own students, parents, government officials, and members of the teaching profession. Thus, they need to be willing to communicate not only with friends, but also in different contexts such as meetings, talks, seminars and conferences to ensure that they engage in meaningful discussions and actively put across ideas, opinions and content knowledge that would lead to their own professional development and the betterment of the teaching and learning scenario in the country.

## REFERENCES

- Al-Tamimi, N. O. M. (2014). Public speaking instruction: A bridge to improve English speaking competence and reducing communication apprehension. *International Journal of Linguistics*, 2(4), 45-68.
- Azrizal, M. (2014). *Communication apprehension among first-year engineering degree students of Universiti Malaysia Perlis*. Center for International Languages, Universiti Malaysia Perlis, Malaysia, 1-3.
- Horwitz, E. K, Horwitz, M. B. & Cope, J. A. (1991). Foreign language classroom anxiety. In E.K. Horwitz & D. J. Young, *Language anxiety: from theory and research to classroom implications* (pp.27-39). Eaglewood Cliffs, New Jersey: Prentice Hall.
- Liu, M. (2007). Anxiety in oral English classrooms: A case study in China. *Indonesian Journal of English Language Teaching*, 3(1), 119-137.
- MacIntyre, P. D. (2007). Willingness to communicate in the second language: Understanding the decision to speak as a volitional process. *The Modern Language Journal*, 91(4), 564-576.
- MacIntyre, P. D., Babin, P. A., & Clément, R. (1999). Willingness to communicate: Antecedents & consequences. *Communication Quarterly*, 47(2), 215-229.
- MacIntyre, P. D., Baker, S. C., Clément, R., & Donovan, L. A. (2003). Talking in order to learn: Willingness to communicate and intensive language programs. *The Canadian Modern Language Review*, 59(4), 589-607.
- MacIntyre, P. D., Clement, R., Baker, S.C., & Conrod, S. (2001). Willingness to communicate, social support and language learning orientations of immersion students. *Studies in Second Language Acquisition*, 23, 369-388.
- MacIntyre, P. D., Noels, K. A., & Clément, R. (1997). Biases in self-ratings of second language proficiency: The role of language anxiety. *Language learning*, 47(2), 265-287.
- McCroskey, J. C. (1982). *An introduction to rhetorical communication* (4th ed.). Englewood Cliffs, NJ:Prentice-Hall.
- McCroskey, J. C., & Baer, J. E. (1985). Willingness to communicate: The construct and its measurement. Paper presented at the annual convention of the Speech Communication Association, Denver, Colorado.
- McCroskey, J. C., & Richmond, V. P. (1987). Willingness to communicate and interpersonal communication. In J. C. McCroskey & J. A. Daly (Eds.), *Personality and interpersonal communication* (pp. 119-131). Newbury Park, CA: Sage.
- McCroskey, J. C., & Richmond, V. P. (1991). Willingness to communicate: A cognitive review. In M. Booth-Butterfield (Ed.), *Communication, cognition, and anxiety* (pp. 19-37). Newbury Park, CA: Sage.
- Noor, A. M., Rafek, M., Khalid, P. Z. M., & Mohammad, R. (2015). Communication apprehension in language learning: is it serious? *International Journal of Arts & Sciences*, 8(2), 311.
- Young, D. J. (1991). The relationship between anxiety and foreign language oral proficiency ratings. In E. K. Horwitz & D. J. Young (Eds.), *Language anxiety: From theory and research to classroom implications* (pp. 57-63). Englewood Cliffs, NJ: Prentice Hall.
- Wan Zumusni, W. M., Noriah, I., Deepak Singh, R. S., & Suhaidi, E. (2010). ESL students communication apprehension and their choice of communication activities. *ASEAN Journal of Teaching and Learning in Higher Education*, 22(1), 22-29.
- Yousef, R., Jamil, H., & Razak, N. (2013). Willingness to communicate in English: A study of Malaysian pre-service English teachers. *English Language Teaching*, 6(9), 205.

# **ENTREPRENEURSHIP EDUCATION**

## The Use of Smartphones among the Rural Micro-Entrepreneurs in Negeri Sembilan

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### ABSTRACT

*Although empowerment is important and valuable to eradicate poverty, there is little research on how smartphones have played a role in assisting it to become a reality. The purpose of this research is to explore the usage of smartphones among rural micro-entrepreneurs towards their empowerment. Therefore, using face to face in-depth interviews, online interviews, document analysis and observations techniques, this research explores how smartphones have made a difference to the rural micro-entrepreneurs' business. The research participants were five (5) micro-entrepreneurs from rural districts in Negeri Sembilan, Malaysia. They were previously the participants of 2 Years Exit Programme under Department of Social Welfare of Malaysia. They run small and medium enterprises such as groceries shop, food stalls, coconut milk seller, tailoring and perfume company founder. The research found that regardless of the low level of education, type of businesses or physically disabled condition of the micro-entrepreneurs, it does not stop them to learn how to utilise smartphones for their business needs. Smartphones and the internet have empowered rural micro-entrepreneurs by enabling them to reach out to customers outside their locality and increase their marketing power. They also used the internet and smartphones as an educational and information resource namely from Google and Youtube. The research found that the participants mostly use social networks such as WhatsApp and Facebook for business purposes. The reasons for using smartphones are influenced by others and the intention to use it for business. Smartphones positively benefit their business as it improves the way of communication in business and life and enhanced their business marketing and sales. However, it also means they are dependent on smartphone and the internet to facilitate their business tasks involving communication and advertising. To facilitate the uptake of this affordable yet important smartphone technology, it is recommended that the key stakeholders' organisations study adult education concepts in attracting and engaging the rural micro-entrepreneurs to embrace technology. It is important to understand some basic principles about how adults prefer to learn, especially on new knowledge, skills and gadgets. Government agencies, NGOs and social movement bodies can contribute by organising and engaging in digital empowerment programs for the rural micro-entrepreneurs leveraging their access to digital commerce, internet marketing and such.*

**KEYWORDS:** Smartphone, Social networking applications, Micro-Entrepreneur, Empowerment.

### 1.0 INTRODUCTION

The economic development of the Malaysian people has been the major concern for the past 6 decades in all Malaysia's five years plan since the First Malaysia Plan introduced in 1966-1970. The target was to eliminate poverty, especially for the rural community. Starting from the Fifth Malaysia Plan (1986-1990) the term entrepreneurship starts to be highlighted and emphasised as the mechanism to eradicate poverty (Unit Perancang Ekonomi, 1986). Since then, the contribution of the entrepreneurs towards the growth of the country's GDP is growing rapidly. Malaysia has consistently invested a lot of funds and initiatives to encourage and facilitate growth for the growing numbers of entrepreneurs, via online and offline. These can be seen from various programs namely the "2 Years Exit programme (2YEP)" under Department of Social Welfare Malaysia (DOSWM), "Rural Economy Funding Scheme" under Ministry of Rural Development, "Business Coaching" under National Entrepreneurship Institute. The entrepreneurship programmes are enhanced by other government projects that provide locals with access to free WiFi and internet such as the "Projek Kampung Wifi" in 2010, "Program Pusat Internet 1 Malaysia" in 2013 and "Projek Jalur Lebar Pinggir Bandar" in 2015. These initiatives have helped the entrepreneurs, and increase

the broadband penetration in rural areas, further bridging the digital divide between rural and urban (Malaysian Communications and Multimedia Commission [MCMC], 2010).

Therefore, this research focused on the rural micro-entrepreneurs from 2YEP under the Department of Social Welfare Malaysia, Ministry of Women, Family and Community Development. This programme aimed to help the welfare aid recipients cum 2YEP micro-entrepreneurs to generate high income, hence, to empower themselves from the poverty trap. The pilot project in 2014 to 2016 was launched in Perlis with 50 participants and Negeri Sembilan, 450 participants (Ifwan, 2017).. According to research findings from Noraida, Salamatussaadah, Wan Zabariah, Haniza, & Mohamad Kamil, (2018), Negeri Sembilan recorded the highest case closed of 273 from 575 participants. This means the Negeri Sembilan welfare aid recipients have successfully improved their quality of lives and sustained their livelihood as micro-entrepreneurs under the facilitation of JKM and has since then become independent.

As mentioned, apart from socio-economic development, Malaysia also has done a lot of efforts to enhance the well-being and equal rights of the people, whether in rural or urban areas. This can be seen from the high penetration rates of mobile cellular in 1Q 2019 in Malaysia which is 131.4%, compared to broadband (127.1%), PayTV (87.3%) and fixed-telephone (19.7%). The same statistics also show that there are 38.8 million mobile broadband subscriptions per 100 inhabitants in Malaysia with most of the users (30.9 million) using the prepaid subscription. WP Kuala Lumpur championed the mobile broadband penetration rate with 231.3%, followed closely by Negeri Sembilan with 139.1% per 100 inhabitants (MCMC, 2019). Interestingly, Negeri Sembilan is the seventh smallest state in Malaysia with a land area of 6,657km<sup>2</sup> and consists of seven districts with five are rural inland constituency, namely Jelebu, Kuala Pilah, Rembau and Tampin. Meanwhile, Port Dickson, Seremban and Jempol are a mixture of urban, semi-urban and rural areas. The population is 1.098 million with 32.7% are from the rural areas and 67.3% from the town areas (Negeri Sembilan State Government, 2015).

According to ICT Use and Access by Individuals and Households Survey 2018, the main activities of internet use in Malaysia are Participating in Social Networks (96.5%), Finding Information about Goods or Services (83.1%), Downloading Images, Movies, Videos or Music, Playing or Downloading Games (81.7%), Downloading Software Or Applications (76.5%), Sending or Receiving E-Mails (74.8%) And Telephoning over the Internet/VoIP (70%) (Department of Statistics Malaysia, 2018). But is it the same case for the rural entrepreneurs? What are their activities of internet use? Now that we know Malaysians penetrate the internet mostly using mobiles, and Negeri Sembilan has the 2nd highest mobile broadband subscribers, the question of concern rises to how the rural entrepreneurs in Negeri Sembilan use their mobile or smartphones in their business activity? What benefits do they get?

### **1.1 Research purpose**

Therefore, the purpose of this research is to explore how the smartphones have benefitted the rural micro-entrepreneurs.

### **1.2 Research questions**

RQ1: How smartphones are used among rural micro-entrepreneurs?

RQ2: Why do rural micro-entrepreneurs use smartphones in their business?

RQ3: How do smartphones affect the rural micro-entrepreneurs' business?

## **2.0 LITERATURE REVIEW**

The normal assumptions about rural community are that they are poor people, therefore they have learning problems, low-income family and cultural problems (Bogdan & Biklen, 2007, p. 246). In researches done by many, there are many problems related to the adoption of ICTs in the rural area. Such as, internet access in the rural, with low background of education, has limits the capabilities to learn about ICTs (Jiyane & Mostert, 2010, pp. 56–57); lack of personal budget to utilise ICT (Jaganathan, Shuhymee, Ishak, Siti Noratisah, & Logeswari, 2018, p. 9); and a finding from Perez-Estebanez, Urquía-Grande, & Rautiainen (2017, p. 9) found that ICT development in poorest area is relatively slow and scattered. However, despite these obstacles, it does not stop the penetration of ICT and smartphones among rural micro-entrepreneurs.

As mentioned, in Malaysia, Negeri Sembilan is the second state with the highest penetration of mobile broadband, and this must have included the rural Negeri Sembilan 2YEP entrepreneurs. Majority

of the 2 YEP entrepreneurs are middle age and senior citizens, with age around 40s to 50s. They have a variety of disadvantaged backgrounds. Some are with physical disabilities, some with low education background and some with lifelong hardships.

There are plausible explanations of why physically disabled entrepreneurs utilise ICT and specifically smartphones and how it is being used. For example, research findings Thompson (2018, p. 20), show that mobile technologies did a tremendous help for the disabled entrepreneurs to gain extra income and to procure and deliver their products and services more efficiently. Scarborough & Cornwall (2016) in Chapter 8 on Building A Powerful Bootstrap Marketing Plan vastly explained how important smartphones and internet for the small business management and how social media is the marketing tool to generate and attract customers to their business. This is supported with literature reviews done by Lloyd & Vengrouskie (2019) that concluded the rural entrepreneurs leveraged the digital affordances with a much quicker and cheaper alternative of a digital platform, hence the usage of smartphones.

Unified Theory of Acceptance and Use of Technology outlined eight key constructs that influence technology adoption namely performance expectancy, effort expectancy, social influence and facilitating conditions (direct determinants), meanwhile attitude towards using technology, self-efficacy, anxiety and intention are indirect determinants (Venkatesh, Morris, Davis, & Davis, 2003). Several years later, the culture element was tested and confirmed to have a vital role in affecting technology adoption (Venkatesh & Zhang, 2010). Regarding empowerment, several studies have been done to explore and understand the connection between the two concepts. . Cibangu (2018, p. 150) concluded that the poor people in rural Congo see the smartphones phenomenon as worthy for the elites, too technology-centric and therefore not sensitive to the poor or disadvantaged people. Bailur & Masiero (2017, p. 93) in their research in Ghana, Kenya and Uganda women entrepreneurs found that mobile internet does not directly lead to empowerment due to factors such as too expensive and some issues in gender biases in their countries. Earlier on, Kabeer (1999) reported her research in the United Nations Research Institute for Social Development about the importance of access to new resources as an opportunity to new possibilities for empowerment. Kabeer also produced a conceptual framework of empowerment as in Diagram 1.

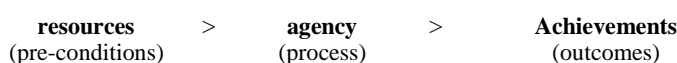


Diagram 1. The three dimensions of power, adapted from Kabeer (1999)

According to (Kabeer, 1999b), *resources* encompass human, social and all access available now and in the future, that enhances the ability for economic sense. *Agency* is about meaning, motivation, the decision making reasonings and the ability to define one's goal. The combination of resources with the agency is what is called capabilities (Sen, 1985), will, therefore, produce *achievements*. In this case, empowerment is the achievement, the rural micro-entrepreneurs' motives; are the agency and the smartphone is the resource. A study by Crittenden, Crittenden, & Ajjan (2019, p. 199), found that WhatsApp, Facebook, Email and text messaging does influence women entrepreneurs' empowerment. Hence, this brings the researcher the drive to explore and understand the phenomena of the smartphone's usage and empowerment among the rural micro-entrepreneurs in Negeri Sembilan, Malaysia. Therefore, the researcher followed the interpretivism paradigm for a deeper and better understanding of the phenomenon. Thus, the suitable methodology to analyse the interpretivism of the research purpose is via an inductive, qualitative case study research.

### 3.0 METHODS

This research was conducted by utilising the qualitative case study, (Merriam & Tisdell, 2016, p. 18) whereby the sample selection is non-random, purposeful, and small. The interview questions were pre-tested and improved before the actual data collection. The researcher has been in contact with the participants since Mac 2019 for her PhD. research purpose.

#### Sampling design

There are five (5) participants who have participated in this research. The DOSWM has provided a shortlist of samples of the successful micro-entrepreneurs from the 2 YEP pilot project in Negeri Sembilan.



The research samples were chosen using the purposive sampling method, which was following the informant criteria for this research as below:

- (i) successful rural micro-entrepreneurs from the 2 YEP Programme,
- (ii) living and operating their business in the rural districts in Negeri Sembilan, Malaysia,
- (iii) no longer a welfare aid recipient from the DOSWM, and
- (iv) using smartphones in their business activities.

Sources of the data were collected from primary and secondary sources. Primary data includes face to face and online in-depth interviews, non-participative observations, social media postings; and the secondary data collected from various government documents namely censuses and reports.

## Data Collection

**In-depth and Online Interviews.** Face to face semi-structured interviews was conducted from Mac to August 2019. Each interview session took about 1-hour depending on the research participants time to answer. During the interview, the research participants are free to use the language they are comfortable with. Interviews were recorded using an MP3 with permission from the research participants. All interviews were conducted at their business premises. In addition to the face to face interviews, the participants agreed to continue the interview sessions via WhatsApp text messaging and voice recording. According to Neergaard & Ulhøi (2007, p. 334), other data sources such as emails, telephone interviews, instant messaging are very good data collection methods and carries equivalent levels of information richness to face to face interactions.

**Non-Participative Observation.** A researcher needs to understand the context or setting of the participants by visiting this context and collect information in person (Creswell, 2003, p. 10). Therefore, during the interviews, the researcher also observes the research participants activities. This involves the frequency of calls received and made during the 1-hour interview.

**Online Observation/ Document Analysis.** Merriam & Tisdell (2016, p. 159-160) considers online, virtual, or cyber communities' observation as a form of data collection. Thus, it is important to carefully record the process, keep field notes and to develop a process for doing so. Visual data from online observation is also analyzed as part of document analysis (Leavy, 2017; Merriam, 2009). Therefore, from 1st July to 31st August 2019, the researcher also observed, documented and analyzed online visual data such as the participants' social media postings on their Facebook accounts, WhatsApp status and Instagram posts in relation with their business.

**Data Analysis Process.** Data collected were analysed using the Nvivo 12 software. The process started with transcribing the interviews and gathering of the online and on-site observation data via mobile phone screenshots and on-site fieldnotes. The analysis process continues with coding and categorizing the findings into themes. When the researcher begins hearing similar information in the interview responses and seeing similar behaviours or activities in observations, the researcher discontinued the data collection process as the research has reached its saturation point (Merriam & Tisdell, 2016, p. 101).

## 4.0 RESULTS AND DISCUSSION

Table 1 below explains the backgrounds of the research participants in this research.

Table 1. Profile of research participants and business

Participant and age	Level of education	Business Location	Types of business	Customers	Average Income earnings per month (RM)	Welfare Aid Received Previously
Aisyah (45)	SPM	Kampung Indah, Bahau	Grocery store and food stall	Local	15,000	Financial Assistance for Children
Nor (44)	Diploma	Tanjung Ipoh, Kuala Pilah	Food stall and Tailor	Local	30,000	Person with Disabilities (PWD)
Diana (34)	UPSR	Kuala Jemapoh, Kuala Pilah	Perfume founder and supplier	Local and international	20,000	Person with Disabilities (PWD)
Arel (38)	UPSR	Pekan Rembau	Printing shop and plumbing services	Local	7000-8000	Financial Assistance for Children
Amal (40)	SPM	Air Mawang, Kuala Pilah	Coconut milk seller, local fruits and groceries wholesaler	Local	1800-2000	Person with Disabilities (PWD)

The research questions can be classified as descriptive (RQ1) and interpretive (RQ2 and RQ3).

#### RQ1: How smartphones are used among rural entrepreneurs?

**Usage of smartphones.** All participants have used handphones for the past 20 years. But for smartphones, one participant only used three years ago, while the other four participants have experienced using smartphones about 7 to 10 years. All of them own one smartphone, except for Diana who has two smartphones, which is one for business and the other one for personal. Diana used a better camera quality model (Huawei Mate 20) smartphone for business which is essential for her product photography, and a less expensive one for her personal. Diana prefers to subscribe to postpaid mobile data, and the others prefer the prepaid. Other than making and receiving calls, smartphone is used for browsing the internet, instant messaging apps like WhatsApp and access to the mobile social media.

**Level of complexity using a smartphone.** For Aisyah, the oldest participant in this research, she took about 1 year to get used to it as she explained *"my daughter taught me many times until I can get used to it. I think it took me about 1 year to accept this smartphone"*. In contrast with Diana, the youngest participant took only a few hours to be familiar with the smartphone's functions *"... I explored the phone for a while ... it takes me an hour or two to get used to it"*. This is parallel to what Venkatesh & Zhang (2010, p. 19) findings that older women took more effort in the early stages of adopting new technology. Meanwhile, Amal took about three to four months to get used to smartphone *"...it was quite awkward at first since the screen is sensitive to touch and have many functions to get used to"*. However, from the online observation, the researcher asked Amal about WhatsApp Status function. Amal does not know about the latest function of WhatsApp, namely the WhatsApp Status, hence the reason why he does not use it at all. *WhatsApp Status* allows users to share text, photos, videos and GIFs that disappear after 24 hours. Nonetheless, Amal did not make use of it even after the researcher explained to Amal how it works.

**Smartphones as an educational and information resource.** Aisyah uses Youtube to learn religious matters, meanwhile, Diana says that *"I search for the source of knowledge on Youtube and Facebook"*.

Amal says that "I love to find knowledge about coconut milk. I saw it on Google and Youtube. For example, I can tell what company in Teluk Intan is making coconut milk grinder. I love finding out about coconut milk machines". Nor also used Youtube as a learning tool by watching videos from successful entrepreneurs and inspiring disabled speakers "yes, yes. I learned business through seminars and classes... and Youtube, I watched the successful businessmen...Dr. Azizan...Nick, the one born without arms and legs...they are really good ...". This can be supported by findings from Jiyane & Mostert (2010, p. 58), that despite low educational levels and background, the rural entrepreneurs realise that computer-based information, mobile cellular and services are beneficial to them and help in expanding their knowledge.

**Smartphone functions mostly used related to business.** All five participants mostly used social networks namely WhatsApp and Facebook. According to nor, WhatsApp especially the status function is really good, "From WhatsApp status, people can see the good things from us that we want to tell customers, when they can't walk in to my shop or that they don't know what I am selling today, or new friends, because I have seen that many of my contacts followed my status, and sometimes up to a hundred". Meanwhile, Diana exceeds the answer with adding she also use few applications related to product photography and video producing. Diana also used a better camera quality model smartphone (Huawei Mate 20) which is essential for her product photography. Nonetheless, many advanced computing capabilities in smartphones were not used among these participants.

Participants were also observed naturally without prior notifications from the researcher. This is to triangulate and to validate the data from the interviews. The mobile applications sources were WhatsApp, Facebook and Instagram. From the researcher's online observation/ document analysis from WhatsApp status and Facebook, the participants are moderately active in updating their business postings on the two mentioned mobile applications. The WhatsApp status mainly advertised their products and services using visual materials, i.e. real photos. Aisyah, Diana and Nor also advertise the latest promotions, goods or products available. The recorded online observations are in Table 2 below.

Table 2. Online observations from WhatsApp status, Facebook and Instagram related to business from 1<sup>st</sup> July to 31<sup>st</sup> August 2019

Participant	WhatsApp status	Facebook postings and tags	Facebook story	Instagram postings	Instagram Story
Aisyah	45 photos in 9 days	295 postings and tags on charity work etc., 80 on business	0	No account	0
Nor	252 photos in 39 days	148 postings on motivational materials, 8 on business	0	0	0
Diana	123 photos in 36 days	9 postings on personal, 9 on business	5	2 on business	0
Arel	42 photos in 15 days on business	12 postings on personal, none on business	0	6 on personal, 0 on business	0
Amal	0 status	10 postings on personal, 10 on business	0	No account	0

The researcher conducted the online observation for two months from June 1- July 31st,2019. From the five participants, only two participants were keen on updating their WhatsApp status on business matters, namely Nor and Diana. Meanwhile, Aisyah is keener and more open in using Facebook as a platform to communicate and interact with suppliers, customers, wholesalers consistently. Whereas to Amal, he only posts on Facebook when there are interesting new products in his shop. He was also not aware of the WhatsApp Status function, hence explaining why he did not use it to advertise his business. Meanwhile, for Arel, he mostly updates motivational quotes on his Facebook story and WhatsApp status, compared to business activities.

## **RQ2: Why do rural entrepreneurs use smartphones in their business?**

**Influence from outside.** Aisyah was forced by her eldest daughter to use a smartphone so that it is easier for her to contact her mother. Hence, she bought a Samsung smartphone and helped her mother to install and teach how to use WhatsApp and Facebook. *"my daughter bought it for me and forced me to use it...she said it (smartphone) is important, she can WhatsApp me anytime and she wanted me to advertise my business in WhatsApp and Facebook. She even created the Facebook Page Kedai Runcit Aisyah for me"*. Meanwhile for Nor, *"smartphone is a must-have in this era of technology where everyone is using it regardless of age... young or old, so I need to follow the trend... and help me to communicate with my customers"*. Influence by others as found by Sikundla, Mushunje, & Akinyemi (2018, p. 10) does influence the adoption of smartphone in marketing among the smallholder farmers in South Africa. This can be further explained from the Unified Theory of Acceptance and Used of Technology (Venkatesh et al., 2003).

**Intention to use.** For Diana, she bought Huawei Mate 20 because value for the money. She needs a quality camera for her product photography, *"so instead of I buy a camera, its worthwhile buying a smartphone with a better-quality camera, after all its easier to upload to social media directly from smartphone without the hustle of transferring etc."*. Diana added that smartphone helps her business to prosper in her limited and disabled condition, it really helps her to reach out and connect with people. Same goes with another disabled rural entrepreneur, Nor. She chooses smartphone because of *"quality camera, easy to use, durable, light and easy to bring anywhere"*. This is parallel with Zeinab et al. (2015, p. 160) that intention to use technology refers to the individual's intention for a specific action.

## **RQ3: How do the smartphone affect the rural entrepreneurs' business?**

**Improve the way of communication in business and life.** For Arel, the smartphone is not the main tool to his business, compared to a computer, as he runs a printing and cyber shop. Nonetheless, he agrees that smartphone is important as a fast communication tool with customers, either using free call or free text messaging via WhatsApp. Arel also keens on advertising his shop location using Google maps via Facebook and WhatsApp. *"...when I make my business advertisement on social media, indirectly it will people will know the location of my business and the products I sell. This has made it easier for me to make more and more announcements on social media"*. As for Amal, the smartphone takes the place of his walking and moving as he says, *"because I am using a prosthetic leg to move, I cannot go around like normal people...so smartphone helped me a lot in connecting me from distant with my family, friends, customers and the village folks"*. Amal also added *"I just go with the flow since everyone has a smartphone, so I just follow the trend... It's easy to get in touch with family ... It's quick to know anything nowadays."* All participants preferred smartphones because it is a tool that enables them to do business work anywhere. As a mobile-enabled technology, the smartphone is increasingly becoming the primary characteristic of the post personal computer era (Thompson, 2018, p. 10).

**Enhanced marketing and sales.** The participants were asked about the benefits of using smartphones for their business. The researcher gathered answers such as from Aisyah *"I can always advertise on Facebook"*, *"increasing customers"*, and *"today I sold many sacks of rice, its already 48 sacks of 5 kilogrammes rice, result from advertising in Facebook and WhatsApp"*. This proves that sales can increase tremendously due to smartphone social networking marketing. Adding on to that, Diana mentioned that *"because of the smartphone, my business can move and grow...I use it to connect myself to the outside world...or my customers...just by using smartphone I can close sales with customers"*. She also mentioned that she does not like to keep the customers waiting for her reply in WhatsApp, so she usually acts quickly to respond to customers enquiries. For Nor, *"So we share about the good stuff from our products. Maybe not today or tomorrow, maybe not 10 times also, but one day people know and from there they will pass the words of mouth to other friends. We don't want the person to see it, we want ten people at the back of that person to see it. So, they deliver the words of mouth... the power of words of mouth is very powerful. So, this is a promotion...in my condition...this is one way to promote my business"*. As for Amal, Facebook and WhatsApp mobile apps helped him as a wholesaler to quickly advertise and sell fresh fruits and vegetables that the local villagers sold to him. Since his coconut milk stall also is the "hub" for local fruits and agriculture produce, the small roadside stall received nonstop visits from customers (researcher's on-site

observation, 23rd July 2019). This active online interaction going on between the entrepreneurs and customers can be explained by Fogg & Eckles (2007) framework of Behavior Chain for Online Participation.

**Dependency on the smartphone.** Diana emphasizes the importance of maintaining her mobile network data, since it is the only device with internet access, as she does not use computers or other gadgets. She said, *"Of course, it's very useful ... and the most important thing is, I must have internet data ..."*. Meanwhile to Nor, she made the importance of a smartphone as an analogy that *"smartphone is the soul of my business"*. Amal made a point that *"it is a must-have in this era of time...because the facilities are already available. It is a loss if I don't use it. At least I am not out of date"*. But in contrast with Arel, *"I don't depend on smartphone so much, because I use a computer within quite a long time because the computer is the primary usage in my business"* and Aisyah also does not see that she depends so much on smartphone to prosper her groceries shop as she said *"It's alright if I don't have a smartphone, as it only helps a little in attracting more customers, but to compare during the times I don't use smartphone or internet, I can get forty thousand Ringgit a month... because of construction sites nearby...But now there is no building to build"*. Therefore, to Aisyah, smartphone just supports advertising but does not directly contribute to the growth of her business. Sam (2017, p. 125) emphasized that smartphones are personal tools, therefore it is up to individual decisions on how its used and purpose of using it and thus the expected outcomes among entrepreneurs varies.

## 5.0 CONCLUSION AND RECOMMENDATION

In this research, the researcher tried to explore and understand the phenomena of smartphones usage and effects among the rural micro-entrepreneurs in Negeri Sembilan, Malaysia. Nonetheless, this research has its limitations such as the findings cannot be generalized to another population, nor are they exhaustive. The findings lead to the conclusion of how minimal the rural micro-entrepreneurs accept and adopt the smartphone functions in their daily business activities. Their usage preference is mostly on text messaging application-WhatsApp and mobile social media-Facebook. To facilitate the uptake of this affordable plus important mobile technology, it is recommended that the key stakeholders' organisations utilise adult education concepts in attracting and engaging the rural micro-entrepreneurs to embrace technology. It is important to understand some basic principles about how adults in the rural with minimal education level interests in learning on new knowledge, skills and gadgets. With a small number of resources available among the rural micro-entrepreneurs in term of manpower, money and material, they use whatever cost-effective resources that can give consistent outcome they can get to help their business move forward. Though some are ambitious and eager to use a smartphone, some are not willing to explore further. For micro-entrepreneurs with disabilities, smartphones play significant roles in their economic empowerment.

The effects of the smartphone on empowerment are very subjective and conditional. Empowerment is mainly about embracing change and doing it with all the resources one can get. Whatever the effects of the smartphone, this paper suggests that the community development agencies such as Ministry of Entrepreneur Development (MED), Ministry of Rural Development, Ministry of Women, Family and Community Development and other agencies, NGOs or social movement bodies can contribute more in making the empowerment more viable. This can be done by organising and engaging in digital empowerment programs for the rural micro-entrepreneurs leveraging their access to digital commerce, internet marketing and such. Therefore, it is recommended that more empirical studies should be done in this field, in other rural parts of this country.

## REFERENCES

- Bailur, S., & Masiero, S. (2017). Women's income generation through mobile Internet: A study of focus group data from Ghana, Kenya, and Uganda. *Gender, Technology and Development*, 21(1-2), 77-98. <https://doi.org/10.1080/09718524.2017.1385312>
- Bogdan, R. C., & Biklen, S. K. (2007). *Qualitative Research for Education An Introduction to Theory and Methods* (5th ed.). Boston, U.S.A.: Pearson Education, Inc. Retrieved from <http://eric.ed.gov/?id=ED419813>

- Cibangu, S. K. (2018). Connectivity and Empowerment: A Case Study of Cell Phone Technology in Rural Congo. *Library Trends*, 66(2), 119–154. <https://doi.org/10.1353/lib.2017.0032>
- Creswell, J. W. (2003). *Research design: Qualitative, Quantitative and Mixed Method Approaches Second Edition. Methods.*
- Crittenden, V. L., Crittenden, W. F., & Ajjan, H. (2019). Empowering women micro-entrepreneurs in emerging economies: The role of information communications technology. *Journal of Business Research*, 98(January), 191–203. <https://doi.org/10.1016/j.jbusres.2019.01.045>
- Department of Statistics Malaysia. (2018). *ICT Use and Access By Individuals and Households Survey Report, 2018. Press release of Statistic Department of Malaysia.* Retrieved from [https://www.statistics.gov.my/index.php?r=column/cthemByCat&cat=395&bul\\_id=Q3l3WXJFbG1PNjRwcHZQTvISR1UrQT09&menu\\_id=amVoWU54UTl0a2lNWmdhMjFMMWcyZz09](https://www.statistics.gov.my/index.php?r=column/cthemByCat&cat=395&bul_id=Q3l3WXJFbG1PNjRwcHZQTvISR1UrQT09&menu_id=amVoWU54UTl0a2lNWmdhMjFMMWcyZz09)
- Fogg, B. J., & Eckles, D. (2007). The Behavior Chain for Online Participation: How Successful Web Services Structure Persuasion. In *Persuasive Technology* (pp. 199–209). [https://doi.org/10.1007/978-3-540-77006-0\\_25](https://doi.org/10.1007/978-3-540-77006-0_25)
- Ifwan, T. T. (2017). Program KPWK M bantu golongan miskin. *Berita Harian Online*, p. 1. Retrieved from <https://www.bharian.com.my/node/266409>
- Jaganathan, M., Shuhymee, A., Ishak, K. A., Siti Noratisah, M. N., & Logeswari, U. (2018). Determinants for ICT adoption and problems: Evidence from rural based small and medium enterprises in Malaysia. *International Journal of Entrepreneurship*, 22(4), 1–14.
- Jiyane, V., & Mostert, J. (2010). Use of Information and Communication Technologies by Women Hawkers and Vendors in South Africa. *African Journal of Library, Archives & Information Science*, 20(1), 53–61.
- Kabeer, N. (1999a). Resources , Agency , Achievements : Reflections on the Measurement of Women's Empowerment. *Development and Change*, 30(May), 435–464. <https://doi.org/https://doi.org/10.1111/1467-7660.00125>
- Kabeer, N. (1999b). *The Conditions and Consequences of Choice: Reflections on the Measurement of Women's Empowerment* (UNRISD Discussion Paper No. 108) (Vol. 30). <https://doi.org/10.1037/0022-3514.81.2.332>
- Leavy, P. (2017). *Research design : quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches. The sage Dictionary of social research methods.*
- Lloyd, R. A., & Vengrouskie, E. F. (2019). Digital Circumvention as a Means to Overcome Geographic Limitations : Defining the New Rural Entrepreneurial Ecosystem. *Journal of Strategic Innovation and Sustainability*, 14(4), 63–70.
- Malaysian Communications and Multimedia Commission. (2010). Kenyataan Media Pelancaran Kampung Wifi Ke Arah Merakyatkan Jalur Lebar. Retrieved August 4, 2019, from [https://www.skmm.gov.my/skmmgovmy/files/attachments/KA\\_12\\_Mei\\_2010\\_Pelancaran\\_Kampung\\_WiFi.pdf](https://www.skmm.gov.my/skmmgovmy/files/attachments/KA_12_Mei_2010_Pelancaran_Kampung_WiFi.pdf)
- Malaysian Communications and Multimedia Commission. (2019). Komunikasi & Multimedia : Fakta dan Angka Terpilih, 1Q 2019 JUN 06, 2019. Retrieved August 3, 2019, from <https://www.mcmc.gov.my/resources/statistics/communications-and-multimedia-pocket-book-of-stati>
- Merriam, S. B. (2009). *Qualitative Research A Guide to Design and Implementation* (Second). San Francisco, CA: Jossey-Bass. <https://doi.org/10.1017/CBO9781107415324.004>
- Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative Research: A Guide to Design and Implementation* (4th ed.). San Francisco: Jossey-Bass.
- Neergaard, H., & Ulhoi, J. P. (2007). Handbook of Qualitative Research Methods in Entrepreneurship. *Edward Elgar Publishing Limited*, 10.1108/13(17), 499. <https://doi.org/10.4337/9781847204387>
- Negeri Sembilan State Government. (2015). Taburan penduduk Negeri Sembilan mengikut daerah. Retrieved July 14, 2019, from [http://www.data.gov.my/data/ms\\_MY/dataset/taburan-penduduk-negeri-sembilan-mengikut-daerah](http://www.data.gov.my/data/ms_MY/dataset/taburan-penduduk-negeri-sembilan-mengikut-daerah)
- Noraida, I., Salamatussaadah, A. G., Wan Zabariah, W. H., Haniza, T., & Mohamad Kamil, M. U. (2018). Kajian Penilaian Outcome: Program Exit Bagi Penerima Bantuan Jabatan Kebajikan Masyarakat Yang Produktif. *Jurnal Kebajikan Masyarakat (Social Welfare Journal)*, 45(Nov), 109–118.
- Perez-Estebanez, R., Urquía-Grande, E., & Rautiainen, A. (2017). Technological and Economic Factors Determining ICT Level: Evidence from Rural Micro-Businesses in Democratic Republic of Congo.

- Journal of International Development*, 30(1), 118–133. <https://doi.org/10.1002/jid.3281>
- Sam, S. (2017). Towards an empowerment framework for evaluating mobile phone use and impact in developing countries. *Telematics and Informatics*, 34(1), 359–369. <https://doi.org/10.1016/j.tele.2016.06.003>
- Scarborough, N. M., & Cornwall, J. R. (2016). *Essentials of Entrepreneurship and Small Business Management* (Eighth). Edinburgh Gate Harlow Essex CM20 2JE England: Pearson Education Limited.
- Sen, A. (1985). Well-Being, Agency and Freedom: The Dewey Lectures 1984. *Journal of Philosophy, Inc.*, 82(4), 169–221. <https://doi.org/10.2307/2026184>
- Sikundla, T., Mushunje, A., & Akinyemi, B. E. (2018). Socioeconomic drivers of mobile phone adoption for marketing among smallholder irrigation farmers in South Africa. *Cogent Social Sciences*, 4, 1–12. <https://doi.org/10.1080/23311886.2018.1505415>
- Thompson, S. (2018). *Mobile technology and inclusion of persons with disabilities*. Brighton, UK. Retrieved from <https://opendocs.ids.ac.uk/opendocs/handle/123456789/13834>
- Unit Perancang Ekonomi. (1986). *Rancangan Malaysia Kelima (1986-1990)*.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 27(3), 425–478. <https://doi.org/10.2307/30036540>
- Venkatesh, V., & Zhang, X. (2010). Unified Theory of Acceptance and Use of Technology: U.S. Vs. China. *Journal of Global Information Technology Management*, 13(1), 5–27. <https://doi.org/10.1080/1097198X.2010.10856507>
- Zeinab, Z., Bahaman, A. S., Mahazan, M., Siti Zobidah, O., Jusang, B., Md Salleh, H., & Hayrol Azril, M. S. (2015). A Test of the Technology Acceptance Model for Understanding the ICT Adoption Behavior of Rural Young Entrepreneurs. *International Journal of Business and Management*, 10(2), 158–169. <https://doi.org/10.5539/ijbm.v10n2p158>

# **EDUCATIONAL LEADERSHIP, POLICY AND ADMINISTRATION**



## Achieving SDG 4 Quality Education in Malaysia: What are the Lessons from International Large Scale Assessments?

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### ABSTRACT

*The United Nations 2030 Agenda for Sustainable Development Target 4 is to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”. As part of this global agenda International Large Scale Assessments (ILSAs) of educational attainment are becoming more prominent in educational policymaking as many jurisdictions adapt their domestic education policy agendas to reflect a wider transnational and global paradigm beyond the boundaries of traditional legacies and cultural contexts. Between 1999 and 2015 Malaysia participated in the Trends in International Mathematics and Science Study (TIMSS) and Programme for International Student Assessment (PISA) surveys, but Malaysian students were not perceived to have performed well, with results closer to those of Indonesia and Thailand than higher performing Singapore. The Ministry of Education Malaysia responded to these perceptions by commissioning in 2011 a report from the United Nations Educational, Scientific and Cultural Organization and by developing the Malaysia Education Blueprint 2013-2025. The PISA 2015 results were generally seen as vindicating and demonstrating the effective progress of the reform programme, but the results of PISA 2015 were also used by the Ministry of Education’s TIMSS and PISA Steering Committee to reshape the Blueprint through a range of short and long-term policy recommendations including developing students’ Higher Order Thinking Skills (HOTS). This paper briefly reviews the rationale for the proposed changes, sketches the comparative ASEAN context, and contrasts a range of PISA derived school characteristics across Malaysia, Singapore and Indonesia. The data suggest that schools in Malaysia tend to be more similar to those in Indonesia than Singapore, but also that Malaysian schools are adequately resourced and have good standards of school leadership. However, Singapore schools appear to have more effective accountability structures, better organised professional development mechanisms and to provide significantly more extra-curricular activities designed to boost creative thinking. It is concluded that the Malaysia Education Blueprint 2013-2025 has targeted various measures to improve student performance and that the actions already taken provide a good foundation for addressing the points identified in the present paper.*

**KEYWORDS:** education policy, evidence-based policymaking, ASEAN, PISA, international large scale assessments

## 1.0 INTRODUCTION

At the dawn of the new millennium the Malaysian government set the ambitious target that Malaysia would become a fully developed nation by 2020 and as signatory of the United Nations Sustainable Development Goals (UN SDGs) committed itself to providing inclusive and equitable quality education and lifelong learning opportunities for all its citizens. These bold objectives are to be achieved through the implementation of central government plans, the most recent of which is the 11th Malaysia Plan (2016-2020), which aims to transition Malaysia from a primary producer to a high value-add economy with productivity growth of 3.7% per year (Asada, Nixon, & Koen, 2017). It has long been recognised that effective education will be key to the achieving the aim of Malaysia becoming a developed nation (Wan, Sirat, & Razak, 2018), but speaking at the Global Malaysia Series forum on March 25, 2014 World Bank senior economist for Malaysia Frederico Gil Sander claimed that the poor standard of the Malaysian education system was more of a threat to the nation’s future than household debt (Boo, 2014).

### 1.1 International Large Scale Assessments

Since the mid-1990s there has been a substantial rise in number of educational international-large scale assessments (ILSAs; Addey, 2017; Williams & Engel, 2013) and the Programme for International Student Assessment (PISA) launched by the Organisation for Economic Co-operation and Development (OECD) in 2000 has become the most widely used ILSA (Hopfenbeck, 2016). PISA is completed every

three years and uniquely among ILSAs it aims to measure “young people’s ability to use their knowledge and skills to meet real-life challenges. ... [and] the student, family and institutional factors that can help to explain differences in performance” (OECD, 2006, pp. 16 -17). Critiques of PISA have tended to focus on the student assessment, with some researchers arguing that PISA is methodologically flawed (Fernandez-Cano, 2016), may assess dimensions too narrowly (Klette, Bergem, & Roe, 2016), be psychometrically unsound (Goldstein & Thomas, 2008), be unfairly biased against minority groups (Stobart, 2005; Thompson & Allen, 2012), and may not be suitable for making valid multi-lingual and cross-national comparisons of educational performance (El Masri, Baird, & Graesser, 2016; Gorur, Sørensen, & Maddox, 2019; Jerrim et al., 2018). Conversely, advocates argue that PISA provides robust data for education policymaking and reform (OECD, 2019; Schleicher, 2009) and because such data have been used to make many transnational comparisons (Schleicher, 2014, 2007; Winthrop & Simons, 2013) PISA results have become catalysts for change in domestic education policy debates (Baird et al., 2016; Hopfenbeck et al., 2018).

## 1.2 Malaysian Response to Programme for International Student Assessment Results

Malaysia has participated in PISA since 2009 alongside the other ASEAN nations of Indonesia, Singapore, and Thailand, with Vietnam joining the assessment in 2015 cycle. However, Malaysia has not appeared to perform particularly well on the student assessments, with scores falling below those for Singapore and Vietnam and only slightly above those for Indonesia and Thailand.

Table 1: 2015 PISA Scores for the five participating ASEAN nations

	Maths	Reading	Science
<b>Indonesia</b>	386	403	403
<b>Malaysia</b>	446	443	443
<b>Singapore</b>	564	556	556
<b>Thailand</b>	415	421	421
<b>Viet Nam</b>	495	525	525

The comparatively weak performance of Malaysian students came as something of a shock to Malaysian policymakers (Thien, 2016) and unsurprisingly it provoked concerns that Malaysia might not be able to achieve developed status because young Malaysians would not have the skillset required for the economy to break out of the so-called middle income trap (Jimenez, Nguyen, & Patrinos, 2013). The Malaysian government responded to the challenge by commissioning UNESCO to undertake the Malaysia Education Policy Review which led to a series of recommendations incorporated in the Malaysia Education Development Plan 2013-2025 (Azmy, Mursalina, Abdullah, & Ayub, 2016). The curriculum was expanded to include areas such as the development of soft skills, ethical decision-making, problem solving, team work and Higher Order Thinking Skills (HOTS) (Aisyah, Salehuddin, Aman, Yasin, & Mimiko, 2019; Hudin, Osman, Shokory, & Ab Wahid, 2018). The fact that the PISA 2015 results for Malaysia were better than those for 2012 were widely seen as supporting the initial curricula reforms programme (Abas & Mohd Shahar, 2016). However, alongside improvements to the curriculum it has been argued that increasing levels of school autonomy, teacher accountability and performance management may have a significant impact on Malaysia’s PISA performance (Perera & Asadullah, 2019; The World Bank, 2011).

## 1.3 The Global Education Reform Model

Changes in school management and accountability are central to the Global Education Reform Model (GERM; Sahlberg, 2006) which is promoted by various multi-lateral educational organisations such as the IEA, UNESCO, World Bank and OECD (Grimmett, 2018; Klees, 2008; Sahlberg, 2016; Shahjahan, 2016; Verger, Novelli, & Altinyelken, 2018b). Among other prescriptions GERM proposes that schools should be well resourced, and that school leaders and teachers should have high levels of autonomy (Sahlberg, 2016), and PISA data have been used to justify such reforms in various Asian jurisdictions including Hong Kong (Adamson, Forestier, Morris, & Han, 2017), Japan (Kimura & Tatsuno, 2017; Tasaki, 2017), Shanghai (Ngok, 2007; Sellar & Lingard, 2013; Tan, 2012, 2017) and Singapore (Lee, Lee, & Lee, 2014; Tan, 2011).

#### 1.4 School Measures in the Programme for International Student Assessment

PISA 2015 contained items which were designed to assess school governance, autonomy, resourcing and related contextual features salient to the prescriptions of GERM (OECD, 2016). Using the PISA 2015 school questionnaire it is possible to derive a range of composite scale scores which are calculated using the generalised partial credit model (GPCM) and weighted likelihood estimates to develop an international metric with a mean of zero and standard deviation of one that provides a standardised score for each school (see OECD, 2015). Some of these composite scales are shown in Table 2 below and give a set of measures that can be used to contrast Malaysian schools against comparator institutions in other ASEAN nations.

Table 2: The PISA 2015 School Questionnaire Derived Variables

Scale	Area Assessed
LEAD	Educational leadership
LEADCOM	Curricular development
LEADINST	Instructional leadership
LEADPD	Professional development
LEADTCH	Teachers participation
RESPCUR	Responsibility for curriculum
RESPRES	Responsibility for resources
SCHAUT	School autonomy
TEACHPART	Teacher participation
EDUSHORT	Shortage of educational material
STAFFSHORT	Shortage of educational staff
CREACTIV	Creative extra-curricular activities
STUBEHA	Student behaviour hindering learning
TEACHBEHA	Teacher behaviour hindering learning
STRATIO	Student-Teacher ratio

Research has shown that the dimensions shown in Table 2 are critical in achieving educational success (Burns, Köster, & Fuster, 2016) so it is clearly of interest to establish how Malaysia compares in these areas relative to other nations. Thus, the present research examined the score differentials on these composite scales for Malaysia relative to the highest and lowest performing ASEAN nations, namely Singapore and Indonesia, in order to identify those areas in which interventions might be targeted and also to highlight areas where further research might be warranted.

## 2.0 METHOD

The 2015 PISA School Questionnaire data for Indonesia, Malaysia and Singapore were downloaded from the OECD PISA website and the scores for the composite scales shown in Table 2 above were extracted. As the standardisation process employed to calculate the composite scale scores inevitably yields a distribution of scores with a notional mean of zero it follows that half the scores are negative, making it difficult to compare the magnitude of scores easily. Therefore, for the sake of expositional clarity each of the scale scores was transformed by adding the minimum score in the range to all the scores so that the aggregate scales were expressed as positive numbers (for the composite scale characteristics see OECD, 2015, pp.325-327). The number of schools included in the survey and the means of the transformed scale scores for each of the five ASEAN nations' are shown in Table 3 below.

Table 3: Transformed mean scores for the PISA 2015 School Questionnaire Derived Variables for the three comparator ASEAN nations

PISA Scale	Indonesia (n=236)	Malaysia (n=221)	Singapore (n=176)
LEAD	6.9204	7.4349	6.9762
LEADCOM	5.0286	5.5988	5.1832
LEADINST	4.0223	4.6042	4.2636
LEADPD	3.8988	4.0612	3.9949
LEADTCH	4.1455	4.2968	3.8350
RESPCUR	1.7558	0.3734	1.0732
RESPRES	1.3057	0.3570	0.5093
SCHAUT	0.8258	4.8200	0.7370
TEACHPART	5.5805	1.4509	2.7119
EDUSHORT	2.1490	1.2341	0.5972
STAFFSHORT	1.5303	1.5578	1.2051
CREACTIV	1.8017	1.9189	2.5341
STUBEHA	1.4671	1.8666	1.7778
TEACHBEHA	1.2530	1.8256	2.1602
STRATIO	98.5823	37.9910	45.3443

### 3.0 ANALYSIS AND RESULTS

As the composite scale scores were normally distributed it was possible to use parametric procedures to make contrasts between the national scores for each scale so the data were subjected to a one-way Analysis of Variance (ANOVA) and, as is immediately apparent from Table 4, in almost every case there were significant differences between the scores for the three nations.

Table 4: Summary ANOVA results for the comparison of the transformed scores for the PISA 2015 School Questionnaire Derived Variables for Malaysia, Indonesia and Singapore

PISA Scale	F	Probability Value
LEAD	13.791	0.001
LEADCOM	21.988	0.001
LEADINST	22.297	0.001
LEADPD	1.531	0.217
LEADTCH	9.072	0.001
RESPCUR	146.277	0.001
RESPRES	62.047	0.001
SCHAUT	0.758	0.469
TEACHPART	190.975	0.001
EDUSHORT	120.438	0.001
STAFFSHORT	7.7	0.001
CREACTIV	40.878	0.001
STUBEHA	10.47	0.001
TEACHBEHA	55.017	0.001
STRATIO	5.398	0.005

It is clear from the figures given in Table 4 that there are no significant differences in the amount of Professional Development (LEADPD) or School Autonomy (SCHAUT) across the three jurisdictions, but that there do appear to be marked differences across the other indices. In order to explore these potential differences further, a series of individual t-tests was conducted and the results are summarised in Table 5.

Table 5: Summary t-test results comparing the mean transformed scores for the PISA 2015 School Questionnaire Derived Variables for Malaysia, Indonesia and Singapore

PISA Scale	Malaysia vs Indonesia	Malaysia vs Singapore	Singapore vs Indonesia
LEAD	4.663*	4.196*	0.529
LEADCOM	6.296*	4.877*	1.623
LEADINST	6.353*	3.915*	2.701
LEADPD	1.721	0.660	0.986
LEADTCH	1.426	4.494*	-3.007*
RESPCUR	-17.348*	-8.792*	-7.308*
RESPRES	-9.977*	-2.034	-7.726*
SCHAUT	0.900	0.920	-5.157*
EDUSHORT	-8.717*	8.770*	-15.391*
STAFFSHORT	0.303	3.828*	-3.196*
CREACTIV	1.322	-8.655*	9.426*
STUBEHA	4.137*	0.882	3.688*
TEACHBEHA	6.702*	-3.590*	10.996*
STRATIO	-2.912	-0.429	-2.378

\*p<0.0036

Despite the fact that the ANOVA had shown most of the composite scale means to be different across the three nations, for the sake of parsimony and to minimise the likelihood of Type I errors, the Bonferroni correction was applied to the probabilities such that only those probabilities less than 0.0036 (0.05/14) would be considered significant. For ease of interpretation, the first named nation in each column was the first entered into the analysis such that a positive *t* indicates that the mean score for that nation was higher than for the second named nation; it follows, that a negative *t* shows that the mean score for the first named nation was lower than for the second.

### 3.1 School Leadership

Given the supposed centrality of leadership to PISA success the findings for the five main leadership indices are perhaps surprising. Malaysia scores significantly higher than both Indonesia and Singapore for the overall Educational Leadership (LEAD), Curricular development (LEADCOM) and Instructional Leadership (LEADINST) dimensions. There are no significant differences between the nations for Professional Development (LEADPD), but both Malaysia and Indonesia have similar scores for Teachers' Participation (LEADTCH) that are higher than those for Singapore. Clearly this suggests that Malaysian principals are providing higher levels of Western-style leadership than their peers in Singapore or Indonesia, and that both Malaysia and Indonesia have higher levels of teacher participation in leadership than the higher performing Singapore schools.

### **3.2 School Autonomy**

Turning now to the measures of institutional independence it seems that Singapore principals report having less School Autonomy (SCHAUT) than their peers in Indonesia, but that Malaysia sits between the two. Indonesian and Singaporean principals appear to have significantly more Responsibility for Curriculum (RESPCUR) than principals in Malaysia, suggesting that school heads in these countries are able to determine what is taught much more than their Malaysian peers.

### **3.3 School Staffing and Resources**

Indonesia and Malaysia appear to have similar and significantly higher Shortages of Educational Staff (STAFFSHORT) than Singapore, though both report lower Shortages of Educational Material (EDUSHORT) than Singapore.

### **3.4 Student Creative Thinking**

Singapore has significantly higher levels of Creative Extra-curricular Activities (CREACTIV) than Malaysia or Indonesia which share the same comparatively lower level. On both the Student Behaviour Hindering Learning (STUBEHA) and Teacher Behaviour Hindering Learning (TEACHBEHA) scales higher scores indicate higher levels of hindering. Thus, it appears that students and teachers hinder learning significantly more in Malaysia than Indonesia, and that teachers hinder learning most significantly in Singapore, though there is no significant difference between Malaysian and Singaporean students in this respect.

### **3.5 Student-Teacher Ratio**

Lastly, Indonesia has a significantly higher Student-Teacher Ratio (STRATIO) than Malaysia and Singapore.

## **4.0 DISCUSSION**

It is clear from the findings reported above that Malaysian educational institutions differ significantly from higher performing Singaporean schools and lower performing Indonesian schools, but not necessarily in the ways that might be expected.

### **4.1 School Autonomy**

It appears that Malaysian principals have similar levels of autonomy to those of higher performing Singapore, but rather less than those in lower performing Indonesian schools,. GERM as promoted by the OECD places a heavy emphasis on the importance of school autonomy (Sahlberg, 2016), but it appears that autonomy may only benefit schools which have a strong academic ethos and are already performing well within clear and supportive governance structures (You & Morris, 2016). Indeed autonomy in the absence of sound governance and administrative competence may lead to weaker performance (Hanushek, Link, & Woessmann, 2011) and within the Singapore education system levels of autonomy are graduated on this basis across state and quasi-independent state-funded schools (Chan & Tan, 2008). In Singapore state schools direct central control has been to some extent replaced by the formation of school collectives or clusters with some aspects of administration shared across schools (Gopinathan & Lee, 2018) and by greater accountability to parents and alumni through governing bodies established under the School Boards (Incorporation) Act passed in 1990. Malaysia implemented school clusters in 2006 and the Malaysia Education Blueprint 2013- 2025 (MoE, 2013) promotes greater levels of autonomy based on academic performance, but this has not been matched by a corresponding increase in accountability to parents and alumni. Indeed, Malaysian parents may “have the right to be fully informed about the school’s mission, current performance, and annual improvement programme.” (MoE, 2013, p. E-24) via the PIBGs (Parent-Teacher Associations) legally established in 1973, but school accountability ultimately rests with civil servants because decentralisation means “more decision rights being awarded to state and district offices. Officials will have more say in identifying areas of improvement for their states, districts, and schools, and in tailoring solutions” (MoE, 2013, p. E-24).

#### 4.2 School Leadership

Malaysian and Indonesian principals appear to exercise leadership in a more participative way that is closer to the expectations of GERM than the approach of their Singaporean peers, yet given Singapore's relative success this would seem to imply that a more directive leadership style may be more effective. Indeed, it appears that principals in Singapore tend to display high levels of assertiveness and competitiveness even though they are not always content to do so (Walker & Hallinger, 2015) and this may help to explain the finding that Singapore teachers are more likely to hinder education than those in Malaysia or Indonesia because Singaporean teachers are expressing their discontent through lack of co-operation, higher incidences of disagreement, absenteeism, etc. Indeed, there is evidence that when ASEAN school principals take more responsibility and become enablers rather than delegators then teacher performance does actually improve (Lee & Nie, 2017). Given that teachers in low performing schools are receptive to training and development exercises (Ansawi & Pang, 2017) and that school leadership effectiveness appears to be proportional to school principals' level of training (Hallinger & Walker, 2017) school leadership may be an area where it may be possible to drive substantial improvements relatively quickly. The Malaysian government has recognised this point and has introduced a National Professional Qualification for Educational Leaders which is mandatory for those who aspire to become principals (Ng, 2017), but it has been suggested that leadership in Malaysian schools has continued to be more reflective of a traditional centralised style of management (Bush, Abdul Hamid, Ng, & Kaparou, 2018; Bush & Ng, 2019). Clearly these tentative ideas warrant more focused research to understand exactly how management and school performance may be related and the extent to which the national qualification may contribute to success.

#### 4.3 Students, Staff and Resources

Malaysian and Singaporean students appear to have similarly good levels of positive behaviours in contrast to Indonesian students, suggesting that Malaysian students would be expected to perform at comparable levels. Similarly, the fact that staff-student ratios are not significantly different between Malaysia and Singapore suggests that the number of teachers is not a significant factor in performance, although the fact that Malaysia and Indonesia appear to have greater difficulties in attracting suitable teachers in comparison to Singapore may be important for the overall quality of the school system. The surprising finding that Malaysian and Indonesian schools appear to have better access to educational materials than Singapore perhaps underscores the contention that money and resources are not the primary determinant of educational success (Hanushek & Woessmann, 2017), but could equally be a reflection of differences in materials costs or even interpretations of what constitutes 'adequate' access to materials. There appear to be some clear differences in the levels of resourcing between urban and rural schools in Malaysia (Marwan, Sumintono, & Mislan, 2012), but how far this may or may not lead to differential performance requires more exploration. Moreover, even if an educational system is well funded in absolute terms presumably no amount of materials can compensate for the lack of suitable teaching staff to deliver the curriculum effectively and the extent to which Malaysian schools may struggle to recruit suitable members of staff urgently needs further investigation.

#### 4.4 Staff Training and Development

Once teachers are hired the present research appears to show that Malaysia does not offer significantly more staff development and training than Singapore or Indonesia. However, Singapore supports training delivered through Professional Learning Communities (PLCs) within each school, each consisting of Professional Learning Teams (PLTs) normally organised on the basis of subject discipline, which are organised to share best practice amongst colleagues in a structured fashion (Hairon & Tan, 2017). As Hairon and Tan acknowledge, this is in part only possible because Singapore is small enough for the central authorities to ensure that PLCs and PLTs are functioning correctly, but they also note that Shanghai with a population of over 20 million has been able to evolve a very similar system. The Malaysia Education Blueprint 2013-2025 highlights the importance of effective professional development for all teachers, but in place of PLCs "The Ministry will then be better able to identify which areas teachers need support in, and will then provide as much targeted support as possible." (MoE, 2013, p. 5-10). Other scholars have already identified the important role that PLCs may have to play in turning around poor performing schools in Malaysia and Indonesia (Harris & Jones, 2017) and suggested that PLCs should be adopted across Malaysia (Hassan, Ahmad, & Boon, 2018).

#### 4.5 Student Creative Thinking

Lastly, it is clear that Singaporean principals offer higher levels of Creative Extra-curricular Activities than the relatively low levels in Malaysia and Indonesia. This suggests that supplementing the HOTS programme by enhancing thinking skills through activities outside the formal curriculum may well be beneficial to Malaysian students, an area that would offer many fruitful opportunities for future research.

#### 4.6 Implications for Malaysian Schools

The findings presented here are based upon the results of a survey and this means that they are subject to all the caveats and limitations that are associated with any self-report measure. Nevertheless, there do appear to be some significant differences between the high performing Singaporean school system and those of Malaysia and Indonesia. It appears that overall school autonomy and leadership approach may be less important to high educational attainment than school-level accountability to parents and alumni, the ways in which teacher professional development is supported, and activities designed to enhance creativity. It also seems likely that staff shortages may be a more significant factor in Malaysian schools' underperformance than has previously been recognised, and this is clearly an area that needs urgent attention. The Ministry of Education through the Malaysia Education Blueprint 2013-2025 clearly recognises the importance of many of these areas and has already taken steps to make significant improvements. The publication of the next PISA results in December 2019 will give some indications of how much progress has been made on delivering the inclusive and equitable quality education that will help Malaysia achieve high income status. If, as seems likely, the reforms begun in 2013 have begun to yield positive improvements then it may well be possible to implement further reforms around school governance and staff development in line with the measures that have proved effective in Singapore and, building upon the sound foundations of the Malaysia Education Blueprint, it may be possible to exceed the ambitious targets set for 2025.

### 5.0 CONCLUSIONS

In many respects Malaysian schools are closer to those in Singapore than Indonesia, but student performance on PISA is lower than this would imply. Through the Malaysia Education Blueprint 2013-2025 the Ministry of Education Malaysia has already implemented curriculum reforms and taken steps to improve the quality of school leadership, staff development and student higher order thinking. However, further reforms to increase school accountability to parents, to establish PLCs to support staff development within schools and an increase in creativity-related extra-curricular activities have the potential to deliver further improvements.

### REFERENCES

- Abas, A., & Mohd Shahr, F. (2016, December 6). PISA 2015: Malaysia shows significant improvement in Math, Science & reading. *New Straits Times*. Retrieved from <https://www.nst.com.my/news/2016/12/194973/pisa-2015-malaysia-shows-significant-improvement-math-science-reading>
- Adamson, B., Forestier, K., Morris, P., & Han, C. (2017). PISA, policymaking and political pantomime: education policy referencing between England and Hong Kong. *Comparative Education*, 53(2), 192–208. <https://doi.org/10.1080/03050068.2017.1294666>
- Addey, C. (2017). The assessment culture of international organizations: from philosophical doubt to statistical certainty through the appearance and growth of international education assessments. In C. Alarcón & M. Lawn (Eds.), *Pupil Assessment Cultures in Historical perspective*. (pp. 1–23). Frankfurt am Main: Peter Lang.
- Aisyah, A., Salehuddin, K., Aman, I., Yasin, R. M., & Mimiko, N. (2019). Eliciting Elements of Higher Order Thinking Skills in the Higher Secondary Examination Question Structure in Japan and Malaysia. In *Proceedings of the Regional Conference on Science, Technology and Social Sciences (RCSTSS 201)* (pp. 455–464). Singapore: Springer.
- Ansawi, B., & Pang, V. (2017). The Relationship between Professional Learning Community and Lesson,



- 3(2010), 63–70.
- Asada, H., Nixon, S., & Koen, V. (2017). (2017). *Boosting Productivity in Malaysia*. Washington, DC & Paris.
- Baird, J.-A., Johnson, S., Hopfenbeck, T. N., Isaacs, T., Sprague, T., Stobart, G., & Yu, G. (2016). On the supranational spell of PISA in policy. *Educational Research*, 58(2), 121–138. <https://doi.org/10.1080/00131881.2016.1165410>
- Boo, S.-L. (2014, March 25). World Bank: Malaysia's students lagging behind Vietnam's, more alarming than household debt. *Daily Express East Malaysia*, p. Malay Mail. Retrieved from <https://www.malaymail.com/news/malaysia/2014/03/25/world-bank-malaysias-students-lagging-behind-vietnams-more-alarming-than-ho/641273>
- Burns, T., Köster, F., & Fuster, M. (2016). *Education Governance in Action: Lessons from Case Studies*. Washington, DC & Paris. <https://doi.org/http://dx.doi.org/10.1787/9789264262829-en>.
- Bush, T., Abdul Hamid, S., Ng, A., & Kaparou, M. (2018). School leadership theories and the Malaysia Education Blueprint: Findings from a systematic literature review. *International Journal of Educational Management*, 32(7), 1245–1265. <https://doi.org/10.1108/IJEM-06-2017-0158>
- Bush, T., & Ng, A. Y. M. (2019). Distributed leadership and the Malaysia Education Blueprint: From prescription to partial school-based enactment in a highly centralised context. *Journal of Educational Administration*, 57(3), 279–295. <https://doi.org/10.1108/JEA-11-2018-0206>
- Chan, D., & Tan, J. (2008). Privatization and the rise of direct subsidy scheme schools and independent schools in Hong Kong and Singapore. *International Journal of Educational Management*, 22(6), 464–487. <https://doi.org/10.1108/09513540810895417>
- El Masri, Y. H., Baird, J. A., & Graesser, A. (2016). Language effects in international testing: the case of PISA 2006 science items. *Assessment in Education: Principles, Policy and Practice*, 23(4), 427–455. <https://doi.org/10.1080/0969594X.2016.1218323>
- Fernandez-Cano, A. (2016). A Methodological Critique of the PISA Evaluations. *RELIEVE*, 22(1), 1–16. <https://doi.org/http://dx.doi.org/10.7203/relieve.22.1.880>
- Goldstein, H. (2004). International comparisons of student attainment: some issues arising from the PISA study. *Assessment in Education: Principles, Policy & Practice*, 11(3), 319–330.
- Goldstein, H., & Thomas, S. M. (2008). Reflections on the international comparative surveys debate. *Assessment in Education: Principles, Policy & Practice*, 15(3), 215–222. <https://doi.org/10.1080/09695940802417368>
- Gopinathan, S., & Lee, M. H. (2018). Excellence and equity in high-performing education systems: policy lessons from Singapore and Hong Kong / Excelencia y equidad en sistemas educativos de alto rendimiento: lecciones de las políticas educativas en Singapur y Hong Kong. *Infancia y Aprendizaje*, 41(2), 203–247. <https://doi.org/10.1080/02103702.2018.1434043>
- Gorur, R., Sørensen, E., & Maddox, B. (2019). Standardizing the Context and Contextualizing the Standard: Translating PISA into PISA-D. In M. Prutsch (Ed.), *Science, Numbers and Politics*. Cham: Palgrave Macmillan. [https://doi.org/10.1007/978-3-030-11208-0\\_14](https://doi.org/10.1007/978-3-030-11208-0_14)
- Grimmett, P. P. (2018). Canada's Trojan Horse: Labor Mobility Legislation: concealing deregulation and an attack on teacher professionalism and the common good. In N. Hobbel & B. L. Bales (Eds.), *Navigating the Common Good in Teacher Education Policy: Critical and International Perspectives*. (pp. 213–224). Abingdon: Routledge.
- Hairon, S., & Tan, C. (2017). Professional learning communities in Singapore and Shanghai: implications for teacher collaboration. *Compare: A Journal of Comparative and International Education*, 47(1), 91–104. <https://doi.org/10.1080/03057925.2016.1153408>
- Hallinger, P., & Walker, A. (2017). Leading learning in Asia—emerging empirical insights from five societies. *Journal of Educational Administration*, 55(2), 130–146.
- Hanushek, E. A., Link, S., & Woessmann, L. (2011). *Does school autonomy make sense everywhere? Panel estimates from PISA*. *NBER Working Paper* (Vol. 17591). Cambridge, MA. <https://doi.org/10.1017/CBO9781107415324.004>
- Hanushek, E. A., & Woessmann, L. (2017). School resources and student achievement: A review of cross-country economic research. In *Cognitive Abilities and Educational Outcomes* (pp. 149–171). Champane: Springer.
- Harris, A., & Jones, M. (2017). Leading School Turnaround and Improvement in Malaysia and Indonesia, (February 2018). <https://doi.org/10.13140/RG.2.2.11337.24168>

- Hassan, R., Ahmad, J., & Boon, Y. (2018). Professional Learning Community in Malaysia. *International Journal of Engineering & Technology*, 7(3.30), 433. <https://doi.org/10.14419/ijet.v7i3.30.18347>
- Hopfenbeck, T. N. (2016). The power of PISA – limitations and possibilities for educational research. *Assessment in Education: Principles, Policy and Practice*, 23(4), 423–426. <https://doi.org/10.1080/0969594X.2016.1247518>
- Hopfenbeck, T. N., Lenkeit, J., El Masri, Y., Cantrell, K., Ryan, J., & Baird, J.-A. (2018). Lessons Learned from PISA: A Systematic Review of Peer-Reviewed Articles on the Programme for International Student Assessment. *Scandinavian Journal of Educational Research*, 62(3), 333–353. <https://doi.org/10.1080/00313831.2016.1258726>
- Hudin, N. S., Osman, J., Shokory, S. M., & Ab Wahid, H. (2018). Service Learning in Higher Education: Evidence from Malaysia. *International Journal of Engineering & Technology*, 7(3), 474–479.
- Jerrim, J., Parker, P., Choi, A., Chmielewski, A. K., Sälzer, C., & Shure, N. (2018). How Robust Are Cross-Country Comparisons of PISA Scores to the Scaling Model Used? *Educational Measurement: Issues and Practice*, 37(4), 28–39.
- Jimenez, E., Nguyen, V. T., & Patrinos, H. A. (2013). Human capital development and economic growth in Malaysia and Thailand: Stuck in the middle? *Human Capital Formation and Economic Growth in Asia and the Pacific*, (November), 141–162. <https://doi.org/10.4324/9780203778739>
- Klees, S. J. (2008). A quarter century of neoliberal thinking in education: Misleading analyses and failed policies. *Globalisation, Societies and Education*, 6(4), 311–348.
- Klette, K., Bergem, O. K., & Roe, A. (2016). *Teaching and Learning in Lower Secondary Schools in the Era of PISA and TIMSS*. New York: Springer.
- Lee, A. N., & Nie, Y. (2017). Teachers' perceptions of school leaders' empowering behaviours and psychological empowerment: Evidence from a Singapore sample. *Educational Management Administration and Leadership*, 45(2), 260–283. <https://doi.org/10.1177/1741143215578448>
- Lee, S. K., Lee, W. O., & Lee, E. L. (Eds.). (2014). *Educational Policy and Innovation*. Singapore: Springer.
- Marwan, A., Sumintono, B., & Mislán, N. (2012). Marwan, Ardi, Sumintono, Bambang & Mislán, Nora. (2012) Revitalizing rural schools: A challenge for Malaysia. In *Educational Issues, Research and Policies*, UPM Press 171-188 (pp. 171–188). UPM Press.
- MoE. (2013). *Malaysia Education Blueprint 2013 - 2025. Policy Document*. Putrajaya. <https://doi.org/10.1016/j.tate.2010.08.007>
- Ng, A. Y. M. (2017). School leadership preparation in Malaysia: Aims, content and impact. *Educational Management Administration and Leadership*, 45(6), 1002–1019. <https://doi.org/10.1177/1741143216662922>
- Ngok, K. L. (2007). Chinese Education Policy in the Context of Decentralization and Marketization: Evolution and Implications Education Policy Prior to the Economic Reform Education Policy since the Economic Reform: An Overview. *Asia Pacific Education Review*, 8(1), 142–157. Retrieved from <https://files.eric.ed.gov/fulltext/EJ768972.pdf>
- OECD. (2006). *OECD (2006) PISA 2006 Science Competencies for Tomorrow's World. Volume 1: Analysis* (Vol. 1). Washington, DC & Paris: Organisation for Economic Co-operation and Development.
- OECD. (2015). Scaling Procedures and Construct Validation of Context Questionnaire Data. In *PISA 2015 Technical Report* (pp. 289–344). Washington, DC & Paris: Organisation for Economic Co-operation and Development. <https://doi.org/10.1787/9789264167872-17-en>
- OECD. (2016). International Data Products. In *PISA 2015 Results (Volume I): Excellence and Equity in Education*. (pp. 375–382). Washington, DC & Paris: Organisation for Economic Co-operation and Development. <https://doi.org/http://dx.doi.org/10.1787/9789264266490-en>.
- OECD. (2019). *Balancing School Choice and Equity: An International Perspective Based on Pisa*. Washington, DC & Paris: Organisation for Economic Co-operation and Development. <https://doi.org/10.1787/2592c974-en>.
- Sahlberg, P. (2006). Education reform for raising economic competitiveness. *Journal of Educational Change*, 7(4), 259–287. <https://doi.org/10.1007/s10833-005-4884-6>
- Sahlberg, P. (2016). The global educational reform movement and its impact on schooling. In K. Mundy, A. Green, B. Lingard, & A. Verger (Eds.), *The Handbook of Global Education Policy* (pp. 128–144). London: Wiley-Blackwell.
- Schleicher, A. (2009). Securing quality and equity in education: Lessons from PISA. *Prospects*, 39(3), 251–263.

- Schleicher, A. (2014, May 8). Response to Dr Heinz-Dieter Meyer and others. *The Guardian*. Retrieved from <https://www.theguardian.com/education/2014/may/08/pisa-programme-short-term-fixes>
- Schleicher, Andreas. (2007). Can competencies assessed by PISA be considered the fundamental school knowledge 15-year-olds should possess? *Journal of Educational Change*, 8(4), 349–357. <https://doi.org/10.1007/s10833-007-9042-x>
- Sellar, S., & Lingard, B. (2013). Looking East: Shanghai, PISA 2009 and the reconstitution of reference societies in the global education policy field. *Comparative Education*, 49(4), 464–485. <https://doi.org/10.1080/03050068.2013.770943>
- Shahjahan, R. A. (2016). International organizations (IOs), epistemic tools of influence, and the colonial geopolitics of knowledge production in higher education policy. *Journal of Education Policy*, 31(6), 694–710.
- Stobart, G. (2005). Fairness in multicultural assessment systems. *Assessment in Education: Principles, Policy & Practice*, 12(3), 275–287. <https://doi.org/10.1080/09695940500337249>
- Tan, C. (2012). The culture of education policy making: Curriculum reform in Shanghai. *Critical Studies in Education*, 53(2), 153–167. <https://doi.org/10.1080/17508487.2012.672333>
- Tan, C. (2017). Chinese responses to Shanghai's performance in PISA. *Comparative Education*, 53(2), 209–223. <https://doi.org/10.1080/03050068.2017.1299845>
- Tan, J. (2011). Education in Singapore: Sorting Them Out? In T. Chong (Ed.), *Management of Success: Singapore Revisited* (pp. 288–308). Singapore: Institute of Southeast Asian Studies.
- Tasaki, N. (2017). The impact of OECD-PISA results on Japanese educational policy. *European Journal of Education*, 52(2), 145–153. <https://doi.org/10.1111/ejed.12217>
- The World Bank. (2011). Malaysia economic monitor, (Brain drain), 610. <https://doi.org/10.1017/CBO9781107415324.004>
- Thien, L. M. (2016). Malaysian students' performance in mathematics literacy in PISA from gender and socioeconomic status perspectives. *The Asia-Pacific Education Researcher*, 25(4), 657–666.
- Thompson, G. L., & Allen, T. G. (2012). Four Effects of the High-Stakes Testing Movement on African American K-12 Students. *Journal of Negro Education*, 81(3), 218–227.
- Walker, A., & Hallinger, P. (2015). A synthesis of reviews of research on principal leadership in East Asia. *Journal of Educational Administration*, 53(4), 554–570. <https://doi.org/https://doi.org/10.1108/MIP-05-2017-0088>
- Wan, C. Da, Sirat, M., & Razak, D. A. (2018). Education in Malaysia Towards a Developed Nation. *Yusof Ishak Institute*, 20. Retrieved from <https://www.iseas.edu.sg/images/pdf/ISEASEWP2018-4Wan.pdf>
- Williams, J. H., & Engel, L. C. (2013). Appendix to the Special Issue. *Research in Comparative and International Education*, 8(3), 409–414. <https://doi.org/10.2304/rcie.2013.8.3.409>
- Winthrop, R., & Simons, K. A. (2013). Can International Large-Scale Assessments Inform a Global Learning Goal? Insights from the Learning Metrics Task Force. *Research in Comparative and International Education*, 8(3), 279–295.
- You, Y., & Morris, P. (2016). Imagining school autonomy in high-performing education systems: East Asia as a source of policy referencing in England. *Compare: A Journal of Comparative and International Education*, 46(6), 882–905. <https://doi.org/10.1080/03057925.2015.1080115>

## Examining the Most Cost Effectiveness Methods of Hiring Instructor for Lifelong Learning Program at Community College in Malaysia

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### ABSTRACT

*The aims of lifelong learning program at a Community College, Malaysia are to provide training and courses to Malaysian citizens to improve their standard of living, cultivate interest and educate the community to inculcate lifelong learning. This study examines the most cost-effective methods to hire instructors in the implementation of the programs by specializing in the field of sewing and fashion. There are three methods of hiring instructors: (i) by using an existing lecturer who teaches a full-time certification program, (ii) by hiring an external instructor (from the private sector) according to the course requirements and (iii) by hiring instructors to teach a full time course for the lifelong learning program also known as the Lifelong Learning Lecturer (LLL Lecturer). These three methods are studied to determine the most cost effective method of instructor employment. This study measures the effectiveness of the program based on participants' perceptions of cognitive, affective, psychomotor and economic aspects. While estimating program cost estimates using the Ingredient Model by Levin & McEwan (2001). The findings showed that by hiring Lifelong Learning Lecturer costs the highest, but shows the lowest in cost- effectiveness ratio. This proves to be the most cost-effective method in compared to others. Thus, an implication of these findings is that, cost-related proofs should be taken into account by the decision makers or stakeholders to determine future implementation of the program with the most cost-effective method.*

**KEYWORDS:** Cost-effectiveness analysis, lifelong learning

### 1.0 INTRODUCTION

Cost plays an important role in the educational management of an educational institution. This cost-based knowledge provides policy makers and educational institution administrators with an understanding of the strategies of selecting faculty members in the most cost-effective manner when resource allocation is limited. As such, the focus on educational research now has to change not only the effectiveness of inputs, but also the most cost-effective inputs. This study examines instructors' recruitment methods for implementing more cost effective courses based on the cost involved and the effectiveness of the related courses.

The study of cost-effectiveness is often done by researchers in the field of clinical and health. Among them; Bolier, Majo, Smit, Westerhof, Haverman, Walburg and Bohlmeijer (2014), Isaranuwatthai, Brydges, Carnahan, Backstein, and Dubrowski (2014) and Taylor and Green (2013). This is because, there are various treatment interventions and health enhancements to treat a disease that involves high costs in terms of the implementation of health programs, medicine, equipment and more. Therefore, cost-effectiveness studies were conducted to determine which medical intervention is more cost-effective at maximizing patient health. Meanwhile in the context of education, cost- effectiveness studies are lagging behind in education field even though the government has also provided a high in expenditure provision for educational development in the country. This can be seen, when searching

using keywords such as, cost, cost effectiveness and cost analysis through Scopus-indexed journals related to lifelong learning such as Education & Training, Australian Journal of Adult Learning, International Journal of Lifelong Education, International Journal of Training and The Journal of Vocational Education & Training, show less than 10 articles with cost keywords in the article title. This is corroborated by statements by Simon (2011), Levin and Belfield (2014), Cheslock, Ortagus, Umbricht and Wymore (2016) and Hollands, Kieffer, Shand, Pan, Cheng and Levin (2016), who state that education is lagging behind in the production of cost-effectiveness studies rather than health-related research, that enable researchers to refer, compare and explore past research on techniques, methodologies and how cost-effectiveness analysis studies and improvements can be made from time to time.

Community College is one of the educational institutions under the Department of Community Education, Ministry of Higher Education Malaysia, which emphasizes technical and vocational education (TVET) and lifelong learning by providing two forms of degree and diploma (full-time program) and short term courses. A lifelong learning program at a community college with the purpose of providing training and courses to Malaysian citizens to improve their standard of living, cultivate interest and educate the community to cultivate lifelong learning.

There are 3 methods of recruitment for the short-term courses for fashion and sewing courses in the community college. The first method is to use the existing lecturer who teaches a full-time certification program in fashion course, secondly by appointing an external instructor according to the course requirements (depends on demand) and the third one by hiring a full-time lecturer specifically for the lifelong learning program (known as the LLL Lecturer). These three methods are studied to determine the most cost effective method of instructor employment.

## **2.0 METHODOLOGY**

This study involved detailed college-level cost-data collection due to the lack of a record of cost transactions that specialize in lifelong learning programs. Therefore, the researchers used case study design for this study. According to Tellis (1997), case study is a holistic study design using a variety of data sources, case study has been designed as a multidisciplinary or multi-perspectival analysis taking into account not only the details of the participants' perspectives but also the group of individuals related to participants. There are five colleges involves in this study.

### **2.1 Cost Estimation**

This study uses data collected for sewing and fashion courses conducted from 2014 to 2016. This study uses Ingredient Models developed by Levin and colleagues (Levin and McEwan, 2001). This model places monetary value on each of the "ingredients". Researchers use the Cost Measurement Form to obtain all cost data from the head of lifelong learning department and program coordinator. This method has been suggested by Ashdown & Hummel-Rossi (2002) who proposes to collect cost information from program administrators and the executives to ensure that all cost information can be recorded and evaluated in a financial way. This method enables researchers to obtain limited cost information.

This model involves three main steps for determining accurate and consistent cost measurement; (i) identify and determine the materials needed to obtain the program's outcome, (ii) determine the cost and calculate total program costs and (iii) calculate cost per unit (Levin & Belfield, 2015). Levin and McEwan (2001) emphasize that each "ingredients" (which refers to the category of cost in this model) is clearly identified and listed with its use regardless of whether the costs are included in the program planning expenditure or are derived from external donations. This is to ensure the accuracy of cost analysis. Table 1 shows the ingredients that Levin has suggested in the Ingredients Model and used in this study.

Table 1. Program Cost Estimation

No	Cost Ingredient	Measured Cost	Source of Information
1	Personnel - Lecturer and other staff members who contributed to the course. - The duration used during the course	Salary	Government circular and findings from the Financial Administrator or Community College Administrative Officer.
2	Facility - The use of physical space such as building premises, lecture halls, workshops and more - Duration of use of physical space	Rental rates for the use of premises and physical space when rented to outsiders.	Financial Administrator or Community College Administrative Officer.
3	Material and Equipment - Use of raw materials and other materials during course  - Use of specific equipment during the course. - Number of equipment used - Depreciation for each appliance	Estimated expenditure for the use of materials.  Prices of equipment purchased with regard to depreciation of equipment life	As stated by the course coordinator  Asset document / Asset officer of community college.
4	Participant Input - Cost incurred by participants	Cost as stated by the participants	As stated by participants.

The cost per unit is measured by dividing cost over number of participants. The final step in this study is to compare the cost-effectiveness ratio. First the ratio of cost effectiveness is obtained by dividing cost per unit to the effectiveness of the program using Levin's recommended formula:

$$\text{Cost effectiveness ratio} = \text{cost per unit} / \text{program effectiveness.}$$

## 2.2 Effectiveness measurement

Traditionally, the effectiveness of an education program was using student's achievement. But in this study, program effectiveness was measured based on the effectiveness of the program from the perspective of the participants in term of cognitive, psychomotor, affective and economic aspects. This method is used since short-term courses in community colleges do not have final results such as test scores, quizzes or final assessments. In addition, such programs have a varied course duration of a minimum of 5 hours. Thus a set of questionnaire was developed in order to measure program effectiveness.

The effectiveness of the program was determined based on mean scores. The mean score interpretations were based on previous research by researcher such as Ahmad, Jailani, & Aina Aishikin (2011) and Hassan, Asad, Soomro, & Sherwani (2017) (refer table 2).

Table 2. Score Mean Interpretation

Mean Score	Interpretation
1.00 – 2.33	Low
2.34 – 3.67	Moderate
3.68 – 5.00	High

### 3.0 RESULTS

In this study, cost analysis provides cost value in the form of Ringgit Malaysia to all sources that contribute to the implementation of the program even if the resource is provided free of charge. This includes taking into account the costs incurred by the secretariat, instructor and facilitators such as paying salaries to the staff on duty to carry out off-duty courses and paid external instructor fees according to their academic qualifications and cost input from participants. The cost estimation in this analysis is also based on a 3% discount rate.

The three methods of hiring instructor for lifelong learning program have different impacts on costs and numbers of participation. This study found that the third method, hiring a LLL Lecturer involves the highest cost, RM242,002.16. However, this method shows the most cost-effective method compared to other methods with the lowest cost-effectiveness ratio as summarised in Table 3 below. This is because, with a LLL Lecturer, the planning, implementation and delivery of courses can be done continuously and not only depending upon request by the community as it is the case with other methods. The participation of participants in courses under the lifelong learning program will also increase. The first method of hiring instructor which is by using existing lecturer shows the second highest cost with total cost RM201,172.82. But showing the least cost effective way of hiring instructor with the cost effectiveness ratio RM39.39. In cost effectiveness analysis, the smallest cost- effectiveness ratio represents the most cost-effective alternative.

Table 3. Cost Effectiveness Result for Method of Hiring Instructor

Method of Hiring Instructor	Total Cost (RM)	Cost per Participation	Effectiveness	Cost Effectiveness Ratio
Existing Lecturer	201,172.82	146.53	3.72	39.39
External Instructor	104,200.91	96.10	3.64	26.40
LLL Lecturer	242,002.16	53.24	4.28	12.44

Bemmel (2008) in his study proves that increasing student enrolment in addition to the effectiveness of equivalent programs makes degree programs at community colleges more cost effective than universities. Thus in this study shows that by hiring PSH lecturer gives the advantage to the community college in increasing participation in lifelong learning programs and the effectiveness of program can also make the program more cost effective.

### 4.0 CONCLUSION

In conclusion, the findings of this study are to determine the most cost effective method of hiring instructor for lifelong learning programs in community colleges focusing in the field of sewing and fashion. The findings of the study provide a wealth of information to stakeholders, especially the Department of Polytechnic and Community College, Ministry of Education, Malaysia about the costs and value involved and the relationship between cost and effectiveness of the program. This study used the Ingredient Model developed by Levin & McEwan (2001). This model has been used by many other researchers in the study of cost effectiveness in education field.

The biggest challenge in conducting the study was to collect cost from the community colleges involved. This is due to the lack of official financial records that specialize in implementing lifelong learning programs. Researchers get relevant data from program coordinators at each colleges. The data is then recorded accordingly using the cost data collection form developed by the researchers based on

previous studies. Another challenge facing by the researchers is to determine the effectiveness of the program. Past studies have shown the use of student outcomes such as student achievement, quiz scores, tests and others as indicators of the effectiveness of the program. However, this approach cannot be used in this study given to the nature of a lifelong learning program in a community college that lacks any form of assessment. As such, an instrument has been developed by researchers to measure the effectiveness of programs from the aspect of cognitive, affective, psychomotor and economic.

## ACKNOWLEDGEMENT

The researchers would like to acknowledge the Ministry of Education (MOE) and Universiti Putra Malaysia for the financial funding on this research through Geran Putra (GP/2018/9636700) for Research University Grant (RUG).

## REFERENCES

- Ahmad, E., Jailani, M. Y., & Aina Aishikin, M. A. (2011). Developing soft skill in Advanced Technology Training Centre (ADTEC): an analysis of comparison. *Elixir Social Studies*, 39, 4895–4904.
- Ashdown, J., & Hummel-Rossi, B. (2002). What is cost-effectiveness analysis? *Journal of Reading Recovery*, 44–46.
- Bemmel, E. P. (2008). *A Cost-Effectiveness Analysis of Two Community College Baccalaureate Programs in Florida: An Exploratory Study*. Florida Atlantic University.
- Bolier, L., Majo, C., Smit, F., Westerhof, G. J., Haverman, M., Walburg, J. a., ... Bohlmeijer, E. (2014). Cost-effectiveness of online positive psychology: Randomized controlled trial. *The Journal of Positive Psychology*, 9(5), 460–471.
  - Cheslock, J. J., Ortagus, J. C., Umbricht, M. R., & Wymore, J. (2016). The Cost of Producing Higher Education: An Exploration of Theory, Evidence, and Institutional Policy. In M. B. Paulsen (Ed.), *Higher Education: Handbook of Theory and Research* (Vol. 31). Dordrecht: Springer.
- Hassan, R. Bin, Asad, M. M., Soomro, Q. M., & Sherwani, F. (2017). SOCIAL SCIENCES & HUMANITIES Severity of the Casing and Cementing Operation with Associated Potential Hazards in the Drilling Process in the On and Offshore Oil and Gas Industry: A Cross-Sectional Investigation into Safety Management, 25, 129–138.
- Hollands, F. M., Kieffer, M. J., Shand, R., Pan, Y., Cheng, H., & Levin, H. M. (2016). Cost- Effectiveness Analysis of Early Reading Programs: A Demonstration with Recommendations for Future Research. *Journal of Research on Educational Effectiveness*, 9(1), 30–53.
- Isaranuwatthai, W., Brydges, R., Carnahan, H., Backstein, D., & Dubrowski, A. (2014a). Comparing the cost-effectiveness of simulation modalities: a case study of peripheral intravenous catheterization training. *Advances in Health Sciences Education: Theory and Practice*, 19(2), 219–232.
- Levin, Henry M., & Belfield, C. (2014). Guiding the Development and Use of Cost- Effectiveness Analysis in Education. *Journal of Research on Educational Effectiveness*, 8(3), 400–418.
- Levin, H. M., & McEwan, P. J. (2001). *Cost-effectiveness analysis: methods and applications*. Thousand Oaks, Calif: Sage Publ.
- Taylor, C. A., & Green, K. E. (2013). OSCE Feedback: A Randomized Trial of Effectiveness, Cost- Effectiveness and Student Satisfaction. *Creative Education*, 4(06), 9.
- Simon, J. (2011). *A Cost-Effectiveness Analysis of Early Literacy Interventions*. Columbia University.
- Tellis, W. M. (1997). The Qualitative Report Application of a Case Study Methodology Application of a Case Study Methodology. *The Qualitative Report*, 3(33), 1–19.



## INFLUENCE OF PRINCIPALS' READINESS FOR CHANGE ON SCHOOL EFFECTIVENESS

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### ABSTRACT

*The purpose of this study is to investigate the influence of principals' readiness for change on school effectiveness in secondary schools. The data were collected from 246 principals in low performance school in East Malaysia by cross sectional study method. Readiness for Organizational Changes instrument was used to measure the principals' level of readiness for change while School Effectiveness Questionnaire was used to measure the principals' perception towards school effectiveness. The education reforms and recent changes in Malaysia education need all the school leaders to move towards high performing school status. In order to ensure that a school achieves this goal, School Improvement Partners Plus (SIPartners+) was placed in every districts in Malaysia to help the principals in school management and improving their leadership skills. Hence, this processes require high commitment and readiness for change from the principal to adapt the transformation which lead to the school effectiveness. Four main constructs of readiness for changes -appropriateness of changes, management support, change efficacy and personal valence were used as predictors to school effectiveness. The analysis results showed that there is a significant influence between principals' readiness for change with the school effectiveness. Regression analysis result showed that appropriateness of change and management support were main predictors of school effectiveness. This research findings revealed some meaningful implications to the body of knowledge generally to the Ministry of Education or specifically to the principals and school development.*

**Keywords:** school effectiveness, readiness for changes, principals, School Improvement Partners Plus

### 1.0 INTRODUCTION

Minister of Education Malaysia, Dr. Maszlee Malik in his speech entitled Education for All, Responsibility for All, has set three main directions of the Ministry of Education Malaysia. The first direction is to set the value-based education, improving the quality of the whole system is the second direction while the third direction is related to autonomy and accountability. In the second direction, the ministry emphasized the quality as one of the common goals of all stakeholders in the ministry. High quality plays a key role in catalyzing excellence, relevance and effectiveness in the education system in Malaysia. Therefore, all parties are required to move in equally in driving the quality of Malaysian education towards high performance.

The aspiration of the Malaysian government is to ensure that every school in Malaysia attains the highest quality (Iskandar, Foo, & Ramli, 2018). Therefore, the Malaysian Education Quality Standard (SKPM) was introduced as a school performance measurement tool. SKPM is one of the government's mechanisms for rating schools based on their annual performance and also an element of measuring school effectiveness. In 2017, the Ministry of Education Malaysia replaced SKPM 2003 and SKPM 2010 with the latest Malaysian Quality Education System Wave 2 (SKPMg2). The change is in line with the development of the Malaysian Education Blueprint (PPPM) 2013-2025 which was launched by the Malaysian

government in 2012. SKPMg2 is a standard document that measures 5 major standards, namely as standard one (leadership), standard two (organizational management), standard three (curriculum management, co-curricular management and student affairs management), standard four (learning and facilitation) and standard five (civilization). As such, having the latest rating in the context of education has encouraged everyone in the school especially the school administrator to be prepared for any changes.

Studies of school effectiveness have been widely conducted in the United States, the Netherlands, Australia and the United Kingdom (Lezotte & Synder, 2011; Sammons, Hillman, & Mortimore, 1995; Scheerens, 2013). Although the initial focus of the school effectiveness study was on student achievement, researchers have opened up a wider area of school effectiveness by taking into account other aspects such as school vision, standards and expectations, leadership, collaboration and communication, alignment with standards, monitoring of teaching and learning, professional development, learning environment, parental involvement (Shannon & Blysmas, 2007), financial resources, classroom size, teacher academic qualifications, classroom and teacher teaching methods (Abdul Ghani, 2008) and school achievement (Al-Harthi & Al-Mahdy, 2017; Baharak, 2015; Shih & Tsai, 2016). In line with the rapid development of education, the study of school effectiveness is of particular interest in Asia and the third world (Harris & Bennet, 2001). Therefore, in the context of Malaysian education, the study of school effectiveness is a comprehensive approach to measuring the quality of Malaysian education in line with the world education development (Arivayagan, 2015).

The findings of a study conducted by Shannon and Blysmas (2007) found that vision, standards and expectations, leadership, collaboration and communication, teaching with standards, monitoring of teaching and learning, professional development, learning environment and family and community involvement are the benchmarks for effectiveness school. Lezotte and Synder (2011) list seven main characteristics of school effectiveness: strong instructional leadership, focused mission, a conducive and safe school environment, high expectations of success, regularly monitoring student progress, having the opportunity to learn something new and good relationship with parents. However, in this study, the researcher only focuses on school effectiveness dimensions listed by Shannon and Blysmas (2007).

## **1.1 PREVIOUS STUDIES ON SCHOOL EFFECTIVENESS**

In the context of education in Malaysia, the concept of school effectiveness is based on the aspirations embodied in the Philosophy of National Education and in Vision 2020 (Sharifah, 2010). The aspiration of the Malaysian government through the Ministry of Education Malaysia to create a visionary school in Malaysia, zero defects and world-class education (Amin, 2018). Malaysia has achieved many successes since independence through the expansion of education and education standards, especially in terms of literacy and student participation (Ministry of Education, 2012). Each school regardless of location, size and type will provide students with a good and holistic education (Ministry of Education Malaysia, 2013). However, the achievement gap between urban and rural schools, boys and girls, and achievement gaps based on socioeconomic backgrounds are still significant and cause a very large equity gap in education (Ministry of Education Malaysia, 2017b). In order to bridge the gap, high-quality education systems need to provide the best education for every child regardless of geography, gender or socioeconomic (Kementerian Pendidikan Malaysia, 2017a; Shannon & Blysmas, 2007). Therefore, schools play an important role in ensuring that every shift planned by the Ministry of Education is translated into student incarceration (Institut Aminuddin Baki, 2017).

Studies of school effectiveness have been widely studied by external researchers and organizations worldwide (Alm et al., 2018; De Witte & Schiltz, 2018; Solomou & Pashiardis, 2016). Based on the literature review related to school effectiveness, most researchers apply social system theory and open social system theory as the main theories that support school effectiveness (Abbas Sani, 2017). Advances in the field of school effectiveness research have provided many opportunities for researchers to develop theories and models related to school effectiveness. Studies on effective schools or school effectiveness are scarce in Malaysia (Sharifah, 2010) and most researchers only study the characteristics of effective schools as a whole and focus on effective school leadership alone (Abdul Ghani, Siraj, Mohd Razi, & Elham, 2011).

The findings of the study by Abdul Ghani et al., (2011) found that the best schools in Malaysia and Brunei have consistently adopted effective school practices as the educational world progresses. Their study also found that school leaders have a very significant and positive relationship with school development towards effective schooling. School principals play an important role in improving schools and improving their performance towards high performing schools (Bibi & Kassim, 2011; Cheng & Szeto, 2016; Sciarappa

& Y. Mason, 2014). In addition, the principals' leadership factors are also key contributing factors to the effectiveness of the school based on the findings they have obtained. The findings of this study are in line with findings from Arivayagan (2015), Abbas Sani, (2017) and Baharak, (2015). Principals who are appointed due to seniority, regardless of leadership ability, skills, knowledge and experience do not guarantee that they will lead the school well. In other words, in order to be effective in leading a school, a leader must be selected on the basis of high leadership factors and able to drive the school more effectively (Chua & Zuraidah, 2014).

In addition, Iyer (2008) conducted a study to identify the current situation of school effectiveness characteristics in the Malaysian context from the point of view of principals, department heads and school teachers. His research was conducted on 120 teachers and principals in secondary schools in Kuala Lumpur and found that there are five effective school characteristics known as effective leadership, learning and teaching, collaboration between principals and teachers, understanding between principals and teachers and effective parent-teacher involvement. The findings of the study also show that most schools in Kuala Lumpur are at the highest level of school success and also continue to practice school effectiveness.

## **2.0 PROBLEM STATEMENT**

School effectiveness studies are one of the many educational reform initiatives adopted by most countries in the world to identify factors that influence school effectiveness (Authors, 2009; Lezotte & Synder, 2011; Shannon & Blyma, 2007). However, in the context of education in Malaysia, studies on school effectiveness are still lacking (Abdul Ghani et al., 2011; Abdul Karim, 1989; Baharak, 2015; Sani, Zabidi, Razak, & Banu, 2013). The concept of school effectiveness is broad and open, but most researchers focus solely on student achievement and school achievement as a measure of school effectiveness while there are other factors closely related to school effectiveness (Samy & Cook, 2009). In line with current Malaysian educational development policies, the concept of school effectiveness should be viewed holistically, especially in terms of the role of SIPartners+ as change agents and principals as implementers of change in schools.

Sabah is one of the pioneer states that received the coaching and mentoring of the SIPartners+ program in Malaysia. The main purpose of this implementation in 2013 was to improve primary and secondary schools (Kunalan, 2013) which are graded in band five, six and seven (Ministry of Education Malaysia, 2013). In fact, after three years of implementing mentoring and mentoring of SIPartners + in Sabah, it was found that 94.7 percent of secondary schools in Sabah were still in the medium and low performing groups of four, five and six (Academic Management Sector, Sabah State Education, 2016). A similar situation occurred in Sarawak where 93.3 percent of schools were in the low and medium band while the Federal Territory of Labuan was 80 percent. This clearly indicates that, although SIPartners + mentoring and mentoring have been implemented since 2013 in Sabah and 2014 in Sarawak and the Federal Territory of Labuan, the level of secondary school performance in these three states remains modest.

A major obstacle to educational change is cultural change, which is a change of mindset and a willingness to change among the educators (Amin, 2018). In education context, principals are agents of change that lead to change in the school (Vandeyar, 2017). However, with the guidance and mentoring practices of SIPartners+, the role of principal has changed as the recipient of change and SIPartners+ has become the agent of change. A leader cannot make changes without the support of others (Loi, Lai, & Lam, 2012). Therefore, the willingness of principals to change in receiving coaching and mentoring is a key factor in the success of a planned change. Some principals were found to be unwilling to accept changes in school management considering that the presence of SIPartners+ in schools was an external factor in school administration (Kunalan, 2016; Tan, 2015). In addition, the lack of SIPartners+ experience in school management was also a factor in the unwillingness to accept changes in coaching and mentoring in schools (Ministry of Education, 2014).

## **3.0 RESEARCH OBJECTIVES**

The objectives of this study are:

1. To determine the levels of readiness for change among principals in East Malaysia
2. To determine the level of school effectiveness based on East Malaysia principals' perception.
3. To determine the influence of principals' readiness for change on school effectiveness.

#### 4.0 CONCEPTUAL FRAMEWORK

This study consist of two main variables which are readiness for changes as independent variable and school effectiveness the dependent variable. Readines for changes comprised of four main constructs named as appropriateness of changes, manengement support, change efficacy and personal valence while school effectiveness with nine dimensions to be measured namely vision, standards and expectations, leadership, collaboration and communication, alignment with standards, monitoring of teaching and learning, professional development, learning environment and involvement of families and communities. The school effectiveness dimension is from the High Performing School Model proposed by Shannon and Blysma (2007) while readiness for changes was created by Holt, Armenakis, Harris, and Feild (2007). The conceptual framework is illustrated as below:

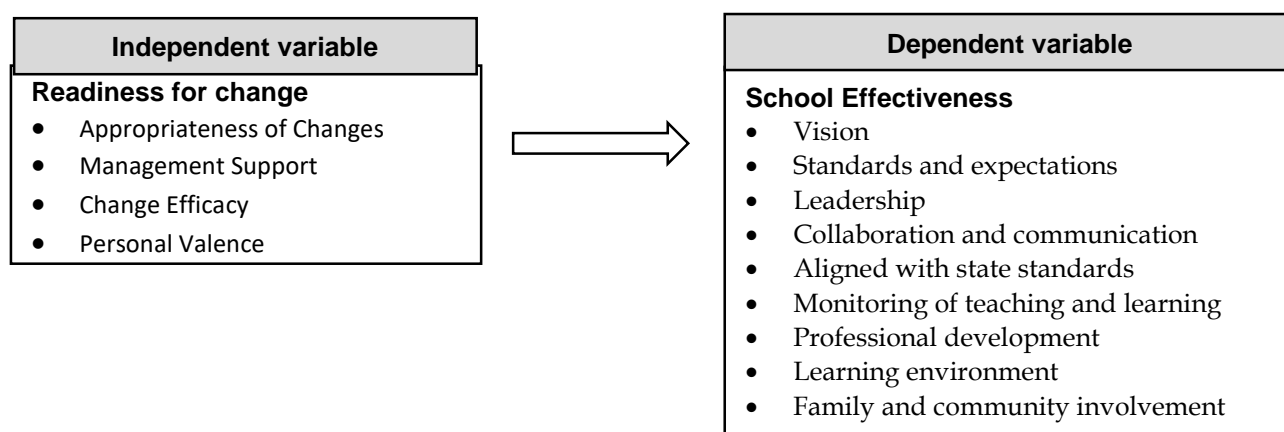


Figure 1 : Conceptual framework

#### 5.0 METHODOLOGY

This study is a cross sectional survey study. The populations were the principals in East Malaysia which total up to 425 principals. The sample of the study comprised 120 principals from Sabah state, 123 principals from Sarawak state and 3 principals from Federal Territory of Labuan which summed up to 246 principals selected using proportional stratified random sampling technique. The Readiness for Organizational Change questionnaire developed by Holt et al., in 2007 was used. This instrument was designed to assess readiness for change at the individual level because they believe that change activities are carried out by individuals within an organization. There were 25 items in the original questionnaire and modified by the researcher to measure the level of readiness to change of principals in receiving coaching and mentoring of SIPartners+. Each item has five response options that indicate a 5-point Likert scale of agreement. The School Effectiveness Questionnaire (SEQ) instrument was developed by Shannon and Bylsma in 2007 based on nine key features of high performing schools. This instrument contains 60 items from nine key dimensions.

##### 5.1 DATA ANALYSIS

Mean and standard deviation were used to determine the levels of readiness for change among principals in East Malaysia and school effectiveness. Besides, multiple regression analysis was used in this study to estimate and predict the relationship pattern between a dependent variable and independent variables as predictors (Creswell, 2018). In this study, readiness for change dimensions named as appropriateness of change, management support, change efficacy and personal valence were used as a predictor of school effectiveness.

#### 6.0 RESULTS

The data was analysed by using SPSS Version 25 to answer the research questions for this research.

## 6.1 LEVELS OF READINESS FOR CHANGE AMONG PRINCIPALS IN EAST MALAYSIA

The findings showed that the level of overall readiness for change among principals in East Malaysia is at a high level based on mean analysis ( $M = 4.12$ ,  $SD = 0.47$ ). As shown in Table 1, all dimensions of readiness for change were at a high level with personal valence at the highest ( $M = 4.33$ ,  $SD = 0.90$ ), management support ( $M = 4.17$ ,  $SD = 0.54$ ), appropriateness of change ( $M = 4.06$ ,  $SD = 0.56$ ) and change efficacy ( $M = 4.04$ ,  $SD = 0.55$ ).

Table 1: Level of Readiness for Change

Dimension	M	SD	Level
Personal Valence	4.33	.90	High
Management Support	4.17	.54	High
Appropriateness of Change	4.06	.56	High
Change Efficacy	4.04	.55	High
<b>Total</b>	<b>4.12</b>	<b>.47</b>	<b>High</b>

## 6.2 LEVEL OF SCHOOL EFFECTIVENESS

School effectiveness is the dependent variable in this study with nine dimensions. Based on Table 2, school effectiveness level in East Malaysia secondary schools based on principal perception was in high level ( $M = 4.29$ ,  $SD = 0.34$ ). The mean analysis of dimensions revealed that all dimensions were at a high level with leadership is the highest ( $M = 4.59$ ,  $SD = 0.41$ ), vision ( $M = 4.43$ ,  $SD = 0.41$ ), learning environment ( $M = 4.33$ ,  $SD = 0.41$ ), aligned with state standards ( $M = 4.31$ ,  $SD = 0.42$ ), standards and expectations ( $M = 4.31$ ,  $SD = 0.44$ ), collaboration and communication ( $M = 4.24$ ,  $SD = 0.43$ ), family and community involvement ( $M = 4.20$ ,  $SD = 0.45$ ), monitoring of teaching and learning ( $M = 4.17$ ,  $SD = 0.40$ ) and professional development ( $M = 4.13$ ,  $SD = 0.42$ ).

Table 2: Level of School Effectiveness

Dimension	M	SD	Level
Leadership	4.59	.41	High
Vision	4.43	.41	High
Learning Environment	4.33	.41	High
Aligned with State Standards	4.31	.42	High
Standards and Expectations	4.25	.44	High
Collaboration and Communication	4.24	.43	High
Family and Community Involvement	4.20	.45	High
Monitoring of Teaching and Learning	4.17	.40	High
Professional Development	4.13	.42	High
<b>Total</b>	<b>4.29</b>	<b>.34</b>	<b>High</b>

## 6.3 INFLUENCES OF READINESS FOR CHANGE PRINCIPALS ON SCHOOL EFFECTIVENESS

To achieve the third objective of this research, a multiple linear regression was calculated to predict the effect of readiness for changes among principals on school effectiveness in East Malaysia. Principals' readiness for change shows a moderate and significant relationship with the school effectiveness ( $R = 0.463$ ,  $R^2 = 0.214$ ;  $p < 0.05$ ). Therefore, readiness for change explain 21.4% of variance school effectiveness. According to the standardized regression coefficient ( $\beta$ ), relative importance sequence of predictor variables for school effectiveness is as follows: management support, appropriateness of change, personal valence and change efficacy.

Table 3: Multiple linear regression analysis of readiness for change on school effectiveness

Variable	B	SD	B	T
Constant	2.990	.179	-	16.710
Appropriateness of change	0.137	.060	.222	2.281
Management support	0.193	.059	.304	3.281
Change efficacy	-0.028	.060	-.044	-.466
Personal valence	0.015	.022	.040	.693

$$R = 0.463$$

$$R^2 = 0.214$$

$$F(4) = 5.802$$
$$p < 0.05$$

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## 7.0 DISCUSSION

This study was conducted to examine the influence of principals' readiness for change on school effectiveness. The findings of this study focusing on secondary school principals who are working in low performance schools in East Malaysia. The result indicated that the principals' readiness for change was on high level. Based on the analysis, personal valence showed the highest mean score among four dimensions. This situation demonstrates that principals are concerned about the changes in education which should benefit them, so that they can help move the school forward. Besides, as school administrators, principals need specific assurance to the change that will benefit them and the school in general. In addition, management support, appropriateness of change and change efficacy also play an important role in the readiness to change which is at a high level based on the principals perceived. This situation is driven by the change support system introduced by the Ministry of Education Malaysia (Amin, 2018). In Malaysia education context, any changes implemented should be parallel with the mission and vision of the Ministry of Education in supporting the existing education system. Schools are exposed to change from inside and outside of the educational environment (Campbell, Corbally, & Nystrand, 1997; Daly & Milton, 2017). In facing the challenging changes, school leaders need to be prepared for any possibility that will change the school's situation for the better. Change is a process that all school administrators have to face which sometimes mean that they have to start all over again. In order for a change to succeed, leaders must develop a willingness to change among their subordinates (Azni et al., 2018; Woolner, Clark, Laing, Thomas, & Tiplady, 2014).

Every change in the organization has an impact on employees' confidence and behavior in accepting something unknown to new situations (Abdel-Ghany, 2014). In the context of education, school principals are important individuals in the process of change. Therefore, the principals' willingness to change in accepting new things is important to ensure that the changes implemented to the school communities are acceptable (İnandi & Giliç, 2016). But if they are unprepared and have a negative view on the changes that will take place, they will react against such changes as doubt, fear and trying to undermine the efforts of change (Soumyaja, Kamalanabhan, & Bhattacharyya, 2011). Nor Azni (2015) in her research pointed out the reasons why principals fear of change which are due to lack of information, people who propose change in information, teachers and staff reject change, an autonomous power group to push change, comfortable with the situation and failed to follow the pace of the proposed change. In the context of current changes, the guidance and mentoring of SIPartners + is a new approach introduced by the Ministry of Education Malaysia to school leaders in an effort to make schools more competitive and effective while improving school performance towards high performing schools (Balang & Mahamod, 2017). As such, the principals' willingness to change is a key factor in the development of an effective and efficient school (Kershner & McQuillan, 2016).

The findings showed that the overall level of school effectiveness based on the perception of principals in East Malaysia is high. The findings of this study are in line with findings from Arivayagan (2015) and Shannon and Blysm (2007). The effectiveness of the school from the perception of the secondary school teachers in the 10 selected secondary schools in Klang is high (Arivayagan, 2015). The findings show that the dimensions of school effectiveness include vision, standards and expectations, leadership, collaboration and communication, alignment with standards, monitoring of teaching and learning are high while professional development, learning environment and family and community involvement are at a moderate level. However, the findings of this research showed the level of school effectiveness dimensions are on the high level. A detailed analysis of school effectiveness dimensions shows that leadership is at the highest level based on mean scores. School leadership is effectively characterized by the characteristics of successful leaders and their teachers' perceptions. Bush (2013) defines leadership in general as the influence of individuals in achieving the goals shared by leaders and followers through the use of institutional, political, psychological and other resources. These goals represent the values and motivations desired and the needs, aspirations and hopes of both leaders and followers. Leadership depends on the relationships and values shared between leaders and followers (Deeboonmee & Ariratana, 2014). Recent studies have shown that principal leadership plays a significant role in school

development and enhances student achievement (Nor Azni, 2015). Effective principals with good leadership skills are able to continuously improve school effectiveness levels (Riley, Montecinos, & Ahumada, 2017). Other school leaders and district education officials should share good leadership experiences and procedures in administering the school to ensure school excellence consistently. There is a positive relationship between school leadership and student achievement (Ali Al-Harthi & Hendawy Al-Mahdy, 2017; Nir & Hameiri, 2014; Wang, Gurr, & Drysdale, 2016).

The study found that the dimensions of management support, appropriateness of change, personal valence and change efficacy are predictors of school effectiveness. The two most important factors are management support and appropriateness of change. As a school administrator, management support factors play an important role for the school principal. The support from top management and school management itself in making any changes gives the principal a strong sense of direction for the school to be more effective and successful. Therefore, in the process of change within the school, management support plays a very important role in effective school development. The support of the superiors as well as the main administrators has a great effect on the subordinates especially in implementing change. The changes to be made must be consistent with the current situation and require a sound work plan to be implemented. In addition, the adaptability of the changes made also has a significant impact on the subordinates. In the context of today's Malaysian education, any changes that need to be made must be in line with the Malaysia Education Blueprint which is aimed at improving educational performance.

In addition, the appropriateness of change also plays an important role in school effectiveness. The changes to be made need to have clear guidelines for the implementation of the change to be accepted by the principal or school. Schools are exposed to change from within and schools also has a function in a changing the environment (Campbell et al., 1997). In the face of increasingly challenging changes, school leaders need to be prepared for any possibility that will change the school's situation for the better. Change is a process that all school administrators have to face that sometimes they have to start over and over and over and over again. In order for a change to succeed, leaders must develop a willingness to change among their subordinates (Nor Azni, 2015; Woolner et al., 2014).

In conclusion, in ensuring that every school achieve the vision set by the education ministry, all parties need to work together to ensure that the planned changes are acceptable to everyone. Besides, a positive educational environment will enhance teachers' motivation to work and develop the school towards the high performance school.

## ACKNOWLEDGEMENT

The researchers also like to acknowledge the Ministry of Education (MOE) and Universiti Putra Malaysia for the financial funding on this paper through Geran Putra (GP/2018/9636700) for Research University Grant (RUG).

## REFERENCES

- Abbas Sani, D. (2017). *Relationship between Entrepreneurial Leadership Practice, School Culture and School Effectiveness with Teacher Empowerment in Secondary Schools in Zamfara State , Nigeria*. Unpublished PhD Thesis, Universiti Putra Malaysia.
- Abdel-Ghany, M. M. M. (2014). Readiness for change, change beliefs and resistance to change of extension personnel in the New Valley Governorate about mobile extension. *Annals of Agricultural Sciences*, 59(2), 297–303.
- Abdul Ghani, M. F. (2008). *Pembentukan Model Keberkesanan dan Penambahbaikan Sekolah*. Unpublished PhD Thesis, Universiti of Malaya.
- Abdul Ghani, M. F, Siraj, S., Mohd Razi, N., & Elham, F. (2011). School effectiveness and improvement practices in excellent schools in Malaysia and Brunei. *Procedia - Social and Behavioral Sciences*, 15, 1705–1712.
- Abdul Karim, M. N. (1989). *Characteristics of effective rural secondary schools in Malaysia*. Unpublished PhD Thesis, University of Wisconsin, Madison, United States.
- Al-Harthi, A. S. A., & Al-Mahdy, Y. F. H. (2017). Distributed leadership and school effectiveness in Egypt and Oman: an exploratory study. *International Journal of Educational Management*, 31(6), 801–813.

- Ali Al-Harthi, A. S., & Hendawy Al-Mahdy, Y. F. (2017). Distributed leadership and school effectiveness in Egypt and Oman : an exploratory study. *International Journal of Educational Management*, 31(6), 801–813.
- Alm, S., Låftman, S. B., Sandahl, J., Modin, B., De Witte, K., Schiltz, F., ... Modin, B. (2018). Effective schools, school segregation, and the link with school achievement. *European Journal of Operational Research*, 70(3), 464–484.
- Amin, S. (2018). *Melangkah ke hadapan: Fokus dan Gerak Kerja Professional KPPM 2018* (Pertama, Vol. 1). Putrajaya: Firdaus Press Sdn. Bhd.
- Arivayagan, K. (2015). *Teacher's perceptions related to principals' creative leadership practices towards school effectiveness*. Unpublished Master's Thesis, Universiti Putra Malaysia.
- Authors, F. (2009). *Perceived school effectiveness : case study of a Liverpool college*.
- Azni, N., Aziz, A., Asimiran, S., Fooi, F. S., Hassan, A., (2018). Principal Instructional Leadership and Teacher Readiness for Change to Implement School Based Assessment in Secondary Schools. *International Journal of Academic Research in Business and Social Sciences*, 8(12), 221–228.
- Baharak, T. (2015). *Transformational Leadership, Organizational Citizenship Behaviour and School Effectiveness in Primary Schools, Selangor, Malaysia*. Unpublished PhD Thesis, Universiti Putra Malaysia.
- Balang, N. J., & Mahamod, Z. (2017). Persepsi dan Proses Bimbingan SISC+ terhadap guru-guru Bahasa Melayu. *Jurnal Penyelidikan Pendidikan Guru*, 11.
- Bibi, J., & Kassim, J. (2011). Instructional leadership and attitude towards organizational change among secondary schools principal in Pahang , Malaysia. *Procedia - Social and Behavioral Sciences*, 15, 3304–3309.
- Campbell, R. F., Corbally, J. E., & Nystrand, R. O. (1997). *Pengenalan Pentadbiran Pendidikan* (Ketiga; Elias, Ed.). Kuala Lumpur: Penerbit Universiti Putra Malaysia.
- Cheng, A. Y. N., & Szeto, E. (2016). Teacher leadership development and principal facilitation : Novice teachers perspectives. *Teaching and Teacher Education*, 58, 140–148.
- Chua, Y. P., & Zuraidah, M. (2014). Predictors of multiple intelligence abilities for Malaysian school leaders. *Procedia - Social and Behavioral Sciences*, 116, 5164–5168.
- Creswell, J. W. (2018). Educational research: Planning, conducting, and evaluating quantitative and qualitative research. In *Educational Research* (5th Edition, Vol. 4).
- Daly, C., & Milton, E. (2017). External mentoring for new teachers: mentor learning for a change agenda. *International Journal of Mentoring and Coaching in Education*, 6(3), 178–195.
- De Witte, K., & Schiltz, F. (2018). Measuring and explaining organizational effectiveness of school districts: Evidence from a robust and conditional Benefit-of-the-Doubt approach. *European Journal of Operational Research*, 267(3), 1172–1181.
- Deeboonmee, W., & Ariratana, W. (2014). Relationship between Strategic Leadership and School Effectiveness. *Procedia - Social and Behavioral Sciences*, 112 (Iceepsy 2013), 982–985.
- Harris, A., & Bennet, N. (2001). *School Effectiveness and School Improvement Alternative Perspectives*. London: Continuum.
- İnandi, Y., & Giliç, F. (2016). Relationship of Teachers' Readiness For Change With Their Participation in Decision Making and School Culture. *Academic Journal*, 11(8), 823–833.
- Institut Aminuddin Baki. (2017). *Panduan Pelaksanaan Pendidikan Abad ke-21*. <https://doi.org/ISBN 978-967-0504-55-1>
- Iskandar, P., Foo, S. F., & Ramli, B. (2018). Relationship between Senior Assistant of Co-Curricular Leadership Styles and Secondary School Teachers' Job Satisfaction. *International Journal of Academic Research in Business and Social Sciences*, 7(14), 391–402.
- Iyer, M. G. (2008). *Current views of the Characteristics of School Effectiveness in the Context of National Secondary Schools from the Perceptions of Principals, Heads of Department and Teachers in Kuala Lumpur, Malaysia*. Unpublished PhD Thesis, University of Leicester.
- Kementerian Pelajaran Malaysia. (2012). *Pelan Strategik Interim Kementerian Pelajaran Malaysia 2011 - 2020* (B. P. dan P. D. Pendidikan, Ed.). Putrajaya: Perpustakaan Negara Malaysia.
- Kementerian Pendidikan Malaysia. (2013). *Buku Panduan Program Transformasi Daerah* (Edisi Pert). Putrajaya: Kementerian Pelajaran Malaysia.



- Kementerian Pendidikan Malaysia. (2017a). *Laporan Tahunan PPPM 2016*.
- Kementerian Pendidikan Malaysia. (2017b). *Panduan Pengurusan Program Transformasi Daerah 3.0* (3rd ed.; B. P. S. Harian, Ed.).
- Kershner, B., & McQuillan, P. (2016). Complex Adaptive Schools : Educational Leadership and School Change. *International Journal of Complexity and Education*, 13(1), 4–29.
- KPM, B. P. dan P. D. P. (2014). *Laporan Kajian Impak Pelaksanaan SISC+ dan SIPartners+ di Kedah dan Sabah*. Putrajaya.
- Kunalan, K. (2013). Pengaruh Bimbingan School Improvement Partner Terhadap Pencapaian Sekolah : Kepimpinan Pengetua Sekolah Sebagai Mediator. *Jurnal Pengurusan Dan Kepimpinan Pendidikan*, 55–71.
- Kunalan, K. (2016). Pengaruh Bimbingan School Improvement Partner (SIPartner) Terhadap Pencapaian Sekolah: Kepimpinan Pengetua Sekolah Sebagai Mediator. *Jurnal Pengurusan Dan Kepimpinan Pendidikan*, 30(2), 55–71.
- Lezotte, L. W., & Synder, K. M. (2011). *What effective schools do: Re-envisioning the correlates*. Bloomington: Solution Tree Press.
- Loi, R., Lai, J. Y. M., & Lam, L. W. (2012). Working under a committed boss: A test of the relationship between supervisors' and subordinates' affective commitment. *The Leadership Quarterly*, 23(3), 466–475.
- Nir, A. E., & Hameiri, L. (2014). School principals' leadership style and school outcomes The mediating effect of powerbase utilization. *Journal of Educational Administration*, 52(2), 210–227.
- Nor Azni, A. A. (2015). *Hubungan antara kepimpinan instruksional pengetua dengan komitmen untuk perubahan guru sebagai mediator dalam melaksanakan pentaksiran berasaskan sekolah*. Unpublished PhD Thesis, Universiti Putra Malaysia.
- Riley, K., Montecinos, C., & Ahumada, L. (2017). Effective principals serving in high poverty schools in Chile : managing competing realities. *Procedia - Social and Behavioral Sciences*, 237(June 2016), 843–849.
- Sammons, P., Hillman, J., & Mortimore, P. (1995). Key Characteristics of Effective Schools: A Review of School Effectiveness Research. In *North*.
- Samy, M., & Cook, K. (2009). Perceived school effectiveness: Case study of a Liverpool college. *International Journal of Educational Management*, 23(2), 185–198.
- Sani, M., Zabidi, A., Razak, A., & Banu, H. (2013). Smart Principals and Smart Schools. *Procedia - Social and Behavioral Sciences*, 103, 826–836.
- Scheerens, J. (2013). The use of theory in school effectiveness research revisited. *School Effectiveness Adn School Improvement*, 24, 1–38.
- Sciarappa, K., & Y. Mason, C. (2014). National principal mentoring: does it achieve its purpose? *International Journal of Mentoring and Coaching in Education*, 3(1), 51–71.
- Sektor Pengurusan Akademik JPN Sabah, J. S. (2016). *Analisis Band Sekolah Menengah Negeri Sabah 2016*.
- Shannon, S., & Blysm, P. (2007). *Nine Characteristics of High-Performing Schools: A research-based resource for schools and districts to assist with improving student learning*. Washington: Superintendent Of Public Instruction.
- Sharifah, M. N. (2010). *Keberkesanan Sekolah : Satu Perspektif Sosiologi* (Cetakan Ke 3). Serdang: Penerbit Universiti Putra Malaysia.
- Shih, W., & Tsai, C. (2016). The effects of knowledge management capabilities on perceived school effectiveness in career and technical education. *Journal of Knowledge Management*, 20(6), 1373–1392.
- Solomou, G. N., & Pashiardis, P. (2016). An effective school autonomy model: Examining headteachers' job satisfaction and work-related stress. *International Journal of Educational Management*, 30(5), 718–734.
- Soumyaja, D., Kamalanabhan, T. J., & Bhattacharyya, S. (2011). Employee Readiness to Change and Individual Intelligence: The Facilitating Role of Process and Contextual Factors. *International Journal of Business Insights & Transformation*, 4(2), 85–91.
- Tan, S. Y. (2015). *Pelaksanaan Program SIPartners+ di Negeri Johor*. Unpublished Master's Thesis, Universiti Teknologi Malaysia.
- Vandeyar, S. (2017). The teacher as an agent of meaningful educational change. *Kuram ve Uygulamada*

*Egitim Bilimleri*, 17(2), 373–393.

Wang, L. H., Gurr, D., & Drysdale, L. (2016). Successful school leadership : case studies of four Singapore primary schools. *Journal of Educational Administration*, 54(3), 270–287.

Woolner, P., Clark, J., Laing, K., Thomas, U., & Tiplady, L. (2014). A school tries to change: How leaders and teachers understand changes to space and practices in a UK secondary school. *Improving Schools*, 17(2),

## Theoretical Framework of School Inspection Effects on School

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### ABSTRACT

*This paper reviews and discusses about two models of school inspection effects towards school. The models used in the discussion are Landwehr's 'Model of Effects and Effectiveness of School Inspection' (2011) and 'Framework of School Inspection Effect' by Ehren and Visscher (2006). The first model describes the benefits of school inspection as primary instrument for gaining knowledge about school, accountability, enforcing standard and school development. This model presents the school inspection desirable outcomes at its best. The second framework on the other hand presented an elaborate concepts and variable of both school inspection effects and side effects. It describes school inspection as a process connected through features of school inspection, external impulses and support, school features, school reaction and its side effects. These models then are merged as a theoretical framework that may provide ground for future studies that wishes to study on school inspection effects on school.*

**KEYWORDS:** School inspection, effect, side effect, school improvement

## 1.0 INTRODUCTION

School inspection has existed as a form of school supervision for a long time, since the end of 18<sup>th</sup> century during the Napoleon regime in France (De Grauwe, 2007). This system then has also been implemented in other European countries, such as in Netherland known as The Dutch Inspectorate of Education) in 1801 (Ehren & Honingh, 2011) and in Britain that was officially introduced in 1839 that known as Her Majesty's Inspectorate (HMI) (MacBeath, 2006).

Although considered as a traditional and a bureaucratic form of supervision (Baxter, 2017), its practice are still remained as the common system of external evaluation on school to administer school as well as a mean to ensure the quality assurance of educational service provided by school (Janssens & van Amelsvoort, 2008; Whitby, 2010).

School inspection can be described as a from of external evaluation conducted by officials that consists of group of inspectors, which has given the authority to visit school at its real-time operation to examine, assess and assist school towards legislation or standard compliance and ensuring the quality of education delivered (Eddy-Spicer, Ehren, Bangpan, Khatwa, & Perrone, 2016; Gray & Wilcox, 2006). The group of inspectors that assigned with the task of inspecting school are the members under the school inspectorate, which is usually a national authority that's responsible in governing school quality. School inspection is often used with the term of school supervision interchangeably. School supervision is however emphasized on continuous development of teachers from internal supervisors that could be performed by the school headteachers or principals or fellow teachers within the same school itself (Thakral, 2015).

### 1.1 Roles of School Inspection

Wilcox and Gray (1996) asserts four primary functions of school inspection, which are: 1) 'inspection as evaluation, 2) 'inspection as auditing', 3) 'inspection as a disciplinary power', and 4) 'inspection as a form of social action'. 'Inspection as evaluation' placed concern in assessing and making judgment on school in ensuring that school is accountable for the action and education provided. The second role, 'inspection as auditing' is intended to ensure schools' adherence towards the educational policy, standards and legislation established by the educational authority and government, in which the compliance towards such standards can guarantee a minimum level of educational quality has been practiced. Thirdly, the 'inspection as a disciplinary power' reflect the history of school inspection at the end of 18<sup>th</sup> century in which institutions are governed and controlled by central government. Therefore, a control mechanism system like school inspection has been introduced to govern schools and to "...inculcate certain bureaucratic values and ideas into the schools" (Glanz, 1994). The final role, which is 'inspection as a form of social action' can be described by understanding the interaction that occurred and involved in its process, that encompasses the relationship and communication between inspectors as the persons in charge that performed the inspection and the inspected key actors, which are teachers, head teacher or principals and sometimes students. These four functions suggested by Wilcox and Gray (1996) mostly reflect the traditional functions of school inspection as control mechanism to govern and to control school. School inspection however has extended its role in serving school that might contribute to school improvement.

From primarily focused to assess and making judgment on school, inspection practices has transformed in concentrating more to the advisory role in helping school specifically teachers and school managers on good practice (Hartley, 1972). Such advisory role indicates that inspectors has taken the role in assisting both teaching and the school managerial area of school. Through instructional supervision that took place during inspection, the teachers can learn to improve by the guidance provided by the inspector (Glanz, 1994). Such form of supervision can help school by empowering teachers to undertake their role and fulfilling the objective in lesson delivery (Haris, Naway, Pulukadang, Takeshita, & Ancho, 2018). The interaction between inspector and head teacher may also develop the capacity for school to improve as head teacher that accompany inspectors during the inspection visit and classroom observation can learn from the comments given by the inspectors (Ehren, Altrichter, McNamara, & O'Hara, 2013). Therefore, this process can transfer the insight to the school stakeholders that can help school to improve their performance.

School inspection is an important and common practice in many countries that began in Europe and implemented at national level in other countries including Singapore and Malaysia. Given that the success and development of a nation mostly relied on its educational quality, guaranteeing and assuring the quality the education is the primary business for school inspection. Thus, school inspection is expected to perform and contribute to some positive effects on school, which still has been debated and will be discussed in the next section.

### 1.2 The Effects of School Inspection

"All around the world schools are inspected and the assumption is that this in a positive way contributes to the quality of schools and education systems" (Ehren & Visscher, 2006)

Based on previous discussion on some of the roles of school inspection, it indicates that inspection is intended in ensuring school quality that can lead towards better practice and school improvement. However, that might not always be true. Evidence have shown diverse findings on school inspection effects towards school (Hopkins et al., 2016). Although there are some literature suggesting that school inspection can contribute towards school improvement (Altrichter & Kemethofer, 2015; Ehren et al., 2013, 2015), some literature has associated school inspection with unintended effects including strategic activities by schools (de Wolf & Janssens, 2007; Smith, 1995); disturbing effects on normal school life (Penninckx, Vanhoof, Maeyer, & Petegem, 2015); emotional side effects (de Wolf & Janssens, 2007; Penninckx et al., 2015), and narrowing of the curriculum and instructional strategies (Ehren et al., 2015; Jones et al., 2017).

The unintended effects of school inspection has been documented since 1990s, which mostly are negative and might potentially outweigh the intended positive effects of school inspection (Ehren, Jones, & Perryman, 2016). Smith (1995) suggested eight effects that occurred in forms of behaviours practiced by school that experienced high pressure during school inspection with the struggle and intention to improve their school appearance and performance. These effects are stated as below:

- 1) Tunnel vision: emphasis and concentration over a specific indicator while might be neglecting other aspects or indicators at the same time due to the excessive focus on a particular performance aspect (de Wolf & Janssens, 2007; Fitz-Gibbon, 1997)
- 2) Sub-optimization: 'narrow local objectives by managers, at the expense of the objectives of the organisation as a whole' (Smith, 1995). Example: concentrating on potential pupils and neglecting the difficult pupils for the sake of achieving organisations objective as whole (Fitz-Gibbon, 1997)
- 3) Myopia: 'the pursuit of short term targets and solutions by administrator at the expense of legitimate long term objectives or policy' (Ehren & Visscher, 2006)
- 4) Measure fixation: an emphasis on measures of success rather than the underlying objective' (Fitz-Gibbon, 1997; Smith, 1995). Example: a teacher concentrates more on students that are likely to get grade 'D' to specifically address the indicator of students but failed to address the improvement of student achievement and teaching aspect as a whole (Fitz-Gibbon, 1997)
- 5) Misrepresentation: 'the deliberate manipulation of data so that reported behaviour differs from actual behaviour' (Smith, 1995). Example: fraud and deception in providing the school data (de Wolf & Janssens, 2007; Smith, 1995)
- 6) Misinterpretation: the possible misinterpretation and confusion of the data due to the bounded rationality during inspection context that might not represent the actual school condition that may send wrong signal to inspector (Fitz-Gibbon, 1997; Smith, 1995)
- 7) Gaming: '...manipulation of actual behaviour' (Smith, 1995). It might involve the adjustment or distortion of data, figure and benchmark to produce desirable result (Fitz-Gibbon, 1997)
- 8) Ossification: 'organisational paralysis brought about by an excessively rigid system of performance' (Smith, 1995). Example: fear of experimentation in teaching (Jones et al., 2017)

These effects are then further described and conceptualized by contemporary scholars. Although there's so much highlight given to the negative and unintended outcomes of school inspection, the focus in providing description in how school inspection can help in contributing towards positive effects and improvement to school should also be addressed. By identifying and recognizing the potential effects of school inspection, the inspector and policy maker that involve in the school inspection process can aware of any strategies and practices that may allow for the benefits and strengths of school inspection to outweigh and to undo its negative effects.

To gain understanding and to expand the knowledge of school inspection effects, 'the development of a theoretical framework on the effects of school inspection is important to be discovered (Ehren & Visscher, 2006). Therefore, this paper aims to review two frameworks that explained the effects of school inspection. The development of theoretical framework may potentially provide ground for future studies that wishes to explore the school inspection effects that is still considered as lacking and inconclusive due to the mixed picture and result of school inspection perception and its effects (Ehren & Visscher, 2006; Hopkins et al., 2016).

## **2.0 THE SELECTED FRAMEWORKS**

Two models that described the effects of school inspection are chosen, which are 'Framework of School Inspection Effect' by Ehren and Visscher (2006) and 'Model of Effects and Effectiveness of School Inspection' by Landwehr (2011). The discussion on the model proposed by Landwehr however is referred to a secondary article that described his work by Gaertner, Wurster and Pant (2013) since the original work was written in German language.

### **2.1 Framework of School Inspection Effect by Ehren and Visscher (2006)**

This framework by Ehren and Visscher (2006) described the school inspection effects as a process and continuum that consists of several aspects. The framework is constructed by reviewing literature that reported findings on school inspection intervention.

In the earlier stage of developing the model, they proposed the basic model of inspection effects that consist of three blocks that become the basis for the literature review in developing the framework. The basic model is presented in the Figure 1.

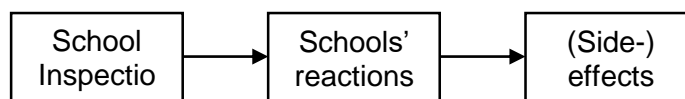


Figure 1: Basic framework of school inspection effects

This basic model describes three primary aspects in school inspection effects which are the features and characteristics of the school inspection, schools' reactions to inspection and finally, the effects and side-effects of inspection. This model shows series of chain in the school inspection process itself that can be linked with the school reaction and the effects afterwards. The model is further elaborated by including the 'factors in and around the school' that may influence school reactions in having the school inspection. Since features around the school can stimulate and influence the school action, two aspects that influencing schools in reacting and responding to school inspections has been added, which are: a) school features, and, b) 'school external impulses and support'. The elaborated framework shown in Figure 2 presents factors in each of the aspects (in the block) that considered as relevant in discussing the school inspection effects.

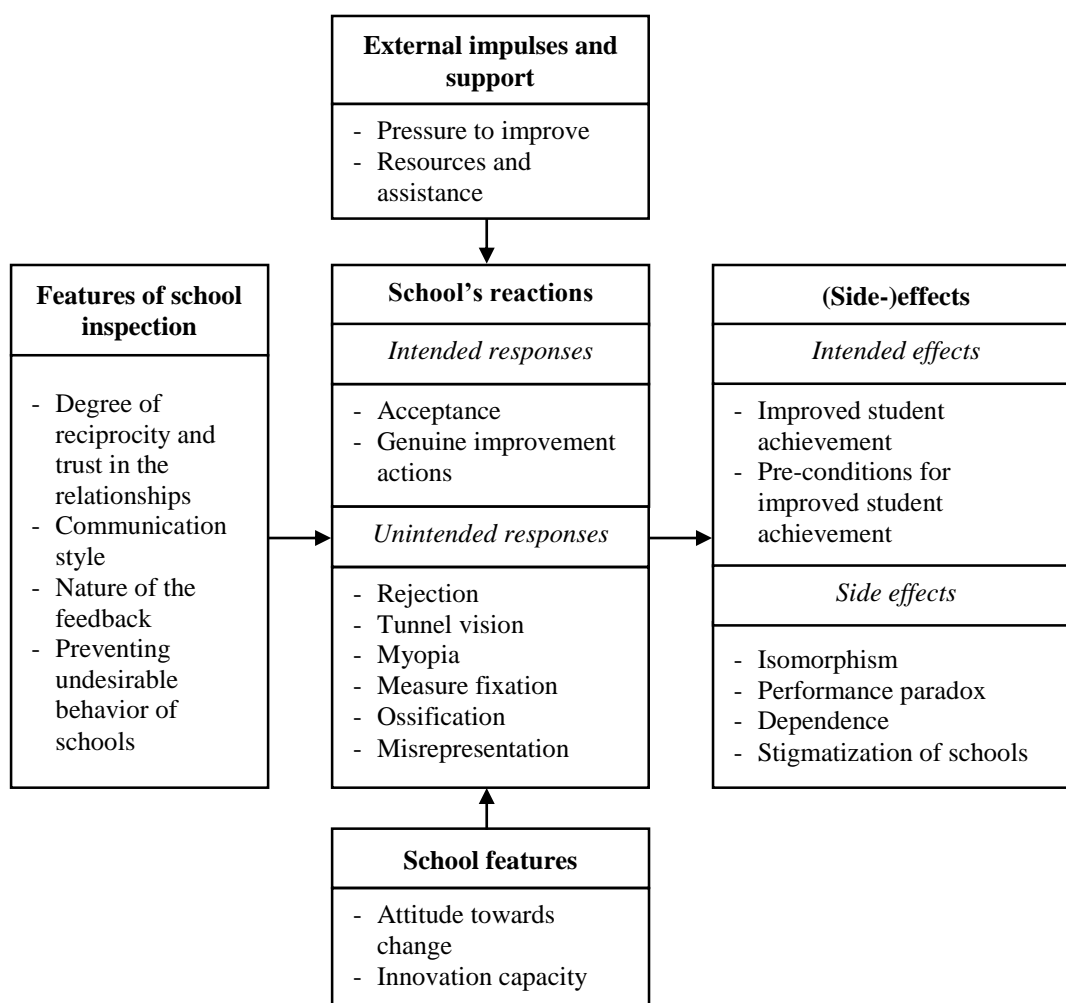


Figure 2: The detailed elaborate framework of school inspection effects

The framework encompasses of five primary aspects. The first three dimensions relates directly with school inspection which are, i) features of school inspection, ii) school's reactions, and iii) side-effects of inspection. The additional two dimensions however relates with internal and external school factors that might influence school reaction to inspection, which are iv) school features, and iv) external impulses and support. The description for the factor listed in the framework is listed in Table 1 below.

Table 1. Description of factors in each of the aspects in the framework

Features of school inspection	Schools' reaction	(Side-)effects	Factors in and around the school
<ul style="list-style-type: none"> <li>• <i>Degree of reciprocity and trust in the relationships</i>: Described inspectors' relationships with schools that play crucial role that may 'encourage schools to have an open attitude about their strengths and weaknesses, and to act upon recommendations'</li> <li>• <i>Communication style</i>: described by dimensions of power (the extent to which the inspector gives direction to the interaction process) and nearness (relates to the emotional distance between the inspector and other participants in the interaction process) during interaction in inspection context</li> <li>• <i>Nature of the feedback</i>: the provision of feedback and the feedback characteristics that can influence school acceptance and response towards the inspection</li> <li>• <i>Preventing undesirable behaviour of schools</i>: the practice in school inspection that can be organised to prevent negative side-effects</li> </ul>	<p><b>Intended responses</b></p> <ul style="list-style-type: none"> <li>• <i>Acceptance</i>: school accepting the inspection process, findings and recommendations</li> <li>• <i>Genuine improvement actions</i>: school staff are willing to change and that the inspection findings and the recommendations are translated into a strategy for improvement</li> </ul> <p><b>Unintended responses</b></p> <ul style="list-style-type: none"> <li>• <i>Rejection</i>: schools reject the recommendations of the Inspectorate</li> <li>• <i>Tunnel vision</i>: emphasis placed on certain quantified aspect in the inspection framework at the expense of unquantified performance aspects that failed to be focuses as a whole</li> <li>• <i>Myopia</i>: aim at short-terms success instead of long-term school improvement</li> <li>• <i>Measure fixation</i>: emphasising measures of success rather than the underlying objective</li> <li>• <i>Ossification</i>: used inspection framework rigidly and refrain from innovating</li> <li>• <i>Misrepresentation</i>: manipulation of data so that reported action differs from the actual ones</li> </ul>	<p><b>Intended effects</b></p> <ul style="list-style-type: none"> <li>• <i>Improved student achievement</i>: school inspection in improving student achievement</li> <li>• <i>Pre-conditions for improved student achievement</i>: contributing factors such as feedback to and reinforcement of students that can provide conditions for improvement</li> </ul> <p><b>Side effects</b></p> <ul style="list-style-type: none"> <li>• <i>Isomorphism</i>: schools adjusting their behaviour accordingly to focus on the performance indicator</li> <li>• <i>Performance paradox</i>: refers to a weak correlation between performance indicators and real performance</li> <li>• <i>Dependence</i>: schools may become dependent on the Inspectorate and become unable decide for improvement actions themselves</li> <li>• <i>Stigmatization of schools</i>: related to the publication of inspection findings and the negative publicity resulting from this</li> </ul>	<p><b>School features</b></p> <ul style="list-style-type: none"> <li>• <i>Attitude towards change</i>: staff's attitude towards change and recommendation given by Inspectorate</li> <li>• <i>Innovation capacity</i>: schools' capability to implement innovations</li> </ul> <p><b>External impulses and support</b></p> <ul style="list-style-type: none"> <li>• <i>Pressure to improve</i>: school environment like local community that can force a school to change</li> <li>• <i>Resources and assistance</i>: external resources and help that can stimulate schools to change</li> </ul>

This framework presented a detailed process and constructs that's related with school inspection effect. The explanation on the school internal and external factors however has not been described in-depth. As school features are related with other variable instead of school inspection and a detailed description on this matter has not been provided, the final framework will not include these factors as to only focuses on school inspection process. Therefore, only the aspects of 'features of school inspection', 'schools' reaction' and 'side effects' are included in constructing the theoretical framework.

It important to note that this framework has actually underwent some adjustment over time and has been revised by Ehren and colleagues in developing more elaborated framework in describing the causal mechanism of school inspection. Ehren et al. (2013) reported the revised version of this framework through the study on the impact of school inspections on improvement of schools in six European countries, including The Netherlands, England, Sweden, Ireland, Austria and Czech Republic. In her work in 2016 (Ehren & Pietsch, 2016), the latest version of the framework was referred to as 'theory of action about the impact of school inspections'. As the revised version is rooted and derived from the European study, the model is much more complex and might not be related with the practice of school inspection in other context or country (example: the public reporting of school inspection that is not practiced in Malaysia). Therefore,

the framework by Ehren and Visscher (2006) that is much more concise is chosen to be discussed and employed.

Gustafsson, Ehren, Conyngham, McNamara, Altrichter and O'Hara (2015) studied on how school inspection impacts the improvement of school based on the revised model. Based on the data from principal's survey answer, the study reported that "inspection drives change indirectly, by encouraging certain developmental processes, rather than through more direct coercive methods. This is related with the next model by Landwehr that is going to be discussed. The upcoming model categorised four functions of school inspection in which each of the function described the developmental process of school inspection contribution on school improvement.

## 2.2 Model of Effects and Effectiveness of School Inspection by Landwehr (2011)

The second model to be discussed is the model of effects and effectiveness of school inspection by Landwehr (2011). While the framework of school inspection effects by Ehren and Visscher (2006) included both the positive and negative outcomes of school inspection, this model describes only the positive effects of school inspection. Ehren and Visscher has described the effects of inspection in both the schools' reactions and side effects of the inspection. Landwehr, however offered description on the effects based on the role and function of school inspection by describing how the school inspection take effect according to its functions.

This model describes school inspection effects as a set of four functions whereby each of the functions reflected positive effects of inspection. School inspection is considered as an instrument in i) gaining knowledge, ii) 'accountability', iii) 'school development' (or also school improvement), and iv) 'enforcing standards'. Figure 3 presents the four functions of school inspection along with the relation and description between one function to another.

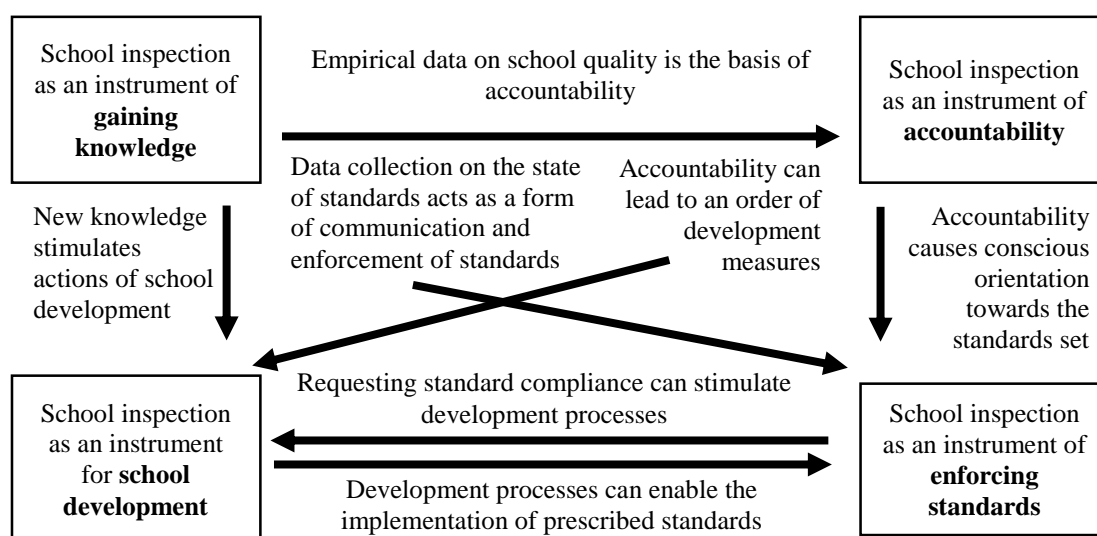


Figure 3: Model of effects and effectiveness of school inspection by Landwehr (2011)

Each of these four functions has positive effects based on its own function and can also contributes to other effects related with other functions. The description of the effects and contribution within and between the functions is provided in Table 2.



Table 2. Description of effects for four inspection functions

Gaining knowledge	Accountability	Enforcing standards	School development
<p>To capture the current picture of school quality that school staff might have less known or identified.</p> <p>➤ <i>Contribute to accountability</i> by proving data on school quality</p> <p>➤ <i>Contribute to school development</i> by providing knowledge about school condition to the school staffs</p> <p>➤ <i>Contribute to standard enforcement</i> by gaining info and reinforcement action based on the data of standard practices at school</p>	<p>The function that concerns about the quality of schools.</p> <p>➤ <i>Contribute to school development</i> by giving out order for development measures</p> <p>➤ <i>Contribute to standard enforcement</i> by promoting consciousness towards practicing the standard</p>	<p>To ensure that school practices meet the criteria and standards that has been prescribed</p> <p>➤ <i>Contribute to school development</i> as adherence to standards can encourage the school development process</p>	<p>Making way for school development that can help school to improve</p> <p>➤ <i>Contribute to standard enforcement</i> as development procedure will enable the execution and compliance of the given standards</p>

There is a limited discussion offered here on the research findings in relation to this piece of work as the original work as well as other literature citing this article are written in German language. Therefore, in discussing research findings related with this model, the literature by Gaertner et al. (2013) is chosen to be discussed. A longitudinal control-group study by Gaertner et al. (2013) has employed this model in examining how teachers and principals of inspected versus uninspected schools perceive school improvement at their schools. The findings that are in relation with Landwehr's model indicates that: "(a) the inspection process described generates knowledge about the quality of schools; (b) this knowledge is, however, only rarely used for autonomous school improvement; (c) school authorities do use the newly generated knowledge". These findings indicate that school inspection may not have direct contribution to school improvement, but from their contribution to accountability. The findings suggested by this study, however, might be differ with study using different design or methodological approach.

This model is used to substantiate the previous model by Ehren and Visscher (2006). The understanding on the school inspection role can be helpful in minimizing the unwanted effects whereby school may realise the benefits that can be utilized through such functions. Each of these roles has its own corresponding effects and may lead to another benefit. Both of this model by Landwehr (2011) and Ehren and Visscher (2006) is combined and integrated in the next section.

### 3.0 THE THEORETICAL FRAMEWORK

Although school supervision can generally describe school inspection, as a traditional and bureaucratic form of supervision; the theories and models used in describing supervision are more closely related with the instructional supervision, that associated with the pedagogy and the process of teaching and learning. School inspection as a different form of supervision should be seen and described differently. However, there isn't much theory in describing school inspection. Its implementation relied more on the framework established by the national authority that consists of standards in ensuring a good quality education. This framework is varied according to regions and countries. While this local frameworks or standards might contrast, the existence of empirical framework is important to describe some aspects of school inspection such as the functions, process, characteristics and effects.

As mentioned earlier in section 1.2, it has been reported that studies on the school inspection effects on school shown mixed picture, that uncovers both positive and negative sides of school inspection effects (Hopkins et al., 2016). Husfeldt (2011) in Altrichter and Kemethofer (2014) argued that the emergence of inconclusive research evidences on this matter is might likely to be caused by 'the lack of theoretical models which account for the specific features of inspection approaches...'. Although the practical differences in exercising school inspection according to local context might describe the multiple findings on this subject, the presence of a detail theoretical framework is important in providing detail description and explanation on school inspection phenomenon, especially on its process and effects on school. Therefore, the purpose of this paper is to propose a theoretical framework that can potentially contribute to the body of knowledge and in implementing research related with school inspection effects.

Both frameworks of school inspection effects by Ehren and Visscher (2006) and Landwehr (2011) presented before provides understanding of school inspection effects from different perspective. While the framework by Ehren and Visscher provides elaborate description with several variables and different factors in describing the inspection effects, the model by Landwehr offered comprehensive model on the potential effects of school inspection based on its four functions that lenses only on positive outcomes. These two models are merged together to form a framework that can be utilized in studying school inspection effects. For the first model, the author only chose the basic aspects of school inspection effects which are, features of school inspection, schools' reactions, and the effects and side-effects of inspection. The proposed theoretical framework is presented in Figure 4.

The proposed theoretical framework begins by addressing the 'perceived functions of school inspection and its effects and contribution on school' and the 'perceived features of school inspection'. This first construct, which is the 'perceived functions of school inspection' is derived from Landwehr's model of effects and effectiveness of school inspection. It describes the process of school inspection based on its functions that might lead to school improvement. The 'perceived features of school inspection' is derived from Ehren and Visscher's model that describes the characteristics of the inspection process and the characteristics of the inspectors. As the school inspection process consists of activities and procedures in fulfilling its functions as well as the occurrence of interaction among school staffs with the inspectors, the participants or respondents that involve with the activity may possess certain mindset or perception towards the execution of the event that relates with both the 'perceived functions' and the 'the perceived features of school inspection'.

Both of these 'perceived elements' are placed together in further describing the reaction and effects of school inspection. Understanding the process of school inspection in relation to its functions (based on Landwehr's model): collecting information regarding school, ensuring school's accountability, enforcing education standards, and promoting school development, can provide knowledge and understanding on to what extent the function is fulfilled and its effects on school. The perception of school inspection features placed concern on how the inspection process and the inspector's characteristics will influence the teachers and principals' reaction and the effects on them and their school. The two following blocks described the 'school's reactions' in experiencing school inspection and finally, the 'effects and side effects' as described in section 2.1.

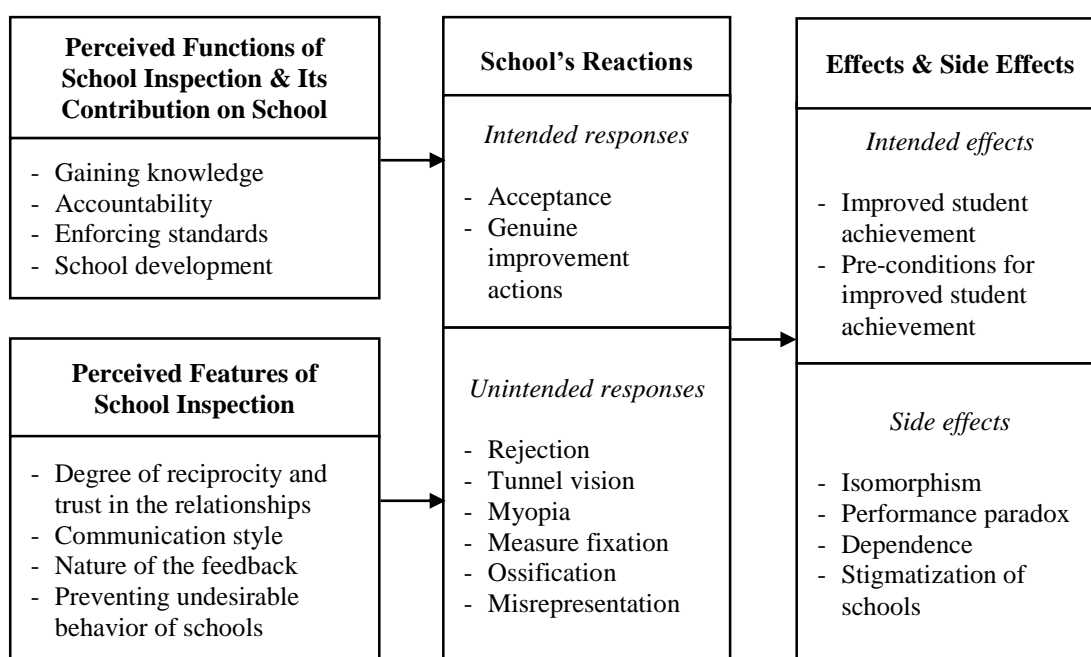


Figure 4: The theoretical framework of school inspection effects

The merged framework as proposed above may have strength over a standalone model as it can widen the perspective and understanding of the topic studied. Therefore, the scope in describing the school inspection effects will be broader. The view and understanding on the functions of school inspection (as suggested by Landwehr) may enhance the current model of Ehren and Visscher as it can provide the

perception and experience of the involved stakeholders, either teachers, principals and/or school inspectors on the actual function of school inspection. Such perception may be reflected through other questions such as – does it implemented the way it should be? does it meet its purpose? does the functions brings its desired effects? The inclusion of the Ehren and Visscher's model described the school inspection effects in detail. While the perceived functions described the perception on the inspection process based on its functions or objectives, the perceived school inspection features described the characteristics of the process in where both can possibly affect the school reaction that chained towards effects and side-effects of school inspection on school.

The combination of models may not only provide a clear framework in conducting a research but also enabling the area of discoveries in school inspection aspects that can strengthen the understanding and insights gained by researcher on how school inspection work based on its actual practices and how it affects teachers, principals, pupils, and schools. Such discovery might provide better understanding on the school inspection issue.

#### **4.0 SUGGESTION FOR FUTURE STUDIES**

The framework proposed in this article can be utilized as guidance and scaffolding that can direct for future studies in making sense of the school inspection process and effects. The perception of school inspection effects can be studied by focusing on the key actors of the process which include teachers, school principals or head teachers, school managers and even students and parents. Future exploratory study on this topic might begin with qualitative research approach in gaining further and in-depth insight on the functions, features, reactions, effects and overall process of school inspection through interviews with key actors that experiencing school inspection.

Since the models employed and presented above derived from European studies, researcher that wishes to embark in future research in this area should be sensitive on the school inspection context and standard used in their own countries. One of the factors that stated in the framework above which is 'stigmatization of schools' under the element of 'effects and side effects' is most likely impossible to occur in Malaysia's context since the result of school inspection are kept privately by the Jemaah Nazir dan Jaminan Kualiti (JNJK – School Inspectorate and Quality Assurance) and the report are only provided to the respective school and to the Ministry of Education, which is also subjected to confidentiality under the provisions of subsection 120 (2) of the Education Act 1996 (Act 550). Therefore, such research should be context-sensitive to avoid the misrepresentation of the inspection system that implemented in the particular country.

#### **5.0 CONCLUSION**

This paper has discussed the functions of school inspection and its effects. Although primarily intended to help school to improve, the existence of undesirable effect of this system should not be taken lightly as it may outweigh the positive and desirable outcomes that it is intended to achieve. By reviewing two different models of school inspection effects, a theoretical framework of school inspection effect was proposed, in which can be later employed as ground for future exploratory study in this topic.

#### **ACKNOWLEDGMENT**

The researcher would like to acknowledge the Ministry of Education Malaysia (MOE) and Universiti Putra Malaysia for the financial funding of this paper through Geran Putra (GP/2018/9636700) for research university grant (RUG).

#### **REFERENCES**

- Altrichter, H., & Kemethofer, D. (2014). *Impact of school inspection on teaching and learning in primary and secondary education in Austria: Technical report ISI-TL project year 1-3 data*. Retrieved from <http://schoolinspections.eu/impact/wp-content/uploads/downloads/2014/07/Final-technical-report-Austria.pdf>
- Altrichter, H., & Kemethofer, D. (2015). Does accountability pressure through school inspections promote

- school improvement? *School Effectiveness and School Improvement*, 26(1), 32–56. <https://doi.org/10.1080/09243453.2014.927369>
- Baxter, J. (2017). School Inspectors as Policy Implementers: Influences and Activities. In J. Baxter (Ed.), *School Inspectors: Policy Implementers, Policy Shapers in National Policy Contexts*. Milton Keynes: Springer.
- De Grauwe, A. (2007). Transforming School Supervision into a Tool for Quality Improvement. *International Review of Education*, 53(5–6), 709–714. <https://doi.org/10.1007/s11159-007-9057-9>
- de Wolf, I. F., & Janssens, F. J. G. (2007). Effects and side effects of inspections and accountability in education: an overview of empirical studies. *Oxford Review of Education*, 33(3), 379–396. <https://doi.org/10.1080/03054980701366207>
- Eddy-Spicer, D., Ehren, M. C. M., Bangpan, M., Khatwa, M., & Perrone, F. (2016). *Under what conditions do inspection, monitoring and assessment improve system efficiency, service delivery and learning outcomes for the poorest and most marginalised? A realist synthesis of school accountability in low- and middle-income countries*. London: EPPI-Centre, Social Science Research Unit, UCL Institute of Education, University College London.
- Ehren, M. C. M., Altrichter, H., McNamara, G., & O'Hara, J. (2013). Impact of school inspections on improvement of schools-describing assumptions on causal mechanisms in six European countries. *Educational Assessment, Evaluation and Accountability*, 25, 3–43. <https://doi.org/10.1007/s11092-012-9156-4>
- Ehren, M. C. M., Gustafsson, J. E., Altrichter, H., Skedsmo, G., Kemethofer, D., Huber, S. G., ... Kemethofer, D. (2015). Comparing effects and side effects of different school inspection systems across Europe. *Comparative Education*, 51(3), 375–400. <https://doi.org/10.1080/03050068.2015.1045769>
- Ehren, M. C. M., & Honingh, M. E. (2011). Studies in Educational Evaluation Risk-based school inspections in the Netherlands: A critical reflection on intended effects and causal mechanisms. *Studies in Educational Evaluation*, 37(4), 239–248. <https://doi.org/10.1016/j.stueduc.2012.02.001>
- Ehren, M. C. M., Jones, K., & Perryman, J. (2016). Side Effects of School Inspection; Motivations and Contexts for Strategic Responses. In M. C. M. Ehren (Ed.), *Methods and Modalities of Effective School Inspections*. Springer. Retrieved from <https://fivethirtyeight.blogs.nytimes.com/2011/01/03/all-politics-is-local-the-debate-and-the-graphs/>
- Ehren, M. C. M., & Pietsch, M. (2016). Validation of Inspection Frameworks and Methods. In M. C. M. Ehren (Ed.), *Methods and Modalities of Effective School Inspections*. Switzerland: Springer.
- Ehren, M. C. M., & Visscher, A. J. (2006). Towards A Theory On Impact of School Inspection. *British Journal of Educational Studies*, 54(1), 51–72.
- Fitz-Gibbon, C. (1997). *The value added national project: Final report - Feasibility studies for a national system of value added indicators*. Durham.
- Gaertner, H., Wurster, S., & Pant, H. A. (2013). The effect of school inspections on school improvement. *School Effectiveness and School Improvement*, 25(4), 489–508. <https://doi.org/10.1080/09243453.2013.811089>
- Glanz, J. (1994). History of Educational Supervision: Proposals and Prospects. In *Council of Professors of Instructional Supervision*. Chicago, IL.
- Gray, J., & Wilcox, B. (2006). Research Papers in Education In the aftermath of inspection: the nature and fate of inspection report recommendations, (February 2014), 37–41. <https://doi.org/10.1080/0267152950100102>
- Gustafsson, J. E., Ehren, M. C. M., Conyngham, G., McNamara, G., Altrichter, H., & O'Hara, J. (2015). From inspection to quality: Ways in which school inspection influences change in schools. *Studies in Educational Evaluation*, 47, 47–57. <https://doi.org/10.1016/j.stueduc.2015.07.002>
- Haris, I., Naway, F. A., Pulukadang, W. T., Takeshita, H., & Ancho, I. V. (2018). School Supervision Practices in the Indonesian Education System; Perspectives and Challenges. *Journal Of Social Studies Education Research*, 9(2), 366–387.
- Hartley, O. A. (1972). Inspectorates in British Central Government. *Public Administration*, 50(4), 447–466. <https://doi.org/10.1111/j.1467-9299.1972.tb00117.x>
- Hopkins, E., Burrell, H., Hendry, H., Garrod, F., McClare, S., Pettit, D., ... Temple, J. (2016). Teachers' views of the impact of school evaluation and external inspection processes. *Improving Schools*, 19(1), 52–61. <https://doi.org/10.1177/1365480215627894>

- Janssens, F. J. G., & van Amelsvoort, G. H. W. C. H. (2008). School self-evaluations and school inspections in Europe: An exploratory study. *Studies in Educational Evaluation*, 34(1), 15–23. <https://doi.org/10.1016/j.stueduc.2008.01.002>
- Jones, K. L., Tymms, P., Kemethofer, D., O'Hara, J., McNamara, G., Huber, S., ... Greger, D. (2017). The unintended consequences of school inspection: the prevalence of inspection side-effects in Austria, the Czech Republic, England, Ireland, the Netherlands, Sweden, and Switzerland. *Oxford Review of Education*, 43(6), 805–822. <https://doi.org/10.1080/03054985.2017.1352499>
- Landwehr, N. (2011). Thesen zur Wirkung und Wirksamkeit der externen Schulevaluation [Theses on the impact and effectiveness of the external evaluation of schools]. In C. Quesel, V. Husfeldt, N. Landwehr, & P. Steiner (Eds.), *Wirkungen und Wirksamkeit der Externen Schulevaluation [Effects and Effectiveness of External School Evaluation]* (pp. 35–69). Bern: Hep der Bildungsverlag.
- MacBeath, J. (2006). *School inspection and self-evaluation: Working with the new relationship*. School Inspection and Self-Evaluation: Working with the New Relationship. Oxon: Routledge. <https://doi.org/10.4324/9780203967102>
- Penninckx, M., Vanhoof, J., Maeyer, S. De, & Petegem, P. Van. (2015). Explaining effects and side effects of school inspections: a path analysis. *School Effectiveness and School Improvement*, 27(3), 333–347. <https://doi.org/10.1080/09243453.2015.1085421>
- Smith, P. (1995). On the unintended consequences of publishing performance data in the public sector. *International Journal of Public Administration*, 18(2&3), 277–310. <https://doi.org/10.1080/01900699508525011>
- Thakral, S. (2015). The Historical Context of Modern Concept of Supervision. *Journal of Emerging Trends in Educational Research and Policy Studies*, 6(1), 79–88.
- Whitby, K. (2010). *School Inspection: recent experiences in high performing education systems*. Berkshire.
- Wilcox, B., & Gray, J. (1996). *Inspecting Schools: Holding Schools to Account and Helping Schools To Improve*. Buckingham: Open University Press.

## A Joint Vessel for School Effectiveness: School Culture and Climate

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### ABSTRACT

*School culture and climate are two important elements in school management in improving school effectiveness. Both elements need parallel attention to ensure educational success. This study was conducted to examine the relationship and factors influencing effectiveness between School culture and climate at primary national schools (SK). The findings revealed, the correlation between School culture and climate dimensions. Three hundred fifty-three (353) teachers from 84 primary (SK) in Peninsular Malaysia participated in this study. Data were collected using the School Culture Survey (Gruenert, 1998, School Climate Instrument (Ross & Lowther, 2003) School Effectiveness Instrument (Lezotte dan Snyder, 2011). The analysis showed a significant correlation between School culture ( $M=4.15$ ,  $SD=0.381$ ) and School climate ( $M=4.13$ ,  $SD = 0.310$ ),  $r=.744$ ,  $p<0.01$  in SK. The results of the Stepwise Multiple Regression analysis show that the School culture Regression Model P4 (Collaborative Leadership, Unity of Purpose, Learning Partnership and Teacher's Collaboration) contributed for 47.0% ( $R^2=.470$ ) changes in variance in School Effectiveness [ $F(4,348)=77.080$ ,  $p<0.5$ ]. The School climate regression model (Leadership, Instruction, Expectations and Environment) contributed 54.8% ( $R^2=.548$ ) of the variance in school effectiveness [ $F(4,348)=105.530$ ,  $p<0.5$ ]. The overall results of multiple regression analysis showed that the school culture Influence ( $\beta = .399$ ,  $p<.05$ ) compare than the school climate ( $\beta = .367$ ,  $p<.05$ ) with both combination significantly contributed 52.5% ( $R^2= .525$ ) of the variance change [ $F(2,350)=193.511$ ,  $p<0.5$ ]. In summary, finding showed a positive significant correlation between School culture and climate dimensions with  $p<0.01$ ,  $n=353$ . This model contributes to predicting the impact of school culture and climate on school effectiveness.*

**KEYWORD:** School Culture, School Climate, School Effectiveness

### 1.0 INTRODUCTION

Education system in Malaysia need to address challenges in creating work-ready graduates with a balance of human capital and ability to compete internationally. Improving standards and quality in education need to be initiated as early as from primary school levels. School management plays a crucial role in improving the performance of the students by monitoring the School culture and climate. The Malaysian Education Blueprint (PPPM 2013-2025), has outlined guidelines on School climate management. The second wave of the School Transformation Program 2025 (TS25), emphasizes that the 'Teaching and Learning Environment' is an important aspect for improving school effectiveness. The Malaysian education system will change from school based education to a system that seeks the involvement of parents and communities towards ensuring that every pupil enjoys the most conducive and effective learning environment.

School culture and climate influence every aspect of the school function effectiveness. School culture and climate shared by stakeholders provide sustainability of objective achievement (Lewis, Asberry, DeJarnett & King, 2016; Adul Manaf & Che Mohd, 2017). Student achievement will continue to improve in schools that foster the professional learning community among teachers by practicing school cultural and climate. Hence, leadership direct and indirect needs to shape the school cultural and climate situation for

school improvement. In this process, school leadership becomes a mediator in shaping school culture and climate (Carpenter, 2015; Hamidah, Muhamad & Mohd Noor, 2016; Bellibas & Yan Liu, 2018).

## 2.0 OBJECTIVES

The purpose of this study is to determine the relationship between School culture and climate at National Schools. Study also aims to examine the influence of factors in the School culture and climate for school effectiveness in National Schools. Additionally, the correlation between school culture and climate dimensions are also will be test.

## 3.0 HYPOTHESIS

This research focuses on finding the relationship between school culture and climate. Additionally, the influence of school culture and climate on school effectiveness as a predictor factor also reveal. Therefore, three of the null hypothesis study is as follows;

- H<sub>1</sub>: There is no relationship between school culture and school climate.
- H<sub>2</sub>: There is no linear relationship between school culture and school effectiveness
- H<sub>3</sub>: There is no linear relationship between school climate and school effectiveness.

## 4.0 METHODOLOGY

This is a survey study, participated by a total of 353 teachers from primary SK schools. Data for this study were collected using the School Culture Survey Instrument (Gruenert, 1998), School Climate Instrument (Ross & Lowther, 2003) and School Effectiveness Instrument (Lezotte & Snyder, 2011). The instrument for School culture has six dimensions of collaborative leadership, teacher collaboration, professional development, collegial support, unity of purpose and learning partnership. The School climate instrument has seven dimensions based on collaboration, environment, expectations, instruction, involvement, leadership and order. The data obtained from the questionnaire were analyzed using the SPSS version 24. The use of mean value is a widely used method to describe the responses of all participants to the item in an instrument (Cresswell, 2012).

## 4.0 THEORETICAL FRAMEWORK

This study was designed based on the theory of organization culture (Schein, 1992) and school climate (Anderson, 1990). It defines both school culture and climate as independent variables. The School Culture Survey (Gruenert, 1998) and School Climate Instrument (Ross & Lowther, 2003), are used to gain information for this study. Theory of School Effectiveness and Improvement (Hargreaves, 2001) also applied as tie for this research. The figure 1, shows the combination of theory of this research

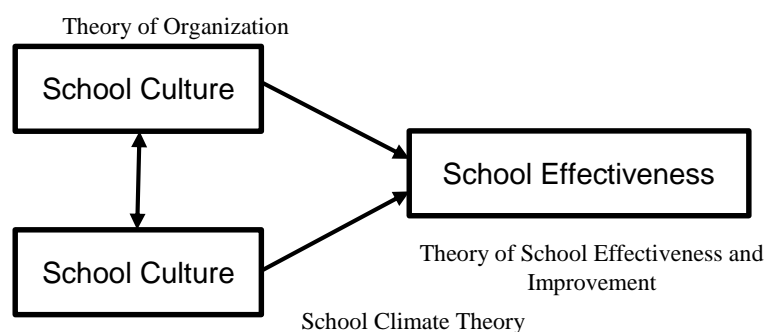


Figure 1: Theoretical framework

## **5.0 SCHOOL CULTURE AND CLIMATE AS PREDICABLE FACTORS FOR SCHOOL EFFECTIVENESS**

School culture and climate have been increasingly dramatic in recent years in the management of the education system. The both elements are seen as a shield in school management and administration in determining school effectiveness; and contributes largely in ensuring students' achievements (Gonder & Hymes, 1994). Systematic school management on the culture and climate improves student achievement and contributes to student achievement. The school culture and climate are said to be the essence of the soul and body which attracts teachers and students towards the school that wants to be part of it. This school culture and climate attraction influence student achievement (Wang et al., 1997).

Organizational culture is the basic concept in management theory. In the present study the management area assumes that organizational culture includes assumptions, attitudes, beliefs, rituals, traditions, knowledge, languages, norms and values shared by all members in an organization (Schein, 1985). Culture also describes a way of life that gives meaning and value not only in art or learning but also in community institutions and describing behavior (Bates, 1987). Culture is interpreted as a behavior and human behavior that reflects their values, customs and ways of life which include aspects of thinking, attitudes, beliefs and actions (Mohd Faiz, Jamal & Hamidah, 2016). School culture can be seen in a situation where school children comprising students, staff and parents engage in school activities and programs that illustrate the cultural characteristics of the ethos (Clarke et al., 1976).

The school environment interacts complexly in influencing students, staff and family members in appreciating the school. Based on Anderson (1982), there are three main dimensions of the School climate that's physical, social, and elemental aspects of trust, value and sharing of information. Based on the two explanations it has the connection in terms of its aspect. School climate reflects the physical and psychological aspects of a school that seeks to create and provides a conducive environment for teaching and learning. Howard (1974), describes the School climate as a social and cultural state of the school that affects the behavior of people in it.

Studies shows that there is a relationship between organizational culture and climate, poor management affects the performance of employees and services rendered negatively affecting customers (Glisson & Green, 2006; Patterson, Dulmus, & Maguin, 2012). This is related to educational institutions as organizations and students as customers. Studies on organizational culture and climates recently have provided a clear indication that weak management of organizational culture and climate will affect the quality of school effectiveness. So the management of school cultural and climate will have an impact on the performance of teachers and student's achievement indirectly. In order to ensure that best practices and quality outcomes the school cultural and climate need to be restored (Glisson, 2007; Glisson, Green, & Williams, 2012).

## **6.0 SCHOOL CULTURE AND CLIMATE DIMENSIONS**

The analysis of this study focuses on the correlation between school cultural dimensions and School climate dimensions and also contribution factor for school effectiveness. Both of these variables have a relationship in various aspects that affect school achievement (Patterson et al., 2014). The School Culture Survey instrument developed by Gruenert, (1998) used. in identifying the relationship between these dimensions.

This questionnaire was designed for school teachers to measure the level of School culture as perceived by them. This instrument consists of 35 items divided into six main dimensions: collaborative leadership with eleven items, teacher's collaboration with six items, professional development with five items, unity of purpose with five items, collegial support with four items and learning partnership four items. All this dimensions and items contribute as factor influence for school effectiveness (Xiaoju Duan, Xiangyun Du, & Kai Yu, 2018).

Gruenert (1998), identified six dimensions to describe the collaborative School culture which is describing collaborative leadership as school leaders who establish and maintain collaborative relationships with school staff; teacher collaboration concerns working together and sharing pedagogical information; unity of purpose refers to the school mission and its influence on teaching; professional development encompasses all types of teachers learning to maintain current knowledge about educational practices; collegial support which includes teachers' willingness to help each other when there is a problem; and



learning partnership refers to cooperation between teachers and parents based on common expectations towards student achievements.

School climate is measured using the School Climate Inventory (SCI) developed by Ross and Lowther (2003), which relates to school effectiveness. In a study, there were some findings relating to School climate. The strongest finding was related to involvement. Involvement is defined as the amount of parent and community collaboration which occurs within the school. Within the School climate aspect, the community and parent involvement was positively correlated with student academic achievement (Ross and Lowther, 2003). The inventory helps school leaders gauge school personnel perceptions and address climate-related factors that hinder a school's effectiveness. The SCI includes seven dimensions that are both theoretically and empirically linked with effective school organization climates. The seven dimensions are based on collaboration, environment, expectations, instruction, involvement, leadership and order. For example, "environment" refers to a positive learning environment and "involvement" to parent and community engagement with the school. The survey is intended for school staff and consists of 49 items. All the dimension has seven items accordingly.

## 7.0 RESEARCH FINDING

### 7.1 Demography

Table 1, explain in sum, 353 teachers from SK in peninsular Malaysia were involved in the survey. In terms of gender, there were 35.1% male teachers and 64.9% female teachers. In terms of experience, a total of 10.5% experienced teachers taught between 1 to 5 years, 22.1% had 6 and 10 years of experience, 22.7% had 11 to 15 years of experience, 12.2% had 16 to 20 years of experience and 32.6% had 20 years of experience or more. In terms of academic qualifications, 12.2% of teachers qualified with certificates/diplomas, 80.2% of teachers qualified with a bachelor's degree, 7.4% of teachers qualified with a bachelor's degree and 0.3% teachers with Doctorate.

Table 1. Respondent Profile

Item	Category	Respondent	Percentage (%)
School	National Schools	353	100
Gender	Male	124	35.1
	Female	229	64.9
Teaching Experience	≤ 5	37	10.5
	6 - 10 Years	78	22.1
	11 - 15 Years	80	22.7
	16 - 20 Years	43	12.2
	≥ 20 Years	115	32.6
Academic Qualification	Certificate/Diploma	43	12.2
	Degree	283	80.2
	Masters	26	7.4
	Doctorate	1	0.3
<b>Total</b>		<b>353</b>	<b>100</b>

### 7.2 Relationship Between School Culture and Climate

Table 2, shows the correlation coefficient relationship between the School culture and climate in SK. There is significant relationship between school culture (M=4.15, SD=0.381) and school climate (M=4.13, SD=0.310),  $r = .744$ ,  $p = < .01$ .

Table 2. Relationship Between School Culture and School Climate

N90	SK	
Correlation		
School culture	r	p
	.791**	.000
School climate		

\*\* Correlation is significant at the 0.01 level (2-tailed).

### 7.3 Pearson Correlation Relationship Between School Culture and Climate Dimensions

Table 3, shows a Pearson product-moment correlation coefficient which was computed to assess the relationship between the school culture and climate dimension. There are six school culture dimensions' collaborative leadership, teacher's collaboration, professional development, collegial support, unity of purpose and learning partnership. There are seven school climate dimensions - environment, collaboration, expectations, instruction, involvement, leadership and order. The analysis reveals that there are 42 combinations which show a positive significant correlation between the school culture and school climate dimensions where the value  $p < 0.01$ ,  $n = 353$ .

Table 3. Pearson Correlation Relationship Between School Culture and Climate by Dimension

N90	School culture					
School climate	Collaborative Leadership	Teacher's Collaboration	Professional Development	Collegial Support	Unity of Purpose	Learning Partnership
Collaboration	.666** .000	.496** .000	.533* .000	.558** .000	.583* .000	.516** .000
Environment	.533** .000	.458** .000	.484** .000	.491** .000	.526** .000	.452** .000
Expectations	.336** .000	.304** .000	.371** .000	.441** .000	.400** .000	.467** .000
Instruction	.339** .003	.450** .000	.491** .000	.515** .000	.394** .000	.403** .000
Involvement	.399* .000	.399* .000	.494** .000	.462** .000	.463** .000	.426** .000
Leadership	.601** .000	.473** .000	.487** .000	.503** .000	.451** .000	.458** .000
Order	.401** .000	.292** .000	.464** .000	.434** .000	.484* .000	.444* .000

\*\**. Correlation is significant at the 0.01 level (2-tailed).*

### 7.4 School Culture Factor that influence School Effectiveness

Table 4, shows that collaborative leadership, unity of purpose, learning partnership and teacher's collaboration have significant beta ( $\beta$ ) values. This means that each of these variables explained the variance in school effectiveness significantly after the influence of the other variables was statistically controlled through multiple regression analysis. Professional development and collegial support were not included in the regression model because these variables had  $\beta$  values that were too small and insignificant after the influence of other variables were controlled (Chua, 2009).

Table 4. The  $\beta$  Values of the School Culture Variables

Dimension	Beta	Sig.
Collaborative Leadership	$\beta = .274^*$	.000
Unity of Purpose	$\beta = .214^*$	.000
Learning Partnership	$\beta = .178^*$	.000
Teacher's Collaboration	$\beta = .143^*$	.009
Professional Development	$\beta = .065$	.235
Collegial Support	$\beta = .039$	.428

Note: Significant at level  $*p < 0.05$

The results of the multiple regression analysis in table 5 and 6, show that the change in the four school culture variables included in the regeneration model follows a significant  $\beta$  value. Collaborative Leadership ( $\beta = .565$ ,  $p < 0.5$ ) significantly contributed as much as 31.9% ( $R^2 = .319$ ) changes in variance [ $F(1,351) = 164.179$ ,  $p < 0.5$ ]. The combination of collaborative leadership ( $\beta = .399$ ,  $p < 0.5$ ) and unity of purpose ( $\beta = .351$ ,  $p < 0.5$ ) contributed 41.4% ( $R^2 = .414$ ) changes in variance [ $F(2,350) = 123.751$ ,  $p < 0.5$ ].

Then the combination of collaborative leadership ( $\beta = .337$ ,  $p < 0.5$ ), unity of purpose ( $\beta = .287$ ,  $p < 0.5$ ) and learning partnership ( $\beta = .183$ ,  $p < 0.5$ ) contributed 43.6% ( $R^2 = .436$ ) change in variance [ $F(3,349) = 89.937$ ,  $p < 0.5$ ]. Finally the combination of collaborative leadership ( $\beta = .311$ ,  $p < 0.5$ ), unity of purpose ( $\beta = .245$ ,  $p < 0.5$ ), learning partnership ( $\beta = .126$ ,  $p < 0.5$ ) and teacher's collaboration contributed 47.0% ( $R^2 = .470$ ) change in variance [ $F(4,348) = 77.080$ ,  $p < 0.5$ ]. The regression equation is formulated as follows:

$$Y = 1.797 + 0.212_1 + 0.153_2 + 0.090_3 + 0.132_4$$

The results of the stepwise multiple regression analysis show that the P4 regression model (collaborative leadership, unity of purpose, learning partnership and teacher's collaboration) contributed for 47.0% ( $R^2 = .470$ ) changes in variance in school effectiveness [ $F(4,348) = 77.080$ ,  $p < 0.5$ ]. The influence of collaborative leadership ( $\beta = .311$ ,  $p < .05$ ) was highest, followed by unity of purpose ( $\beta = .245$ ,  $p < .05$ ), teacher's collaboration ( $\beta = .211$ ,  $p < .05$ ) and learning partnership ( $\beta = .126$ ,  $p < .05$ ). School culture contributes in predicting the school effectiveness in National Schools.

Table 5. Linear Regression of School Culture as Predictor

Model	R	R <sup>2</sup>	^R <sup>2</sup>	df	F	Sig.
Collaborative Leadership	.565	.319	.317	1 351 352	164.179	.000
Unity of Purpose	.644	.414	.411	2 350 352	123.751	.000
Learning Partnership	.660	.436	.431	3 349 352	89.937	.000
Teacher's Collaboration	.685	.470	.464	4 348 352	77.080	.000

Note: Significant at level  $p < 0.05$

Table 6. Coefficient Values for School Culture Factor as Predictors

Model	Variable	B	Std.Error	Beta	t
P1	Constant	2.675	.125		21.331
	Collaborative Leadership	.385	.030	.565	12.813
P2	Constant	2.172	.134		16.185
	Collaborative Leadership	.272	.032	.399	8.601
	Unity of Purpose	.220	.029	.351	7.556
P3	Constant	1.982	.142		14.001
	Collaborative Leadership	.230	.033	.337	6.933
	Unity of Purpose	.179	.031	.287	5.874
	Learning Partnership	.130	.036	.183	3.672
P4	Constant	1.797	.143		12.565
	Collaborative Leadership	.212	.032	.311	6.543
	Unity of Purpose	.153	.030	.245	5.077
	Learning Partnership	.090	.036	.126	2.521
	Teacher's Collaboration	.132	.028	.211	4.707

Dependent Variable: School Effectiveness, P=Predictable Variable

## 7.5 School Climate Factor that influence School Effectiveness

Table 7, shows that leadership, instruction, expectations and environment have significant beta ( $\beta$ ) values. This means that each of these variables explained the variance in school effectiveness significantly

after the influence of the other variables was statistically controlled through multiple regression analysis. Collaboration, involvement and order were not included in the regression model because these variables had  $\beta$  values that were too small and insignificant after the influence of other variables.

Table 7. The  $\beta$  Values of the School Climate Variables

<i>Dimension</i>	<i>Beta</i>	<i>Sig.</i>
<i>Leadership</i>	$\beta = .422^*$	.000
<i>Instruction</i>	$\beta = .182^*$	.000
<i>Expectations</i>	$\beta = .145^*$	.003
<i>Environment</i>	$\beta = .128^*$	.019
<i>Collaboration</i>	$\beta = .058$	.328
<i>Involvement</i>	$\beta = -.009$	.851
<i>Order</i>	$\beta = -.026$	.623

Note: Significant at level  $p < 0.05$

The results of the multiple regression analysis in table 8 and 9, showed that four school climate variables were included in the regression model according to significant  $\beta$  values. Leadership ( $\beta = .678$ ,  $p < 0.5$ ) contribute for a significant 46.0% ( $R^2 = .460$ ) variance change [ $F(1,351) = 298.779$ ,  $p < 0.5$ ]. The combination of leadership ( $\beta = .535$ ,  $p < 0.5$ ) and instruction ( $\beta = .276$ ,  $p < 0.5$ ) contribute for 51.5% ( $R^2 = .515$ ) variance change [ $F(2,350) = 186.196$ ,  $p < 0.5$ ]. Subsequent combinations of leadership ( $\beta = .485$ ,  $p < 0.5$ ), instruction ( $\beta = .206$ ,  $p < 0.5$ ) and expectations ( $\beta = .176$ ,  $p < 0.5$ ) accounted for 53.6% ( $R^2 = .536$ ) variance change [ $F(3,349) = 134.195$ ,  $p < 0.5$ ]. Finally, the combination of leadership ( $\beta = .435$ ,  $p < 0.5$ ), instruction ( $\beta = .177$ ,  $p < 0.5$ ), expectations ( $\beta = .139$ ,  $p < 0.5$ ) and environment ( $\beta = .147$ ,  $p < 0.5$ ) accounted for 54.8% ( $R^2 = .548$ ) variance change [ $F(4,348) = 105.530$ ,  $p < 0.5$ ]. The regression equation is given as follows:

$$Y = 1.375 + 0.353_1 + 0.128_2 + 0.098_3 + 0.113_4$$

The results of the stepwise multiple regression analysis showed that the P4 regression model (leadership, instruction, expectations and environment) contributed 54.8% ( $R^2 = .548$ ) of the variance in school effectiveness [ $F(4,348) = 105.530$ ,  $p < 0.5$ ]. Leadership influence ( $\beta = .435$ ,  $p < .05$ ) was highest, followed by instruction ( $\beta = .177$ ,  $p < .05$ ), environment ( $\beta = .147$ ,  $p < .05$ ) and expectations ( $\beta = .139$ ,  $p < .05$ ). School climate contributes to predicting school effectiveness in National Schools.

Table 8. Linear regression predictor of School climate

<b>Model</b>	<b>R</b>	<b>R<sup>2</sup></b>	<b>^R<sup>2</sup></b>	<b>df</b>	<b>F</b>	<b>Sig.</b>
Leadership	.678	.460	.458	1 351 352	298.779	.000
Instruction	.718	.515	.513	2 350 352	186.196	.000
Expectations	.732	.536	.532	3 349 352	134.195	.000
Environment	.740	.548	.543	4 348 352	105.530	.000

Note: Significant at level  $p < 0.05$

Table 9. Coefficient Values for School Climates Factor as Predictor

Model	Variable	B	Std.Error	Beta	t
P1	<i>Constant</i>	2.006	.132		15.228
	Leadership	.551	.032	.678	17.285
P2	<i>Constant</i>	1.633	.138		11.834
	Leadership	.434	.035	.535	12.293
	Instruction	.199	.031	.276	6.342
P3	<i>Constant</i>	1.485	.141	.	10.556
	Leadership	.394	.036	.485	10.880
	Instruction	.149	.033	.206	4.465
	Expectation s	.124	.032	.176	3.891
P4	<i>Constant</i>	1.375	.143		9.586
	Leadership	.353	.038	.435	9.278
	Instruction	.128	.034	.177	3.803
	Expectation s	.098	.033	.139	3.012
	Environmen t	.113	.036	.147	3.100

Dependent Variable: School Effectiveness, P=Predicable Variable

## 7.6 School Culture and Climate that influence School Effectiveness

Table 10. shows that both school culture and climate have significant beta ( $\beta$ ) values. This means that each of these variables explained the variance in school effectiveness significantly after the influence of the other variables was statistically controlled through multiple regression analysis.

Table 10. The  $\beta$  values of the School culture and School climate

Variable	Beta	Sig.
School culture	$\beta = .399^*$	.000
School climate	$\beta = .367^*$	.000

Note: Significant at level  $p < 0.05$

The results of the multiple regression analysis in table 11 and 12 shows that school culture variables and school climate are included in the regression model. School culture ( $\beta = .689$ ,  $p < 0.5$ ) contributed significantly to 47.4% ( $R^2 = .477$ ) variance change [ $F(1,351) = 316.610$ ,  $p < 0.5$ ]. The combination of school culture ( $\beta = .399$ ,  $p < 0.5$ ) and school climate ( $\beta = .367$ ,  $p < 0.5$ ) significantly contributed 52.5% ( $R^2 = .525$ ) of the variance change [ $F(2,350) = 193.511$ ,  $p < 0.5$ ]. The regression equation is given as follows:

$$Y = 1.282 + 0.352_1 + 0.370_2$$

The results of the stepwise multiple regression analysis showed that school culture influence ( $\beta = .399$ ,  $p < .05$ ) higher than School climate ( $\beta = .367$ ,  $p < .05$ ). This model contributes to predicting 52.5% impact of school culture and climate on school effectiveness.

Table 11. Linear regression predictor of School culture and School climate

Model	R	R <sup>2</sup>	<sup>^</sup> R <sup>2</sup>	df	F	Sig.
School culture	.689	.474	.473	1 351 352	316.610	.000
School climate	.725	.525	.522	2 350 352	193.511	.000

Note: Significant at level  $p < 0.05$

Table 12. Coefficient Values of School Culture and School Climate

Model	Variable	B	Std.Error	Beta	t
P1	Constant	1.721	.144		11.953
	School culture	.608	.034	.689	17.794
P3	Constant	1.282	.155		8.295
	School culture	.352	.053	.399	6.662
	School climate	.370	.060	.367	6.123

Note:  $p < 0.05$ , Dependent Variable: School Effectiveness

## 8.0 DISCUSSION

This study was carried out to determine the relationship between school culture and climate in National schools and investigate the influence of school culture factors and school climate factors on school effectiveness. The analysis reveal that there is significant relationship between school culture and school climate. The null hypothesis was rejected and alternative hypothesis was accepted which is there is positive significant relationship between school culture. This study explain that the school culture and climate contribute for school effectiveness at National school. The correlation test showed a significant relationship between two variables and all dimensions that are school culture and climate in the primary National schools.

The regression model with collaborative leadership, unity of purpose, learning partnership and teacher's collaboration which is school culture dimensions are contributed for 47.0% changes in variance of school effectiveness. The null hypothesis was rejected and alternative hypothesis was accepted which is there is positive significant linear relationship between school culture and school effectiveness. Its reveal that there is other factor which is effect the school effectiveness (Xiaoju Duan, Xiangyun Du, & Kai Yu, 2018).

For the school climate variable regression model with leadership, instruction, expectations and environment contribute 54.8% changes in variance of school effectiveness. The null hypothesis was rejected and alternative hypothesis was accepted which is there is positive significant linear relationship between school climate and school effectiveness. School climate contributes to predicting school effectiveness in primary National schools.

In conclusion, the school culture and climate variables contributes to predicting the impact on school effectiveness as found Maxwell & Ross Thomas (1991). All the combination of school culture and climate dimensions are correlate with each other. The both school culture and climate are very important factor that in order to sustain school effectiveness as found by Bellibas & Yan Liu (2018).

Collaborative leadership, unity of purpose, learning partnership and teacher's collaboration are the school culture factors that should focus by school management to enhance ethos among staff. The leadership, instruction, expectations and environment also among school climate factors that must develop equally to provide better atmosphere for school effectiveness in entire nation.

## ACKNOWLEDGEMENT

The researchers also like to acknowledge the Ministry of Education (MOE) and Universiti Putra Malaysia for the financial funding on this research through Grant Putra (GP/2018/9636700) for Research University Grant (RUG)

## REFERENCES

- Abdul Manaf & Che Mohd Zulkifli (2016). Improvement School Effectiveness through Culture and School climate. *The International Journal of Social Sciences and Humanities Invention*, 4(2), 3289-3298.
- Angus J. MacNeil, Doris L. Prater & Steve Busch (2009) The effects of School culture and climate on student achievement. *International Journal of Leadership in Education*, 12(1), 73-84.
- Barro, N.N. (2015). The mediating role of School climate on the relationship between cognitive emotional regulation and classroom disposition of retireable public school teachers. *International Journal of Advancements in Research & Technology*, 4(10), 91-101.
- Bates, R.J. (1987). Corporate Culture, Schooling and Educational Administration. *Educational Administration Quarterly*, 23(4), 79-115.
- Bellibas M. & Liu Y. (2018). The effects of principals' perceived instructional and distributed leadership practices on their perceptions of School climate. *International Journal of Leadership in Education*, 21(2), 226-244.
- Carpenter, D. (2015). School culture and leadership of professional learning communities, *International Journal of Educational Management*, 29(5), 682-694.
- Chua, Y. P. (2009). *Research Method* (5th ed.). Kuala Lumpur: McGraw-Hill.
- Clarke, J., Hall, S., Jefferson, T. & Roberts, B. (1976). Subcultures, Cultures and Class: a Theoretical Overview, in S. Hall and T. Jefferson (eds) *Resistance Through Rituals: Youth Subcultures in Post War Britain*, London: Hutchinson.
- Cohen, J., McCabe, L., Michelli, N. M., & Pickeral, T. (2009). School climate: Research, policy, practice, and teacher education. *Teachers College Record*, 111, 180-213.
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Upper Saddle River, NJ: Merrill.
- Glisson, C. (2007). Assessing and changing organizational culture and climate for effective services. *Research on Social Work Practice*, 17, 736-747.
- Glisson, C., & Green, P. (2006). The effects of organizational culture and climate on the access to mental health care in child welfare and juvenile justice systems. *Administration and Policy in Mental Health and Mental Health Services Research*, 33, 433-448.
- Glisson, C., & Green, P.D. (2011). Organizational climate, services and outcomes in child welfare systems. *Child Abuse & Neglect*, 35, 582-591.
- Gonder, P. O., & Hymes, D. (1994). *Improving School climate and culture: AASA critical issues report*. Virginia: American Association of School Administrators.
- Gruenert, S. (1998). *Development of a School culture survey*. Doctoral dissertation, University of Missouri – Columbia, 1998.
- Gruenert, S. (2000). Shaping a new School culture. *Contemporary Education*, 71(2), 14-17.
- Hall, G., & Hord, S. (2015). *Implementing change patterns, principles, and potholes* (4th ed.). Upper Saddle River, NJ: Person Education.
- Hargreaves D.H. (2001). A Capital Theory of School Effectiveness and Improvement. *British Educational Research Journal*, 27(4), 487-503.
- Lewis J., Asberry J., DeJarnett G. & King G. (2016). The Best Practices for Shaping School culture for Instructional Leaders. *Alabama Journal of Educational Leadership*, 3, 57-63.
- Mehmet Sukru Bellibas & Yan Liu (2018). The effects of principals' perceived instructional and distributed leadership practices on their perceptions of school climate. *International Journal of Leadership in Education*, 21(2), 226-244.
- Patterson, D.A., Dulmus, C.N., & Maguin, E. (2012). Empirically supported treatment's impact on organizational culture and climate. *Research on Social Work Practice*, 22(6), 665-671.
- Patterson Silver Wolf, D. A., Dulmus, C. N., Maguin, E., & Critalli, M. (2014). Do organizational culture and climate matter for successful client outcomes? *Research on Social Work Practice*, 24(6), 670-675.
- Ross, S. M., & Lowther, D. L. (2003). Impacts of the Co-nect School Reform Design on classroom instruction, School climate, and student achievement in inner-city schools. *Journal of Education for Students Placed at Risk*, 8(2), 215-246.

- T.W. Maxwell, A. Ross Thomas, (1991). School Climate and School Culture. *Journal of Educational Administration*, 29(2), 72-82.
- Wang, M. C., Haertel, G. D. & Walberg, H. J. (1997). Learning influences, in: H. J. Walberg and G. D. Haertel (eds) *Psychology and Educational Practice* (Berkley, CA: McCuthan), 199-211.
- Xiaoju Duan, Xiangyun Du, & Kai Yu. (2018). School culture and School Effectiveness: The Mediating Effect of Teachers' Job Satisfaction, *International Journal of Learning, Teaching and Educational Research*, 17(5), 15-25.



# Higher Education Aspirations and Barriers among Malaysian Students from Low-Income Families: Development of a Conceptual Framework

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## ABSTRACT

*Most developing countries have realized the importance of education for upward social mobility and economic growth. An individual's social status can change from one social class to another as higher education brings higher wages, better job prospects and quality of life. The decision to pursue further education after finishing secondary schools, however, requires consideration of many choices as there are thousands of higher institutions from which to choose. Economic (monetary) and individual, social and culture factors are more likely to influence the decision-making process. This includes the weight they give to economic and social benefits of attending college, the material constraints they experience (e.g., fees, travel) in view of their socio-economic backgrounds, and assessment of their academic ability and academic record. One or more of these factors may hinder their aspirations for higher education. This paper, therefore, aimed at identifying barriers inhibiting higher education aspirations among students from low-income families. The findings from literature review were then used to illustrate a proposed conceptual framework that shows several barriers to higher educational aspirations faced by students from low-income families in Malaysia.*

**KEYWORDS:** Low-income students; Higher education; Conceptual framework; Barriers

## 1.0 INTRODUCTION

People's aspirations for education tend to grow as the economy expands. A growing commitment to education is increasing among young people as well as adults. More and more parents realize the importance of obtaining the best education possible for their children and sending them to more academic schools and later higher institutions. An individual's social status can change from one social class to another as higher education brings higher wages, better job prospects and quality of life (Nazimuddin, 2014; Arifin, 2017; Wu, 2017). Ultimately, there could be a reduction and eventually an end to global poverty, and also greater social equity in education. Greater equity should promote economic growth, as rising levels of education contribute to rising consumer demand.

Enrolment trends in higher education are evidence of growing educational demand amongst all Malaysian population. As the economy continues to grow, people are investing more in knowledge and skills required by emerging job opportunities. While the economy is driving aggregate growth in educational participation, social advantage or disadvantage influences which individuals will benefit more (Conner et al. 2001). Wealthy parents are able to spend very large amounts of money sending their children to the best educational institutions for better academic programs. Disadvantaged groups, on the other hands, are under pressure to pursue further education (Willingham, 2012).

## 2.0 PROBLEM STATEMENT

Students from socio-economic backgrounds often have low educational aspirations (Senin & Ng, 2012; Tafere, 2015). Their parents may also have low expectations and aspirations for them. Since many of these parents have low education levels and live in poor circumstances, their children are more likely to prioritise work over higher education (Bland, 2016). For them, higher education is often accompanied by heavy financial burden and a loss of income for the family. A study by Wolf (2007) found that students with college-educated parents were twice as likely to participate in higher education. Those who declined to participate were more likely to come from families who did not value education and had never talked to their children about college.

## 3.0 AIMS AND OBJECTIVES

The aim of this study was to develop a conceptual framework regarding the barriers to higher educational aspirations among low-income upper secondary school students in Malaysia. This aim was

achieved through accomplishing the following objectives: identifying the barriers to higher educational aspirations among low-income upper secondary school students in Malaysia; testing the relationship each of these barriers to higher educational aspirations; and finally, testing the significant difference of educational aspirations based on gender, location, academic achievement.

#### **4.0 LITERATURE REVIEW**

Students who grow up in educated homes enjoy cultural advantages, in that they normally aspire to go to university, whereas, students from lower-income backgrounds often have low educational aspirations.

Sheehy-Skeffington and Rea (2017) highlights “poverty has been attributed to a lack of ambition, aspiration or the correct mindset”. For them, the opportunity cost of pursuing and investing higher education outweighs all other priorities in their lives. Students from well-to-do families have more chances to take up places and gain greater access to high-quality higher institutions. According to literature review, there are many barriers to higher education aspirations faced by students from low-income families, which can be identified as economic, social, individual, and cultural.

##### **4.1 Financial Constraint**

Economic or financial constraint is the major barrier to higher education for middle and low SES groups (Friesen & Purc-Stephenson, 2016; Finnie et al., 2015; Gallup-Lumina Foundation, 2014; Mullen, 2010; Gorard et al, 2006; O'Mahony, & Sillitoe, 2001; Brezovsky & Silvernail, 2000). They do not have the ability to pay for the high cost of education due to financial constraints. In addition, this group of people may lack of information on financial aid opportunities. They do not know where to seek information on available financial aid and the application process. Teran (2007), in his study on financial barriers, found that students with financial aid knowledge are 95 percent more likely to attend college. He also pointed out that “understanding financial aid programs is essential. Without knowledge and access to financial aid programs, students face an enormous challenge.” The situation is worse if the students are the first in their generation to go to college. A decision to take financial aid means debt on graduation. Consequently, students are in a dilemma between incurring direct and indirect costs of higher education, and the opportunity cost of not participating. Thus, the presence of debt aversion would be a barrier to dampen their aspirations.

##### **4.2 Social factors**

Social factors may also be acting as barriers to higher education aspirations which can take a variety of forms. Family influencing factors may range from parents' educational and income background as well as support and assistance (Friesen & Purc-Stephenson, 2016; Prakhov, 2015; Othman yet al., 2013; Gutman & Akerman, 2008; Strand & Winston, 2008; Chenoweth & Gallier, 2004; Odeja & Flores, 2008; Marjoribanks, 2002). Families may not encourage aspirations, in part because of the loss of income or increased costs connected with higher education. Since many of these parents have low education levels, they are more likely to come from families who did not value education and had never talked to their children about college. One reason for this is that low-income parents often do not have sufficient information and understanding about higher education (Bueshel, 2004) and they are not able to provide educational experience to their children. In addition to lack of parental support, the school environment is not motivating the students as teachers and school counsellors do not expose, motivate, guide and also provide them the clear path to success after high school (Guerrero, 2016; Othman et al., 2013; Teran, 2007; Brezovsky & Silvernail, 2000).

##### **4.3 Individual's Self-esteem**

Individual factor also have impact on student persistence and success in higher education (Othman et al., 2013; Mullen, 2010; Gutman, & Akerman, 2008; Teran, 2007; Brezovsky & Silvernail 2000). Many high school students are not fully prepared for academic challenges at high levels. They do not perform well in the examinations and do not complete certain courses that are necessary for college. In addition to

that, they feel less confident in their ability to be academically competitive and successful which eventually leading to lower higher education aspirations.

#### 4.4 Cultural Factors

Young people living in rural communities experience conflict between deciding to stay in the community in which they grew up or move out from that community to pursue a college education. Rural males are less likely to aspire to and pursue college education than rural females (Friesen & Purc-Stephenson, 2016; Grimard & Maddaus, 2004). A research by Rodriguez (2000) on Latino participation in higher education in the United State indicated children from lower socioeconomic backgrounds often come to school with “cultural capital” that contrasts with the institutional setting. Cultural capital includes implicit and internalised beliefs and values, including attitudes and perceptions towards education.

### 5.0 METHODOLOGY

This study was designed according to the quantitative research guidelines, which employ statistical analysis techniques to interpret meaning. Correlational method will be used to assess the relationships that may exist between variables using survey questionnaires as a tool for data collection. The main purpose is to confirm hypotheses and to measure the strength of relationship between independent and dependent variables. In addition, t-test is used to compare dependent variables according to gender, location and academic achievement. The collected data will be analysed using SPSS.

### 6.0 CONCEPTUAL DEVELOPMENT

Based on the research problem, extensive literature review and relevant related theories, this study proposes a conceptual framework as illustrated in Figure 1.

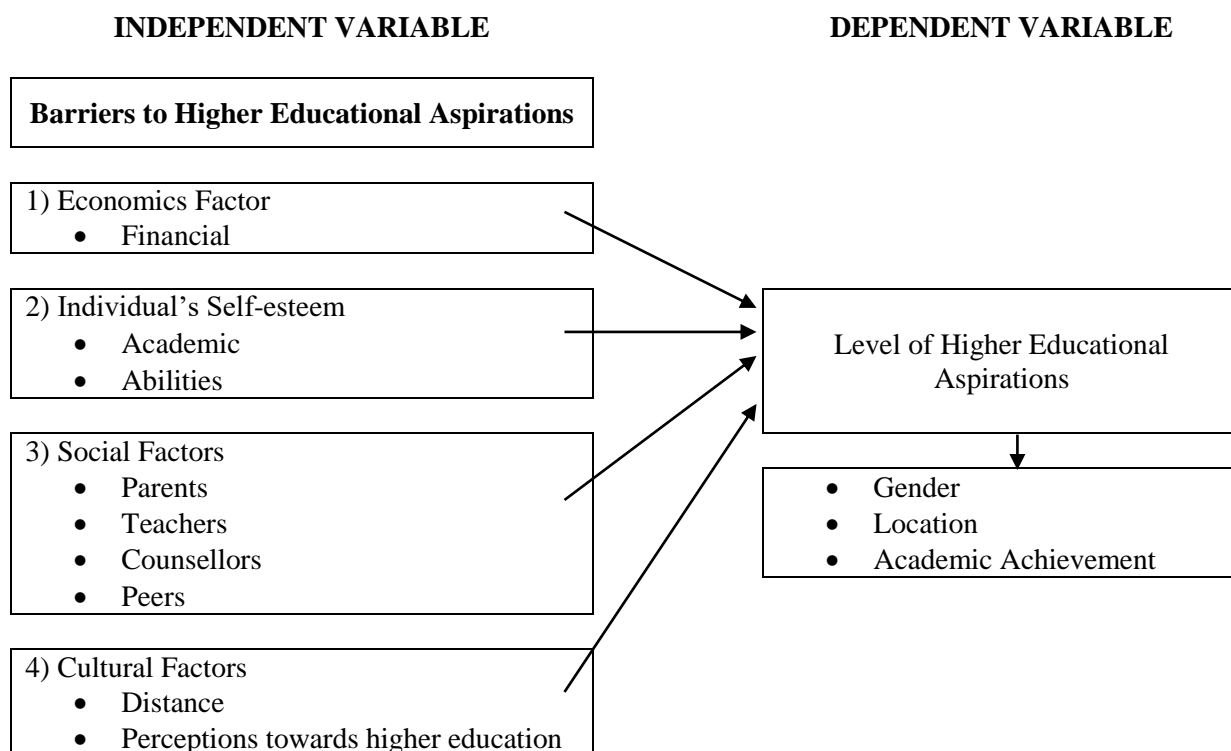


Figure 1: A proposed conceptual framework on barriers to higher educational aspirations among low-income upper secondary school students in Malaysia.

This framework comprises of two fractions, independent, and dependent variables. The independent variables under the barriers to higher educational aspirations include economic, social, individual and

cultural factors. The dependent variables, on the other hand, is the level of higher educational aspirations among low-income upper secondary school students in Malaysia. For the purpose of this study, differences based on gender, location and academic will be determined, as well as the relationship between each independent variable and dependent variable.

## 7.0 CONCLUSION AND RECOMMENDATION

The main objective of the study was to examine the barriers to higher educational aspirations among low-income upper secondary school students in Malaysia. This study has revealed all barriers that would inhibit disadvantaged upper secondary school students to pursuing aspirations and accessing higher educational institutions in Malaysia. Four main barriers that have been identified are economic, social, individual and cultural factors. Thus, Kurt Lewin's Psychological Field Theory is most likely suitable to explain that behaviour is the result of the current 'life space' of an individual which forces push or pull a person towards their goal. For instance, students from disadvantaged groups may feel discouraged, incompetent and uninspired due to the difficult pathway. Towards the end, they form their own belief that higher education is not their top goal in life.

## REFERENCES

- Arifin, M. H. (2017). The Role of Higher Education in Promoting Social Mobility in Indonesia. *European Journal of Multidisciplinary Studies*, 2(6), 233-241.
- Barry O'Mahony, G., & Sillitoe, J. F. (2001). Identifying The Perceived Barriers to Participation in Tertiary Education Among Hospitality Employees. *International Journal of Contemporary Hospitality Management*, 13(1), 21-29.
- Bland, B. The students with no support network. Retrieved from <https://www.timeshighereducation.com/blog/students-no-support-network>.
- Brezovsky, S. H., & Silvernail, D. L. (2000). Types of Barriers Maine High School Students May Face in Fulfilling Post-Secondary Educational Aspirations. Center for Education Policy, Applied Research, and Evaluation, University of Southern Maine.
- Chenoweth, E., & Galliher R. V. (2004). Factors Influencing College Aspirations of Rural West Virginia High School Students. *Journal of Research in Rural Education*, 19(2), 1-14.
- Connor, H., Dewson, S., Tyers, C., Eccles, J., Regan, J., & Aston, J. (2001). Social class and higher education: Issues affecting decisions on participation by lower social class groups. Institute of Employment Studies.
- Finnie, R., Wismer, A., & Mueller, R.E. (2015). Access and barriers to postsecondary education: Evidence from the youth in transition survey. *Canadian Journal of Higher Education*, 45(2), 229-262.
- Friesen, L., & Purc-Stephenson, R. J. (2016). Should I Stay or Should I Go? Perceived Barriers to Pursuing a University Education for Persons in Rural Areas. *Canadian Journal of Higher Education*, 46(1), 138-155.
- Gallup-Lumina Foundation. (2014). Postsecondary education aspirations and barriers: The 2014 Gallup-Lumina Foundation study of the American public's opinion on higher education.
- Gorard, S., Smith, E., May, H., Thomas, L., Adnett, N. & Slack, K. (2006). Review of widening participation research: addressing the barriers to participation in higher education. A report to HEFCE by the University of York, Higher Education Academy and Institute for Access Studies. Retrieved from <http://www.ulster.ac.uk/star/resources/gorardbarriers.pdf>
- Grimard, A & Maddaus, J. (2004). Overcoming Obstacles to Preparing for College: Perspectives from a Rural Upwa. *The Rural Educator*, 25, 30-37.
- Guerrero, G., Sugimaru, C., Cussianovich, A., De Fraine, B., & Cueto, S. (2016). Education Aspirations among Young People in Peru and their Perceptions of Barriers to Higher Education. Retrieved from <http://repositorio.minedu.gob.pe/handle/123456789/4527>.
- Gutman, L. M., & Akerman, R. (2008). *Determinants of aspirations*. London: Centre for Research on the Wider Benefits of Learning.
- Marjoribanks, K. (2002). Family Background, Individual and Environmental Influences on Adolescents' Aspirations. *Educational studies*, 28(1), 33-46.

- Mullen, F. (2010). Barriers to widening access to higher education. Working paper No. 10.
- Nazimuddin, S. K. (2014). Social Mobility and Role Of Education In Promoting Social Mobility. *International Journal of Scientific Engineering and Research*, 1-4.
- Ojeda, L., & Flores, L. Y. (2008). The Influence Of Gender, Generation Level, Parent's Education Level, And Perceived Barriers On The Educational Aspirations Of Mexican American High School Students. *The Career Development Quarterly*, 57(1), 84-95.
- Othman, N., Nordin, F., Nor, N. M., Endot, Z., Azmi, A., Ismail, I., & Yaakob, A. (2013). Factors Influencing Students' Academic Aspirations in Higher Institution: A Conceptual Analysis. *Procedia-Social and Behavioral Sciences*, 90, 411-420.
- Prakhov, I. (2015). Barriers Limiting Access to Quality Higher Education in the Context of the USE: Family and School as Constraining Factors. *Educational Studies*, (1), 88-117.
- Rodríguez, Clara E. (2000). *Changing race: Latinos, the census, and the history of ethnicity in the United States*. New York: New York University Press.
- Senin, N., & Ng, I. Y. (2012). Educational Aspirations of Malay Youths from Low-Income Families in Singapore. *Asia Pacific Journal of Social Work and Development*, 22(4), 253-265.
- Sheehy-Skeffington, J., & Rea, J. (2017). *How Poverty Affects People's Decision-making Processes*. York: Joseph Rowntree Foundation.
- Strand, S., & Winston, J. (2008). Educational Aspirations in Inner City Schools. *Educational Studies*, 34(4), 249-267.
- Tafere, Y. (2015). Educational Aspiration of Students in Developing World: Evidence from Ethiopia. *The Aspirations in Action Journal*.
- Teran, C. J. (2007). *Studies on Barriers to Higher Education in Texas*. A research study conducted by the Department of Student Financial Aid at Texas A&M University. Retrieved from <http://www.tgsalc.org/pdf/StudiesonBarriers.pdf>
- Willingham, D. T. (2012). Ask the Cognitive Scientist: Why Does Family Wealth Affect Learning? *American Educator*, 36(1), 33-39.
- Wolf, L. A. (2007). *A Mixed Method Study of Rural Iowa Latino High School Students to Determine Barriers to Access*. ProQuest.
- Wu, X. (2017). Higher Education, Elite Formation and Social Stratification in Contemporary China: Preliminary Findings from the Beijing College Students Panel Survey. *Chinese Journal of Sociology*, 3(1), 3-31.

## Measuring Class Teacher's Perceptions of Revised Parental Involvement Scale

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### ABSTRACT

*This study aims to validate an integrative Parental Involvement scale based on theory and parental involvement research using rigorous scale validation procedures. An adapted questionnaire with 20 items was administered to 506 secondary class teachers to measure their perceptions towards facilitating parental involvement in secondary schools. Data were examined by performing exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) using SPSS 23.0 and AMOS 23.0 software, respectively. The findings supported Parental Involvement as a multidimensional construct with its three underlying dimensions: school-home interaction, school-based involvement, and home-based involvement. Only a handful of research-based studies probed into Parental Involvement scale as a multi-dimensional construct in secondary schools within the Malaysian context. Therefore, a validated Parental Involvement scale with 15 items measures the nature of parental involvement in secondary schools, which can be proposed to be used as an evaluative tool for schools that are interested in assessing parental involvement and the effects of various programs, such as SARANA Sekolah, that target the three dimensions of parental involvement measured. The Parental Involvement scale would also foster the identified factors that influence the role of parents in schools and school effectiveness. The practical implications, methodological limitations, and future recommendations are discussed.*

**KEYWORDS:** Parental involvement, Scale validation, Exploratory factor analysis, Confirmatory factor analysis, Class teacher's perceptions

## 4.0 INTRODUCTION

Home-school partnership was identified as one of the key elements of school effectiveness research (SER) and students' academic success (Scheerens, 2013; Shannon & Blysmas 2007). It has been highlighted that parental involvement in school increases the level of child's ability and independence in studies, creates a sense of security, and facilitates school to instill the value of education in their schooling years (Ellis, Morgan, & Reid, 2013; Kandasamy et al., 2016; Hill & Tyson, 2009). Scholars also suggested that teachers and principals should view parental involvement in new ways to execute a focused and intended partnership programs that facilitate a welcoming environment by connecting parents in activities that aid students' academic achievement, develops positive mind-sets and good manners (Ahmad et al., 2016; Castro et al., 2016; Jeynes, 2016). Furthermore, parents and schools very much have the right set of circumstances to build partnership and work collaboratively (Gálvez & Tarrés, 2017; Hornby, 2011; Mohd Radzi, Abd Razak, & Mohd Sukor, 2010). Therefore, the concept of parental involvement in recent years has generated high interest among educational researchers because of its pervasiveness in schools.

Consequently, parental involvement in secondary schools shares the primary goal of enhancing adolescent's academic performance in the direction of his or her career choices. Further, it becomes increasingly difficult to develop strategies for changing adolescents' social and academic behaviours without involving parents directly in the change process. Therefore, the initiatives and meaningful partnerships between school and parents will encourage parents to cooperate eloquently with the school in helping their children develop to their full academic and social potential. As a result, schools should invest more effort in promoting parental involvement to optimize student outcomes (Gálvez & Tarrés, 2017; Hamlin & Flessa, 2016; Said, Ahmad, Tahir, Ahmad, & Hassan, 2013). Interestingly, the level of effort exerted by the schools in promoting parental involvement are reflected by school and teachers cooperation

with parents and activities or initiative programs as pointed out in literature (e.g., Epstein et al., 2009; Gálvez & Tarrés, 2017; SARANA *Sekolah*, 2013).

Importantly, this point of view leads the primary interest of this study to discover the construct of Parental Involvement. Nevertheless, past studies on Parental Involvement scale are found mostly relied on Western samples (e.g. Epstein et al., 2009; Fantuzzo, McWayne, & Perry, 2004; Lazaridou & Kassida, 2015). In addressing this constraint, this study aims to put efforts to synthesize Parental Involvement as a multidimensional construct, followed by the validation of Parental Involvement scale with a sample of Malaysian secondary school class teachers. The measures of Parental Involvement scale are validated through performing exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) procedures. The prominence of this empirical study contributes towards the knowledge in Parental Involvement literature in Malaysia educational settings.

#### **4.1 Parental Involvement in Malaysian Context of Study**

Past studies mentioned that parental involvement influences students' academic achievement and personality development (Berkowitz et al., 2017; Ellis, Morgan, & Reid, 2013). Remarkably, studies in Asian countries reported that the quality of parental involvement and supervision will have a positive effect on adolescent academic performance (Ahmad et al., 2016; Castro et al., 2015; Kabir & Akter, 2014; Ng & Tan, 2017, Yonson, 2016) and parental guidance is the key to success in school (Jabar, 2010). In Malaysia, at present, the involvement of parents in school channelled through Parents Teachers Association (PTA) and the parents have little influence to express opinions or initiatives in parallel with school's vision. Moreover, the intensity of school-parent partnership is not given much importance (Simon, 2017; Kandasamy et al., 2016) and it is still at a minimum level. Zakaria and Mohd Salleh (2011) also claimed that there are less supportive form parents although the PTA has been established at every school.

Conversely, studies in Malaysia done by Ahmad et al. (2016); Simon (2017); Kandasamy et al. (2016); Mahamud, Che Hassan, and Mohd Fakhruddin (2018); Mohd Radzi, Abd. Razak, and Mohd Sukor (2010); Reduan, 2008; and Rode and Wong (2016) indicated that schools seemed to involve parents more in activities such as informing their child's misconduct, collecting report card, and requesting parents for donations and funds. Past studies have pointed out that parental involvement has the tendency to decline throughout middle and secondary schools (Mahamud, Che Hassan, & Mohd Fakhruddin, 2018; Rode & Wong, 2016) as the parents feel less confidence as the subject matters become more challenging (Rode & Wong, 2016; Zakaria & Mohd Salleh, 2011), schools are not welcoming (Ahmad et al., 2016; Simon, 2017; Zakaria & Mohd Salleh, 2011) and adolescents are attempting to become more independent (Reduan, 2008; Rode & Wong, 2016). Accordingly, Aziz (2016) conducted a survey by the Programme for International Student-Assessment (PISA) claimed that basically, teachers initiate the participation of parent in school activities and not by parents as parents view their role of involvement only to discuss their child's academic performance. Therefore, school and parents need to recognize the importance of their distinctive role in improving the disputes related to education. In spite of this, a lot of studies have been conducted on students' achievement but little concentration was given to the subject of parental involvement in schooling.

### **5.0 LITERATURE REVIEW**

#### **5.1 Parental Involvement**

Parental involvement also has been studied under various terms. The term is widely used synonymously as parental engagement, family engagement, parent-school involvement, family-school partnerships, and teacher-family partnerships among the educationist, theorists and practitioners (Epstein et al., 2009; Povey et al., 2016; Smith et al., 2011). Similarly, some researchers labelled parental involvement as home-school partnership, parents as partners and parental participation (Ellis, Morgan, & Reid, 2013). The parental involvement term also extended to school, family, and community partnership to emphasize on the integration of these three influential contexts in every facet of the academic growth of the children (Gálvez & Tarrés, 2017; Epstein et al., 2009). Nevertheless, the significance of parental involvement in support of students from all ages has been widely acknowledged by numerous researchers, practitioners, and policymakers, no matter what type of terminology emanated from the literature (Hornby, 2011; Povey et al., 2016; Jeynes, 2011).

The concept of school-family partnership reverberate from Gordon's idea in year 1969 that school and parents contribute equal role in education (Jennifer, 1999). Both parties share their role and ownership

based on their responsibilities. Parental involvement can occur in many forms, such as communicating with teachers, helping with school homework, volunteering at school and participating in school's functions (Epstein et al., 2009; Hamlin & Flessa, 2016; Hill & Taylor, 2009; Hornby & Witte, 2010; Reduan, 2008). According to the United States code of law, the term parental involvement means "the participation of parents in regular, two-way meaningful communication involving student academic learning and other school activities" (United States Department of Education, 2008, p. 23). In SARANA *Ibu Bapa* (2013) policy, parental involvement referred as parents' engagement with child by establishing home-based learning environment, participating in vigorous and vibrant communication and social interaction as well as supporting academic excellence.

## 5.2 Parental Involvement as a Multidimensional Construct

Parental involvement has been delineated in various ways by numerous scholars. Jeynes (2016; 2011) defined parental involvement as the participation of parents in their children's educational activities and life experiences. Povey et al., (2016) referred parental involvement as the activities, norms, characteristics and behaviour of parents to support their children's scholastic learning at school as well as at home. Jeynes (2018; 2011) equate parental involvement as a mixture of parents' commitment, active participation, and partnership collaboration with their child's school. Parental involvement referred to the extent and nature of parental involvement in both formal and informal educational experiences of their child (Fantuzzo, McWayne, & Perry, 2004). On the whole, the literature characteristically defines parental involvement as either supporting student scholastic learning or involving in school-initiated programs (Abdullah Hamid, Othman, Ahmad, & Ismail, 2011; Gálvez & Tarrés, 2017; Hamlin & Flessa, 2016; Jennifer, 1999; Lazaridou & Kassida, 2015; Reduan, 2008).

The existing literature also has depicted parental involvement based on the location of the activities occurs, either at home or at school or outside the school compound (Barton et al., 2004; Fisher, 2016; Smith et al., 2011). Fisher (2016) categorised parental involvement as individual parents' actions based on their activities carried out within and outside school compounds. Fisher's research also contributed to a three facet chart which classifies parental involvement into four quadrants, i.e., Facet A: activities within and outside the school grounds, Facet B: student and organizational level and Facet C: parents' activities (refer to Figure 1). The authors stated that this contexture does not underline any preference of one activity over the other and parents could be engaged concurrently in all four clusters, based on personal preferences, the school's preferences, or a combination of both.

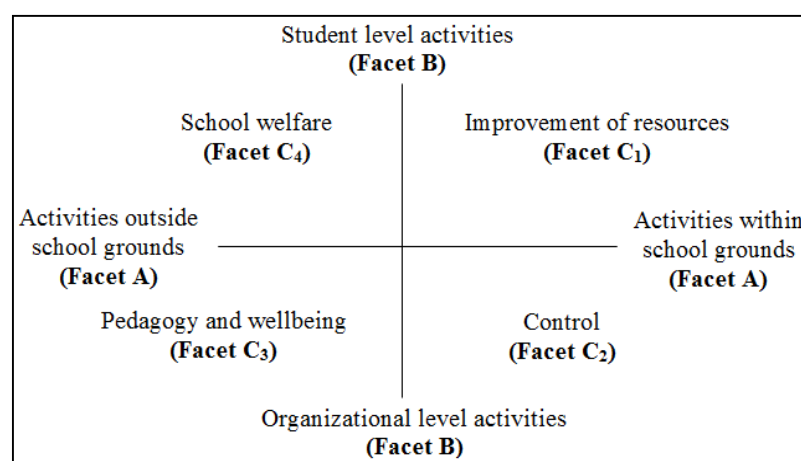


Figure 4: Categories of Parental Involvement (Adapted with permission from Yael Fisher. (2016). Parental involvement. In: Y. Fisher & I. A. Friedman (Eds.). *New horizons for facet theory: Interdisciplinary Collaboration Searching for Structure in Content Spaces and Measurement* (p. 140).

In fact, the evidence to back up a parental involvement model is still growing and many researches described the important of parental involvement mainly in three aspects, namely; (a) school-based activities, (b) home-based activities, and (c) school-home interaction (Fantuzzo, McWayne, & Perry, 2004; Punter, Glas, & Meelissen, 2016).



### 5.2.1 School-based Activities

According to Olsen and Fuller (2008), school-based activities for parental involvement is grounded in the ideas of parental involvement programs developed by the schools that are comprehensive and offer a variety of different types of involvement and acknowledges the diversity of parents served in the school. Epstein et al. (2009) also claimed that school based initiated activities not only focused on students' achievement but also includes the abilities of parents in following the process of cooperation as well as school administrators and teacher's skills in facilitating this process. Many scholars asserted that parents who are active in their child's school, the child will be positively engaged with learning and thus, improves their academic and social behaviours (Abdullah Hamid et al., 2011; Fantuzzo, McWayne, & Perry; Lazaridou & Kassida, 2015; Mohd Radzi, Abd Razak, & Mohd Sukor, 2010). As such, school-based activities is conceptualized as parents engagement with school activities, events, and programs.

### 5.2.2 Home-based Activities

Home-based activities for parental involvement seek to foster awareness in parents of the importance of the home learning environment in successful education (Ellis, Morgan, & Reid, 2013; Mahamud, Che Hassan, and Mohd Fakhruddin, 2018; Vellaymalay, 2012). This is supported by Đurišić and Bunijevac's (2017, p. 140) claim that parental involvement in their child's education initiates at home through "providing a safe and healthy environment, appropriate learning experiences, support, and a positive attitude about school". Olsen and Fuller (2008) asserted that home-based activities attempt to clarify for parents the values and objectives of formal education with information, instruction and guidance. As such, home-based activities for parental involvement conceptualized as parents' involvement and responsibility in student learning.

### 5.2.3 School-Home Interaction

Past researches have frequently highlighted the effect of communication between school and parents as part of school climate towards parental involvement (Bear et al., 2014; Epstein et al., 2009; Tana, 2014). Communication is an important comprehensible tool that links school and home. Mapp (2003, p. 56) stated that school administration especially school principal and teachers are required to communicate with parents in ways that "welcome them and demonstrate a sincere desire to include them in the life of the school". Communications within school and parents help to develop and exchange ideas. These enable teachers to listen to the concerns of parents about their child's performance (Gálvez & Tarrés, 2017; Khalid & Mohd Yasin, 2013; Omar & Esa, 2009; Simon, 2017; Zakaria & Mohd Salleh, 2011). Therefore, it is important for teachers to listen what parents have to say, to help them clarify their concerns or ideas. As such, school-home interaction is conceptualized as parents' initiatives to enhance their involvement through two-way communication channels between school and home.

Overall, these three dimensions are seen as an important element towards fostering parental involvement in secondary school settings. In this study, these three dimensions of Parental Involvement are used as a foundation to develop a measure of Parental Involvement scale. The conceptualization and operationalization of each dimension are exhibited in Table 1.

Most of the schools accept, and have put into practices, SARANA *Sekolah*'s (2013) guidelines and Epstein's six types of parental involvement practices for distributing information and making parents welcome. Parent-teacher associations, report card day, and regular letters for parents are commonplace. Yet a perusal of the literature reveals that the involvement of parental practices has tended to define depending on the locus of action, and the extent of both professional (school and parental) inputs (Jeynes, 2018; 2011; Hamlin & Flessa, 2016; Vellymalay, 2012; Zakaria & Mohd Salleh, 2011).

Table 1. Conceptualization and Operationalization of Parental Involvement.

Dimensions	Conceptualization	Operationalization
<b>School-based activities</b>	Measures “activities and behaviors that parents engage in at school to benefit their children” (Fan et al., 2004, p. 467).	The degree to which parents involved in school activities, events, and programs.
<b>Home-based activities</b>	Measures “behaviors reflecting active promotion of a learning environment at home for children” (Fan et al., 2004, p. 467).	The extent to which parents are involved in student learning.
<b>School-Home Interaction</b>	Measures “communication behaviors between parents and school personnel about a child's educational experiences and progress” (Fan et al., 2004, p. 467)	To what extent parents take initiatives to enhance their involvement through two-way communication channels between school and home.

Note: The term parents refer to anyone who is responsible for the welfare of the child and is actively involved in their education (SARANA Sekolah, 2013, p. 3)

## 6.0 METHODOLOGY

### 6.1.1 Sample

The target population is regular secondary school class teachers who are working in Peninsular Malaysia. Four states were selected from each region based on the highest number of secondary schools namely Perak, Selangor, Pahang and Johor. The class teacher sample was selected randomly using multistage cluster stratified sampling technique to ensure data representativeness and generalizability (Frankel, Wallen, and Hyun, 2012). The multistage cluster stratified sampling technique involved two levels of sample selection. At the school level, a sample was selected from Perak (13), Selangor (14), Pahang (11), and Johor (14) using proportionate stratified sampling procedure. At the teacher level, a consensus number of 10 teachers were selected from each school that represents from the four states using disproportionate stratified sampling procedure. This is supported by Brown (1967) and Reduan (2008) that a random selection of teachers' ranges four to ten in a school is sufficient to represent the thoughts and perceptions of the entire school. In sum, a total of 506 secondary class teacher samples were selected with a 97.31% of response rate. The sample represents into two sections with the first half of 133 for EFA and the second half of 373 for CFA.

### 6.1.2 Instrumentation

Parental involvement refers to the level of parents' involvement in school related activities to support students' attainment based on class teachers' perceptions. The Concept of School and Family Partnership: Parent Involvement instrument with 19 items was developed by Jennifer (1999) for primary schools based on Epstein's six types of parental involvement practices (Epstein, 1995; Epstein et al., 2009). Further, the items were modified and translated into 20 items based on the SARANA Sekolah (2013) and secondary school context based on the content validation with panel experts followed by pre-testing and pilot study. Items were developed to measure each dimension of Parental Involvement based on its operationalization and existing questionnaires as presented in Tables 1 and 2, respectively. Prior to EFA, five panel experts were invited to review the suitability of the items and followed by eight respondent-driven pre-tests the captured items that underlie the dimensions of Parental Involvement. The purpose is to ensure the readability and comprehensibility. The first six panel experts were lecturers from different disciplines in the local higher education institutions, and the latter three panel experts were school academicians. Panels' area of expertise's and positions are listed in Table 2.

Table 2. List of Panel Experts ( $n = 9$ ).

Raters	Position	Areas of expertise(s)	Remarks
A	Assoc. Prof.	School Administration and Policy	(Language & Content) Validation
B	Professor	Applied Linguistics, Psycholinguistics in Malay Language	(Language) Validation
C	Senior Lecturer	Educational Management and Leadership	(Content) Validation
D	Senior Lecturer	Educational management and leadership, School effectiveness and improvement, School well-being, psycho-educational assessment, quantitative research method, student learning assessment	(Content & Statistics) Validation
E	Professor	Educational Management and Administration	(Content) Validation
F	Professor	Information Systems, Operations Management, Marketing Management and Organizational Behavior, Structural Equation Modeling (SEM)	(Language & Statistics) Validation
G	Regular secondary school located in Selangor	Master Degree with 15 years' experience as school principal (since 2002 – 2016)	(Content) Validation
H	Ex-regular secondary school located in Selangor	Ph.D Degree and ex-form 5 and 6 school teacher and currently working at MoE.	(Content) Validation
I	National type secondary school located in Perak	Master Degree 15 years' experience as class teacher and awarded as “ <i>Guru Cemerlang</i> ” in year 2016.	(Content) Validation

Several items were refined terms of structure, grammar, and secondary school context based on the suggestions provided by the panels. For example, “Contact teachers via telephone, letters, etc to obtain information on child's performance in school” was improved as “Contact teachers via communication tools to obtain information on child's performance in school”. Accordingly, the problematic items were reviewed and modified based on the rater's comments. Further, few items were merged and split to avoid measuring similarity and double barrel issues. For instance, “Assist teachers as volunteers in out-of classrooms activities, such as organising workshops/ camps for the children during the semester holidays” were split into two items as “Involved together in training students in co-curriculum activities” and “Involved together in accompanying students participating in outdoor events”. Further, “Help teachers in planning classroom learning activities” and “Help teachers to adjust the curriculum according to the student's needs” were merged as “Involved together in implementing student academic excellence programs”. Overall, the initial 19 items were modified into 20 items based on SARANA *Sekolah* (2013) and Parental Involvement scale was formed. Additionally, a pre-test was conducted on five secondary school teachers prior to designing the questionnaire. This is to ensure the appropriateness of item with the content of the study, suitability of wordings, sequence of questions, and clear instruction. Further, this sample was omitted from the study. A set of questionnaire consist of Malaysian National language version with a 5-point Likert-type scale, ranging from 1 (*never involved*), 2 (*rarely involved*), 3 (*sometimes involved*), 4 (*often involved*), and 5 (*always involved*) was administered and validated by three panel experts as displayed in Table 2.

### 6.1.3 Data Collection Techniques

This study accentuated on the ethical matters towards maintaining privacy, anonymity, and confidentiality in line with the guidelines recommended by Creswell (2017). This is mainly to avoid and reduce discomfort, or stress among the participants. Hence, the participation of respondents was on a voluntary basis. Detailed instructions were provided to liaison person (Guru Penolong Kanan) and participants. This is to ensure that class teachers understand purpose of the survey and choices that were made when answering the questions. Importantly, the researcher secured permission from the respective authorities: (a) Education Planning Research Department, MoE, (b) Education directors of the states of Perak, Selangor, Pahang, and Johor, (c) Ethical approval from JKEUPM; (d) principals of the sampled

schools from the four states, and (e) participants. The completed questionnaires were returned using the addressed stamped envelope within 2 months.

## 7.0 DATA ANALYSIS PROCEDURES

This study employs two phases of analysis: (a) EFA and followed by (b) CFA. Data from the responded questionnaires were analysed using software of SPSS Version 23.0 and AMOS 23.0, respectively.

*Phase One.* The purpose of conducting EFA is to classify a smaller range of structured factors of Parental Involvement that is best described by its underlying items. Using SPSS Version 23.0, the uncorrelated extracted factors together with its eigenvalues which is greater than 1.0 were identified based on the principal components extraction method and varimax orthogonal rotation. Each underlying factors of Parental Involvement were reinterpreted to ensure the consistency of conceptual meaning designated by the corresponding items. Two statistical measurements were performed to scrutinize the underlying items obtained from each extracted factors based on the recommended cut-off value. The standardized factor loadings ( $\lambda$ ) should be .50 and above (Hair, Black, Babin, & Anderson, 2014). Meanwhile, the value for Cronbach's alpha is .70 and above (Nunnally, 1978).

*Phase Two.* According to Worthington and Whittaker (2006), CFA is performed after EFA to validate Parental Involvement scale based on convergent and discriminant validity. Convergent validity involves the degree to which individual items reflects a construct by sharing a high proportion of variance in common (Hair et al., 2014). Accordingly, Hair et al. (2014) opined that three statistical techniques can determine the convergent validity namely, (i) standardized factor loadings, (ii) average variance extracted (AVE), and (iii) construct reliability (CR) based on the recommended cut-off value. According to Hair et al. (2014), standardized factor loadings ( $\lambda$ ) should be .50 and above; which intend to measure the connexions between the variables and the factors whereas, AVE reflect a construct converging in comparison to items measuring different latent constructs in Structural Equation Modeling (SEM) by explaining at least 50 percent of the assigned indicators' variance ( $AVE \geq .50$ ). Similarly to Cronbach alpha, CR denotes to measure the reliability if the indicators, whereby its score should be above 0.7 to indicate adequate convergence or internal consistency (Gefen, 2000).

Discriminant validity specifies the degree in which indicators distinct across constructs as compared to other constructs (Hair et al., 2014). There are two ways of to assess discriminant validity: (i) cross-loading criterion; and (ii) Fornell-Larcker criterion. Cross-loadings criterion is the most common method used in assessing discriminant validity. This is done by measuring an indicator's outer loadings on the associate construct which should be greater than any correlation on other construct (Hair et al., 2014). Second approach is based on Fornell-Larcker criterion. Fornell-Larcker criterion is the more rigorous compared to cross-loadings criterion and ascertains if the square root of each construct's AVE should be greater that its highest correlation with any construct, then the discriminant validity achieved (Hair et al., 2014).

Model fit indexes were evaluated to determine whether the CFA model fits the data (Kline, 2011). The fit indices were guided by suggested cut-off criteria namely: Relative Chi-square ( $\chi^2/df$  ( $3.0 \leq \chi^2/df \leq 5.0$ ; Schumacker & Lomax, 2004); Goodness-of-Fit (GFI  $\geq 0.90$ ; Hu & Bentler, 1999); Comparative Fit Index (CFI  $\geq 0.90$ ; Hu & Bentler, 1999); and Tucker-Lewis index (TLI  $\geq 0.90$ ; Hu & Bentler, 1999).

## 8.0 FINDINGS

The items in this construct were developed by Jennifer (1999) and were adapted based on the context in SARANA Sekolah (2013). Furthermore, the items were refined based on panel experts' feedback and were pre-tested by four secondary school teachers and a school principal. The modified version of parental involvement instrument questionnaire comprised of 20 items used to measure three dimensions, namely, (i) Home-Based Activities; (ii) School-Based Activities; and (iii) School-Home Interaction.

### 8.1 Sample Characteristics

The proportion of female class teachers were quadruple than male class teachers (80.6% vs 19.0%) in the overall sample. Majority of the respondents were Malays (65.2%) followed by Indians (5.3%), Chinese (5.1%), and those of other ethnic groups (1.6%), respectively. Most of the respondents also had

served in their current school for more than ten years had ( $n = 320$ , 63.2%). Most of them are class teachers for Form 5 ( $n = 115$ , 22.7%) and Form 4 ( $n = 107$ , 21.1%). Only 2.6% of the respondents are class teachers for lower and upper six forms. Meanwhile, around 52% ( $n = 263$ ) of the respondents are class teachers for the lower secondary. Based on the demographic output, it clearly indicates that the class teachers as respondents well verse of their school management. This is an advantage for this research as their perceptions is more realistic.

## **8.2 EFA**

The Kaiser-Meyer Olkin (KMO) and Bartlett's Test of Sphericity measure of sampling adequacy was used to determine the appropriateness of Factor Analysis. The KMO index was .849. It is supported by Hutcheson and Sofroniou's (1999) rule of thumb whereby the value of KMO statistic falls into the range of good. Bartlett's Test of Sphericity was significant with  $\chi^2(105, N = 133) = 1,345.326$ ,  $p < .000$ . Thus, this shows that the data were suitable for EFA. A total of 16 items were extracted based on the here orthogonal factors with the eigenvalues above that 1.0. The three factors extracted from EFA denoted three dimensions of the Parental Involvement: (i) School-Based Involvement, (ii) Home-Based Involvement, and (iii) School-Home Interaction. The loadings of the items ranged from .658 to .915, above the cut-off value of .50 as recommended by Hair et al. (2014).

In the meantime, the results from the EFA confirmed the need to remove five items (PI\_6, PI\_10, PI\_15, PI\_17, and PI\_20) due to poor loadings. Item PI\_6 ("Most of the students' parents from my class inform teachers about the problems faced by the adolescent in completing the school assignment via communication tools such as telephone, letters, mobile apps, social networking tools, etc."), Item PI\_10 ("Most of the students' parents from my class assist teachers in supervising the adolescent with the homework"), Item PI\_15 ("Most of the students' parents from my class involve together in implementing student personality programs"), Item PI\_17 ("Most of the students' parents from my class assist teachers in making decisions related to school management matters"), and Item PI\_20 ("Most of the students' parents from my class act as mediator between the school and the community to work together with school") were excluded due to poor loadings which indicated below than the cut-off value of .50.

Table 3. Analysis of Exploratory Factor Analysis.

Before EFA		After EFA			
Modified version of Concept of School and Family Partnership: Parent Involvement (Jennifer, 1999)		Home-School Interaction	Home-based activities	School-based activities	Cronbach $\alpha$ (n = 133)
<i>Most of the students' parents from my class</i>					
PI_1	Attend school's PIBG's meeting	.658			.842
PI_3	Attend parenting workshops organized by the school.	.853			
PI_4	Visit the school to discuss adolescent's academic.	.885			
PI_5	Visit the school to discuss to discuss adolescent's discipline issues.	.876			
PI_2	Attend Report Card Day.		.915		.900
PI_7	Inform teachers about the problems faced by the adolescent in completing the school assignment via <u>communication tools</u> .  <b>communication tools</b> - For example such as telephone, letters, mobile apps, social networking tools, etc.		.864		
PI_8	Assist teachers in motivating the adolescent in home learning activities.		.857		
PI_9	Assist teacher in ensuring their adolescent in doing the school project at home.		.825		
PI_11	Involve together in training students in association, sports and games activities.			.869	.929
PI_12	Involve together in accompanying students participating in outdoor events.			.907	
PI_13	Help teachers to organise <u>school activities</u> .  <b>school activities</b> - For example such Sports Day, Speech Day, prize giving, Motivation Courses, etc.			.886	
PI_14	Provide <u>volunteer activities</u> to school.  <b>volunteer activities</b> - For example such contributing books to school library, involved in school 'gotong-royong', career guidance, assisting as invigilator for exam class, etc.			.803	
PI_16	Involve together in implementing student academic excellence programs.			.692	
PI_18	Assist teachers by encouraging local communities to work together with school.			.818	
PI_19	Involve in community activities planned by the school.			.827	

The first factor comprised Items PI\_1, PI\_3, PI\_4, and PI\_5. These four items mainly described about Home-School Interaction. The second factor that described Home-Based Activities consisted of four items, namely, Items PI\_2, PI\_7, PI\_8, and PI\_9. The third factor described School-Based Activities. Seven items, namely, Items PI\_11, PI\_12, PI\_13, PI\_14, PI\_16, PI\_18, and PI\_19 were found to provide a meaningful connection to this factor. Remarkably, Cronbach's alpha ranged from .842 to .929. This indicated that the internal consistency estimation showed reliable and above the cut-off value of .70. The analysis further continued to examine CFA.

### 8.3 CFA

After performing CFA, none of the items were deleted due to poor factor loadings and high residual. Table 4 depicts that all the standardized factor loading estimates ranged from .608 to .911, exceeding the cut-off value of .50. The AVE estimates for School-Home Interaction, Home-Based Involvement and School Based Involvement are above the cut-off value of .50. This indicated more than half of the variance in these three dimensions was shared with Parental Involvement. Notwithstanding this, CR estimates for the three dimensions were found above the cut-off value of .70. In fact, the CR estimates for School-Home Interaction, Home-Based Involvement and School Based Involvement were considered high with .867, .873, and .921, respectively.

Generally, the findings displayed satisfactory reliability of the scale measured and signified the convergent validity of Parental Involvement. Further, Table 4 exhibits that all the square root values of AVE were found to be greater than the corresponding correlation between dimensions of Parental Involvement. Therefore, Fornell and Larcker's (1981) criterion signifies the discriminant validity of Parental Involvement. In other words, the dimensions of School-Home Interaction, Home-Based Involvement and School Based Involvement were truly distinct from one another.

Table 4. AVE and Construct Reliability of Parental Involvement ( $n = 373$ ).

Construct	Factor Loadings	No. of Items	AVE > .50	CR > .70
School-Home Interaction		4	.626	.867
PI_1	.608			
PI_2	.736			
PI_3	.911			
PI_4	.873			
Home-Based Activities		4	.634	.873
PI_5	.721			
PI_6	.745			
PI_7	.903			
PI_8	.803			
School-Based Activities		7	.627	.921
PI_9	.835			
PI_12	.831			
PI_11	.688			
PI_12	.804			
PI_13	.767			
PI_14	.825			
PI_15	.783			
Square Root AVE (Diagonal) and R <sup>2</sup> (Off-Diagonal) for Parental Involvement				
Construct	School-Home Interaction	Home-Based Activities	School-Based Activities	
School-Home Interaction	0.791			
Home-Based Activities	0.275	0.796		
School-Based Activities	0.764	0.284	0.792	

### 8.4 Model Fit Evaluation

The parental involvement construct consist of fifteen items. Next, based on the suggestion of the modification indices, one of the measurement errors need to be set as "free parameter" to improve the fitness of the model. The measurement errors that need to be correlated are e14 with e15 (M.I. = 94.414, Par Change = .145), e1 with e2 (M.I. = 37.842, Par Change = .138), and e5 with e6 (M.I. = 28.853, Par Change = .094). Once the measurement error is set as "free parameter", the researcher re-run the re-specified

measurement model to check on the fitness indexes. The re-specified measurement model is presented in Figure 2.

The construct for parental involvement exhibited acceptable factor loadings ranging .614 to .884. The CFA model fit the data well [RMSEA = .058 (<.08), GFI = .936 (>.90), CFI = .973 (>.90), NFI = .953 (>.90), and Ratio Chisq/df = 2.251 (<5.0)] based on the rule of thumb recommended. The outcome of the fit indexes met the recommended criteria. Based on the results, it can be summarized that the 15 self-developed items were statistically valid in assessing Parental Involvement scale. The convergent validity and construct reliability for the three dimensions met the required threshold. Therefore, the overall model of parental involvement has high convergent validity (AVE > .50) and indicates that the instrument is reliable (CR > .70) as exhibited in Table 4. Moreover, the outcome showed all the values of squared correlation coefficients were smaller than AVE. Therefore, the result inaugurated the discriminant validity of the construct.

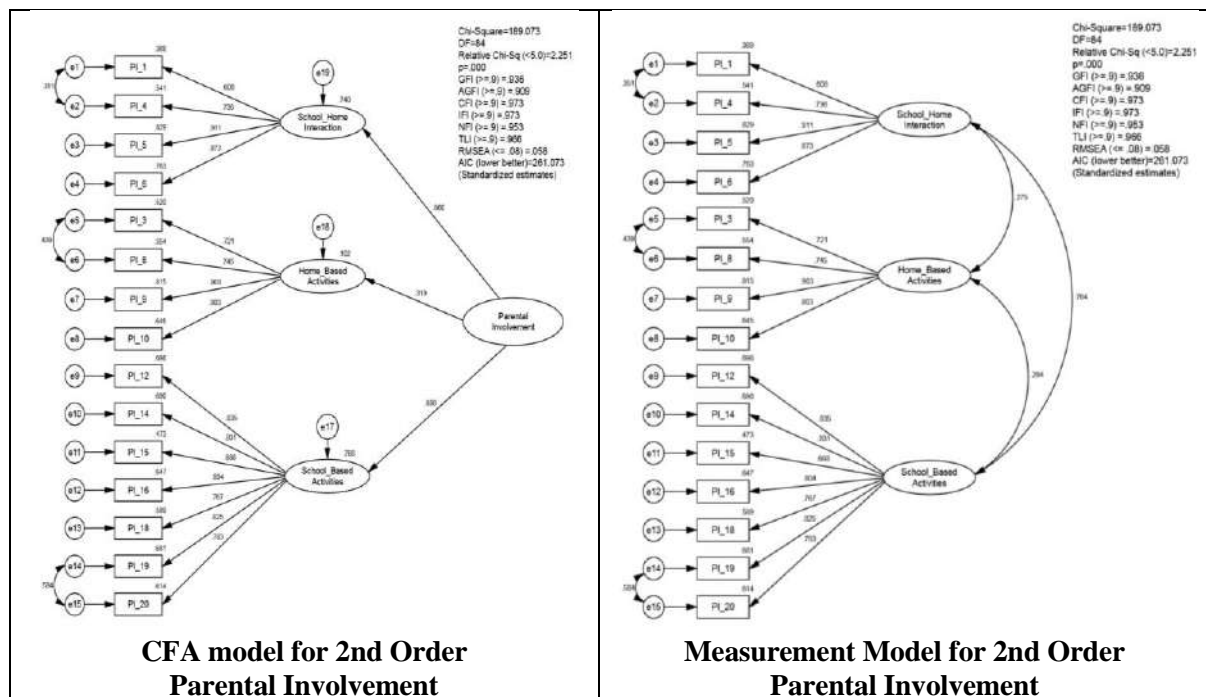


Figure 2: Second Order CFA and Measurement Model for Parental Involvement

## 9.0 DISCUSSION

Despite the importance of parental involvement in secondary schools, assessing the parent-school partnership is deceptively challenging. To fully capture this construct and learn how to promote parental involvement, it is important to measure not only perceptions of parental involvement, but also a range of engagement strategies to uplift the level of parental involvement in secondary schools. Nevertheless, measuring these concepts is intricate by the fact that parental involvement scale as a multi-dimensional tool, which identifies the paradox of parental involvement in certain elements.

The findings support Parental Involvement as a multidimensional construct with its three underlying dimensions: (a) Home-based Activities, (b) School-based Activities, and (c) School-Home Interaction. Using the rigorous statistical measurements by eliminating poor items, the three validated dimensional of Parent Involvement were obtained. Subsequently, the proposed findings integrated with the existing conceptualizations of Parental Involvement (e.g. Epstein et al., 2009; Fantuzzo, McWayne, and Perry, 2004; Fisher, 2016; and Punter, Glas, and Meelissen, 2016) in a wider-range as revealed in the three dimensions stated. Remarkably, the findings exhibit the consistency of sample between Malaysian and Western.

Looking at the findings, school-home interaction reflects the interchange of thoughts, opinions, or information between school and parents, while home-based involvement reflects parent's obligation to nurture and educate by supporting their children's continued academic and development together with the school. School-based involvement reflects parents' participation in school-related events and programs. It



can be concluded that the proposed conceptualization of Parental Involvement based on the three-dimensional add value in Parental Involvement literature based on the current empirical findings. As the educational community seeks continual improvement in parental involvement, it is important to understand the relationships among the underlying factors that affect the outcomes seek from parents, which is increases the involvement of both at home and in the school. This is supported by studies conducted by Epstein et al. (2009); Mahamud, Che Hassan, and Mohd Fakhruddin (2018); Yonson (2016); and Zakaria and Mohd Salleh (2011). They stated that parental involvement as a multidimensional construct is influenced by the type of task assigned to parents and the support received by parents from the school.

School-based interaction construct relates to “a continuous and inevitable process which transports, circulates emotions and meanings” between school especially teachers and parents (Athanasoula – Reppaa et al., 2010, p. 2208). A teacher communicates with parents by providing information, discussing what their children are doing at school, and advising parents. This is important as teachers and parents able to work together and gain a better understanding of the child. Furthermore, parents also wanted information as a basis for discussion, and to be listened to and taken seriously. The results of school-based interaction show effective communication between parents and schools allows the parent to become partners in education, as suggested by Omar and Esa (2009) and Lazaridou and Kassida (2015). Based on these claim, teachers and the school administrators as a whole should ensure that effective communication between existing between school-parents as communication is the key propeller of building a collaboration connection between parents and teachers.

The second construct is parental involvement based on home-based activities. It is important to point out that when a child moves from primary school to secondary school, parents are less likely to discuss homework with their children and to initiate meetings with teachers. This could be due to the transition of their child to secondary schools and subject matters. Therefore, the home-based involvement construct appears to continuously provide support for parents to establish a supportive learning environment at home (Hamlin & Flessa, 2016; Zakaria & Mohd Salleh, 2011). Mahamud, Che Hassan, and Mohd Fakhruddin (2018) also agree that such involvement can shape children's attitude and personality as well as motivate and stimulate them to succeed in education and life. Accordingly, Jensen and Minke (2017) claimed that less parental involvement in home-based activities can result in a child's poor school completion rates and social-emotional functioning. Where else, parents with high involvement in home-based activities are much less likely to be accountable for the child's need in preparing a better learning environment at home than parents that are not involved. This has drawn attention to the importance of this home-based involvement construct as a determining factor in the process of the child's educational attainment.

Finally, school-based activities construct is based on the efforts made by the school to involve parents in school-related events. This could result in parents' participation in school-related activities that best fits their interest and time. Jeynes (2018; 2011) stated that the involvement of parents in school-related activities can be improved by inviting parents and community to work together as volunteers in organizing school activities. This statement is supported by Khalid and Mohd Hanafi (2013) in which they believed that a child will improve academically through the support of parents in school activities.

In short, school must believe that parents have a role in the education process. A perusal of literature reveals that parental involvement as a multidimensional role and has tended their involvement mainly in these three dimensions (Fantuzzo, McWayne, & Perry, 2004; Grover, 2015; Jeynes, 2018). It is important to increase parental involvement in secondary schools to foster their contribution towards students' academic and social development (Ellis et al., 2013; Hamlin & Flessa, 2016; Lazaridou & Kassida, 2015). Furthermore, as Jensen and Minke, (2017) said, parental involvement can be encouraged in various ways, and one of the main encouragement through establishing a direct link between parents and their children's school. This is also proven in previous studies that school plays a major role by providing opportunities for parents to learn how to help their children succeed in school as well as by reducing educational jargon and breaking down cultural and language barriers through promoting effective two-communication between parents and school (Hornby & Lafaele, 2010). The finding from this study implies that regardless of primary or secondary schools, the class teachers perceived that parents show the same amount of eagerness to contribute and perform any duties that are required of them by the school for the improvement of their children and the school community.

## 10.0 LIMITATIONS, IMPLICATIONS, AND RECOMMENDATIONS

Notably, the validated and scrutinized self-administered parental involvement questionnaire demonstrates its applicability in Malaysian school context. It can be therefore used as an evaluative tool to gauge the level of parental involvement in secondary schools based on home-based activities, school-based activities, and school-home interaction. Importantly, knowing the level of these three elements of Parental Involvement would assist the school administrators and teachers to identify factors that influence parental involvement in secondary schools and school effectiveness.

Nevertheless, the perception of a single group of respondents, who are the class teachers from the regular secondary schools in Peninsular Malaysia will inevitably be influenced by the climate and location of the school as asserted by Bear et al. (2014) and Mapps (2003) even though the factors that contributes towards the influence in terms of parental involvement has been reduced at the earlier phase of the analysis statistically. In addressing this constraint, a cross-cultural comparative study using more than a sample for evaluating the Parental Involvement instrument is strongly recommended.

Apart from that, cross-validation of the psychometric aspects of Parental Involvement scale is strongly recommended as the self-developed questionnaire is limited within the Malaysian secondary school teachers. Accordingly, using another set of samples such as primary, religious, cluster, and vocational school teachers to further improvise and refine the scale. This recommendation is supported by MacKenzie, Podsakoff, and Podsakoff (2011) in connection with the significance of cross-validation using a new sample data.

A similar study can be further enhanced by combining research designs into a mixed-method approach to examine the relationship between these construct. Interviews, site visits, and observations can be integrated into the research which will help to reveal a deeper understanding of the respondents' perceptions. So far, almost all the prior research studies use quantitative research methodology and usually from a positivist perspective. Qualitative methodology, especially from an interpretive perspective, however, is informative and may be another useful alternative method that can provide researchers with new insights about parental involvement as multi-dimensional in secondary schools. Thus, it is recommended that future research should include other techniques of data collection such as interviews and direct observation for the purpose of cross validation on the responses given.

The sample for the present study consisted only of class teachers. Another potential area of research for future study is the use of the split sample approach to reduce or eliminate the issues of bias when data is collected from a single source. In the educational context, using this approach, the study can be complemented by collecting data from multiple groups of respondents, such as principals, teachers, students and parents. The utilization of variety groups of respondents can be compared as it can reveal variations in the findings. This type of research design and analysis reduces potential source of bias referred to as common method variance. Further, the parental involvement scale should pair with others designed tools to assess the barriers of parental involvement, especially given previous studies (e.g., Hornby & Lafaele, 2010) that have presented these forms of involvement to be particularly predictive of student attainments.

## 11.0 CONCLUSION

In a nutshell, this study has improvised Jennifer's (1999) instrument scale measured by 15 reliable and validated self-developed items of Parental Involvement questionnaire. Despite more studies need to be conducted either conceptually or statistically, the current Parental Involvement scales warrants to be a foundation form towards comparable findings across the educational research settings. Importantly, the present findings create a possible platform for Parental Involvement scale to capture the value-added of parental involvement as a multi-dimensional construct.

## REFERENCES

- Athanasoula - Reppa, A., Botsari, E. M., Kounenou, K., & Psycharis, S. (2010). School leadership innovations and creativity: The case of communication between school and parents. *Procedia-Social and Behavioral Sciences*, 2(2), 2207-2211.

- Abdullah Hamid, Z., Othman, J., Ahmad, A., & Ismail, I.A. (2011). Hubungan antara penglibatan ibubapa dan pencapaian akademik pelajar miskin di Negeri Selangor. *Journal of Islamic and Arabic Education*, 3(2), 31-40.
- Ahmad, N.A., Hassan, S.A., Ahmad, A.R., Chua, L.N., & Othman, N. (2016). Parental involvement in learning environment, social interaction, communication, and support towards children excellence at school. *International Conference on Education and Regional Development 2016 (ICERD 2016) "Cross-Cultural Education for Sustainable Regional Development"*. Bandung, Indonesia. 31 October & 1 November 2016
- Aziz, H. (2016, May 25). *Need for greater parental involvement*. News Straits Times. Retrieved March 27, 2017 from <https://www.nst.com.my/news/2016/05/147673/need-greater-parental-involvement>
- Barton, A. C., Drake, C., Perez, J.G., Louis, K.S., & George, M. (2004). Ecologies of parental engagement in urban education. *Educational Researcher*, 33(4), 3-12.
- Bear, G., Yang, C., Pell, M., & Gaskins, C. (2014). Validation of a brief measure of teachers' perceptions of school climate: Relations to student achievement and suspensions. *Learning Environments Research*, 17(3), 339–354.
- Berkowitz, R., Astor, R. A., Pineda, D., DePedro, K. T., Weiss, E. L., & Benbenishty, R. (2017). Parental involvement and perceptions of school climate in California. *Urban Education*, 004208591668576. doi:10.1177/0042085916685764
- Brown, A. F. (1967). Reactions to Leadership. *Educational Administration Quarterly*, 3(1), 62–73. Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136-162). Newbury Park, CA: SAGE.
- Castro, M., Expósito-Casas, E., López-Martín, E., Lizasoain, L., Navarro-Asencio, E., & Gaviria, J. L. (2015). Parental involvement on student academic achievement: A meta-analysis. *Educational Research Review*, 14, 33-46.
- Creswell, J. W. (2017). *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research* (4th Ed.). Boston: Pearson Education.
- Đurišić, M., & Bunijevac, M. (2017). Parental involvement as a important factor for successful education. *Center for Educational Policy Studies Journal*, 7(3), 137-153.
- Ellis, G., Morgan, N.S., & Reid, K. (2013). Better behaviour through home-school relations: Using values-based education to promote positive learning. Oxon: Routledge.
- Epstein, J. L. (1995). School/family/community partnerships. *Phi Delta Kappan*, 76(9), 701-713.
- Epstein, J. L., Sanders, M. G., Simon, B. S., Salinas, K. C., Jansorn, N. R., & Voorhis, F. L. (2009). *School, Family, and Community Partnership: Your Handbook for Action* (3rd ed.). Thousand Oak, California, US: Corwin Press, Inc.
- Fantuzzo, J., McWayne, C., & Perry, M. (2004). Multiple dimensions of family involvement and their relations to behavioral and learning competencies for urban, low-income children. *School Psychology Review*, 33(4), 467–480.
- Fisher, Y. (2016). Multi-Dimensional Perception of Parental Involvement. *Universal Journal of Educational Research*, 4(2), 457-463.
- Fraenkel, J., Wallen, N., & Hyun, H. (2012). *How to Design and Evaluate Research in Education*. UK: McGraw-Hill Education.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E., (2014). *Multivariate Data Analysis - Person New International Edition* (7th Ed.) Essex: Person Education Limited.
- Hill, N. E., & Tyson, D. F. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology*, 45(3), 740-763.
- Hornby, G. (2011). *Parental involvement in childhood education: Building effective school-family partnerships*. New York, USA: Springer.
- Hornby, G., & Lafaele, R. (2011). Barriers to parental involvement in education: An explanatory model. *Educational Review*, 63(1), 37–52.
- Hornby, G., & Witte, C. (2010). Parent involvement in inclusive primary schools in New Zealand: Implications for improving practice and for teacher education. *International Journal of Whole Schooling*, 6(1), 27-38.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional

- criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1–55.
- Hutcheson, G. D., & Sofroniou, N. (1999). *The multivariate social scientist: An introduction to generalized linear models*. London: Sage Publications.
- Jabar, M. A. (2010). How do Japanese schools promote parental involvement? *International Journal of Social Sciences & Humanity Studies*, 2(1), 91-98.
- Jennifer, W. B. Y. (1999). *Perceptions of primary schools' headmasters and teachers towards the concepts, importance and practices of school and family partnership (Unpublished Ph.D thesis)*. Faculty of Educational Studies, University Putra Malaysia.
- Jensen, K. L., & Minke, K. M. (2017). Engaging families at the secondary level: An underused resource for student success. *School Community Journal*, 27(2), 167-192.
- Jeynes, W. H. (2018). A practical model for school leaders to encourage parental involvement and parental engagement. *School Leadership & Management*. 1-17.
- Jeynes, W. H. (2016). A meta-analysis: The relationship between parental involvement and African American school outcomes. *Journal of Black Studies*, 47(3), 195-216.
- Jeynes, W. H. (2011). Parental involvement and secondary school achievement: A meta-analysis. In *Parental involvement and academic success* (pp. 57-72). New York, NY: Routledge.
- Kabir, A. H., & Akter, F. (2014). Parental involvement in the secondary schools in Bangladesh: Challenges and a way forward. *International Journal of Whole Schooling*, 10(1), 1–18.
- Kandasamy, J., Hutagalung, F., Mohd Rushdan, A. R., & Zulkifli, M. I. (2016). Parental involvement in students' academic achievement: A preliminary study. In F. L. Gaol, F. Hutagalung, Z. Abd Razak, & B. H. Zuwati (Ed.), *Knowledge, Service, Tourism & Hospitality: Proceedings of the Annual International Conference on Management and Technology in Knowledge, Service, Tourism & Hospitality 2015 (SERVE 2015) in Bandung, Indonesia* (pp. 49-53). London: Taylor & Francis Group.
- Khalid, G. B., & Mohd Yasin, M. H. (2013). Communication Strategies for Parents and the Community involvement at Integrated Special Education School. *International Journal of Humanities and Social Science Invention*, 2 (4), 2319 – 7714.
- Kline, R. B. (2011). *Principles and practice of structural equation modelling* (3rd ed.). New York, NY: The Guilford Press.
- Lazaridou, A., & Kassida, A. G. (2015). Involving parents in secondary schools: Principals' perspectives in Greece. *International Journal of Educational Management*, 29(1), 98-114. =
- Mahamud, I. Y., Che Hassan, N. & Mohd Fakhruddin, F. (2018). Penglibatan ibu bapa dalam aktiviti pembelajaran anak di rumah dan hubungannya dengan pencapaian akademik murid sekolah agama bantuan kerajaan (SABK) [Relationship between the Academic Performance of Students in Religious Government-affiliated Schools and the Extent of Parents' Involvement in Their Children's Self-Study], *e-Jurnal Penyelidikan dan Inovasi*, 5(1), 42-62.
- Mapp, K. (2003). Having their say: Parents describe why and how they are engaged in their children's learning. *The School Community Journal*, 13(1), 35-65.
- MacKenzie, S. B., Podsakoff, P. M., & Podsakoff, N. P. (2011). Construct measurement and validation procedures in MIS and behavioral research: Integrating new and existing techniques. *MIS Quarterly*, 35(2), 294-334.
- Mohd Radzi, F.A., Abd Razak, M.N., & Mohd Sukor, N.H. (2010). Parental involvement in school to improve academic achievement: Primary teachers' views. *International Journal of Learning*, 17(9), 259-270.
- Ng, W. K., & Tan, W. C. (2017). A Study on Parental Involvement and Academic Achievement in Elementary School Students. *Sains Humanika*, 9(3-2), 45-50.
- Nunnally, J. C. (1978). *Psychometric theory* (3rd ed.). New York, NY: McGraw-Hill.
- Omar, Z., & Esa, A. (2009). Persepsi guru terhadap hubungan pihak sekolah dengan ibu bapa. *Seminar Kebangsaan Pengurusan Pendidikan PKPGB 2009*, 7 Mei 2009. Malaysia: Universiti Tun Hussein Onn (UTHM).
- Olsen, G. H. & Fuller, M.L. (2008). *Home-School relations: Working successfully with parents and families* (3rd ed.). USA: Pearson Education, Inc.
- Povey, J., Campbella, A.K., Willisb, L., Haynesa, M., Westerna, M., Bennetta, S., Antrobusa, E., & Peddea, C. (2016). Engaging parents in schools and building parent-school partnerships: The role of school

- and parent organisation leadership. *International Journal of Educational Research*, 79(2016), 128-141.
- Punter, R.A., Glas, C.A., & Meelissen, M.R. (2016). *Psychometric Framework for Modeling Parental Involvement and Reading Literacy*. IEA Research for Education. International Association for the Evaluation of Educational Achievement. Herengracht 487, Amsterdam, 1017 BT, The Netherlands.
- Reduan, M. N. (2008). *Teachers' perception towards parental involvement in their children's education in the secondary schools, Temerloh, Malaysia* (Unpublished Master Dissertation). Universiti Putra Malaysia.
- Rode, N. E., & Wong, S. L. (2016). A phenomenological study exploring parental involvement among role model students in a private secondary school. *International Journal of Education and Training (InJET)* 2(Special Issue), 1- 12.
- Said, H., Ahmad, I., Tahir, L., Ahmad, R., & Hassan, Z. (2013). Effect of community participation on school community relations. *Middle-East Journal of Scientific Research*, 16(3), 378-382. doi: 10.5829/idosi.mejsr.2013.16.03.11655
- SARANA Ibu Bapa (2013). Malaysia: Ministry of Education. Available at: <https://moe.gov.my/index.php/my/sumber/muat-turun/garispenduan/item/sarana-ibubapa> (accessed 27 March 2016).
- SARANA Sekolah (2013). Malaysia: Ministry of Education. Available at: <https://moe.gov.my/index.php/my/sumber/muat-turun/garispenduan/item/sarana-sekolah> (accessed 27 March 2016).
- Schumacker, R. E., & Lomax, R. G. (2004). *A beginner's guide to structural equation modelling* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum.
- Shannon, G.S., & Bylsma, P. (2007). Nine characteristics of high-performing schools: A research-based resource for schools and districts to assist with improving student learning. *OSPI* (pp. 1-146). Washington: Superintendent of Public Instruction.
- Simon, S. (2017). A study of primary school parents' interaction with teachers' in Malaysia. *World Academy of Science, Engineering and Technology International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*, 11 (2), 334-341.
- Smith, J., Wohlsetter, P., Kuzin, C.A., & Pedro, K.D. (2011). Parent involvement in urban charter schools: New strategies for increasing participation. *The School Community Journal*, 21(1), 71-94.
- Tana, A. (2014). The importance of school-family communication in the teachers' point of view in Albania. *Journal of Educational and Social Research*, 4(1), 273-277.
- The Star Online (2018). *Parental involvement vital part of learning*. Retrieved July 27, 2018 from <https://www.thestar.com.my/news/education/2018/03/25/parental-involvement-vital-part-of-learning/#ZBXIPH2h3ETsvArx.99>
- United States Department of Education. (2008). *Parental involvement: Title I, Part A Nonregulatory guidance*. Retrieved June 3, 2016 from [http://www.wvwd208.org/UserFiles/Servers/Server\\_147518/File/West%20Valley%20School%20District%202008/Departments/Title%20I%20LAP/District\\_Title\\_I\\_Parent\\_Involvement\\_Policy\\_and\\_Procedures.pdf](http://www.wvwd208.org/UserFiles/Servers/Server_147518/File/West%20Valley%20School%20District%202008/Departments/Title%20I%20LAP/District_Title_I_Parent_Involvement_Policy_and_Procedures.pdf)
- Vellymalay, S. K. N. (2012). Bridging school and parents: Parental involvement in their child's education. *Journal of Studies in Education*, 2(1), 41-57.
- Worthington, R. L., & Whittaker, T. A. (2006). Scale development research. *The Counseling Psychologist*, 34(6), 806-838.
- Yonson, D. L. (2016). Level of parent involvement in the elementary and secondary levels. *The Normal Lights*, 10(1), 182-203.
- Zakaria, A. R., & Mohd Salleh, N. (2011) Konteks keluarga dan hubungannya dengan penglibatan ibu bapa dalam pendidikan anak-anak di Sekolah Menengah (Family context and its relationship with parental involvement in their children's education in secondary schools). *Jurnal Pendidikan Malaysia*, 36(1), 35-44.

## **ACKNOWLEDGEMENT**

The authors would like to thank Educational Planning Research Department (EPRD), Ministry of Education (MoE), State Department Education (Perak, Selangor, Pahang, and Johor), Universiti Putra Malaysia (UPM) and secondary school administrators for granting permission to conduct this research. This research is financially supported by Geran Putra-IPS (GP-IPS/2018/9628100).

## The Influence of College Teachers' Leadership Style Change and Emotional Regulation Self-efficacy

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### ABSTRACT

*The aim of this study is to examine the relationship between emotional regulation self-efficacy and leadership style change of university teachers by using the methods of questionnaire survey, literature research and establish a research model on the relationship between leadership style and emotional regulation self-efficacy. The questionnaire designed in this study mainly includes a number of questions about demography, including age, marriage, gender, major, education, efficient nature, position, teaching age, rank and so on. There are 10 questions about teachers' emotional regulation self-efficacy and 24 questions about transformational leadership style. There are 6 questions about transactional leadership style. The research and analysis of this study mainly adopts statistical methods such as variance analysis, reliability test, independent sample t test, descriptive statistical analysis, correlation analysis, hierarchical regression analysis and multiple regression analysis. The findings reveal that different leadership styles have different effects on teachers' emotional regulation self-efficacy in university system. Transformational leadership style has a negative correlation with teachers' emotional regulation self-efficacy, while transactional leadership style has a positive correlation with teachers' emotional regulation self-efficacy, which improves teachers' self-emotion management ability. In addition, transformational leadership style has a negative effect on the improvement of teachers' emotional regulation self-efficacy, but transactional leadership style has a positive effect on the improvement of college teachers' emotional regulation self-efficacy. A good leadership style can improve teachers' ability to self-control their emotions, promoting the efficient work of teachers, and has a positive effect on schools, students and teachers themselves. This study is of great value for a deeper understanding of teachers' emotional regulation self-efficacy.*

**KEYWORDS:** Leadership Style; Self-Efficacy; Teachers' Leadership Style

### 1.0 INTRODUCTION

The theory of resource protection puts forward that people will generally strive to establish and maintain their own resources. Once resources are exhausted [1], the first choice for individuals is to actively create or acquire new resources and make up for them as much as possible [2]. However, after a period of time, individuals do not have the energy to seek new resources. If it is difficult to retrieve resources, there will be dysfunction [3]. Leadership style, as an external pressure [4], will consume the resources that employees now have, when faced with the loss of resources or the loss of power. Most individuals will not passively accept, but actively seek new resources as follow-up and supplement. Emotional regulation self-efficacy is a kind of psychological resources [5]. The higher self-efficacy of emotional regulation is, the more confident individuals are to cope with external pressure [6], which bring themselves a strength to face difficulties, effectively alleviate pressure and tension, and avoid job burnout among employees [7]. In addition, according to the resource theory of job demand, job demand refers to the physical, social or organizational needs of employees involved in the work, and they are eager to get material and spiritual satisfaction [8]. For example, most employees need to express their emotions appropriately, which has become their work needs [9]. Emotional regulation self-efficacy can determine employees' perception of existing work needs and resources, and affect employees' judgment of their own work needs and resources, and then affect their job burnout. Therefore, in this study, this variable is selected as a regulatory variable to study its regulatory effect [10].

This theory also points out that employees and leaders are interactive processes. Leaders' psychological resources may affect their subordinates' mental state [11]. When employees encounter external influences (leadership style) in the work environment, they consume their own resources while seeking external resources to make up for them [12]. As the psychological resources of leaders, the

emotional self-efficacy of leaders may affect their subordinates' emotional exhaustion [13]. Therefore, in this study, college teachers, a highly emotional worker, are selected as the subjects to explore the influence of leadership style on emotional regulation self-efficacy of subordinates [14].

To sum up, in this study, the relationship between college teachers' emotional self-efficacy and leadership style change is mainly studied. The results show that transformational leadership style plays a negative role in improving the emotional regulation self-efficacy of highly effective teachers, but transactional leadership style has a positive role in promoting it. The innovation of this study is to link the two fields of leadership style and emotional self-efficacy of University teachers, and to study them through two different styles: transactional style and transformational style.

## **2.0 METHODOLOGY**

### **2.1 Research methods and objectives**

Questionnaire survey method: 106 university teachers in Xinxiang city are selected as the analysis and research objectives, and 106 questionnaires are sent out. After checking, after the invalid questionnaires are removed, the remaining 100 questionnaires are used to analyze the data and summarize the influence of leadership style change on college teachers' self-efficacy in emotional regulation.

Document research method: By consulting and studying the current information about the relationship between teachers' emotions and leadership styles in China, some contributions are supposed to be made to the management of teachers' emotions in China.

Research objectives: The work of university teachers has very important particularity, because such teachers not only undertake the teaching tasks of students, but also undertake their own scientific research tasks, as well as other tasks of schools and colleges, which is under great pressure. Therefore, it is mainly classified according to different leadership styles to study the influence of different leadership styles on the emotional regulation self-efficacy of efficient teachers.

### **2.2 Research subjects**

106 university teachers in Xinxiang city are selected as the analysis and research objectives, and 106 questionnaires are sent out. After checking, after the invalid questionnaires are removed, the remaining 100 questionnaires are used to analyze the data and summarize the influence of leadership style change on college teachers' self-efficacy in emotional regulation. The questionnaire designed in this study mainly includes a number of questions about demography, including age, marriage, gender, major, education, efficient nature, position, teaching age, rank and so on. There are 10 questions about teachers' emotional regulation self-efficacy and 24 questions about transformational leadership style. There are 6 questions about transactional leadership style.

### **2.3 Research process**

The first step of this study is to consult and analyze the past data on leadership style and self-efficacy of emotional regulation of efficient teachers. It is necessary to consult the influence of transactional leadership style and transformational leadership style on teachers' self-efficacy, record and study carefully, then put forward a reasonable initial problem, and then search the data for basic data support. The next step is to establish a research model on the relationship between leadership style and emotional regulation self-efficacy. Then, it is necessary to design questionnaires about transformational leadership style, transactional leadership style and emotional regulation self-efficacy. Then, questionnaires should be sent out and collected. The collected questionnaires are screened to remove some invalid ones. The next step is to analyze and study the effective resources collected, and then draw the corresponding conclusions based on the data. Finally, according to the conclusions of this study, combined with the actual situation, the corresponding suggestions are put forward. The flow chart of the model is shown in figure 1.



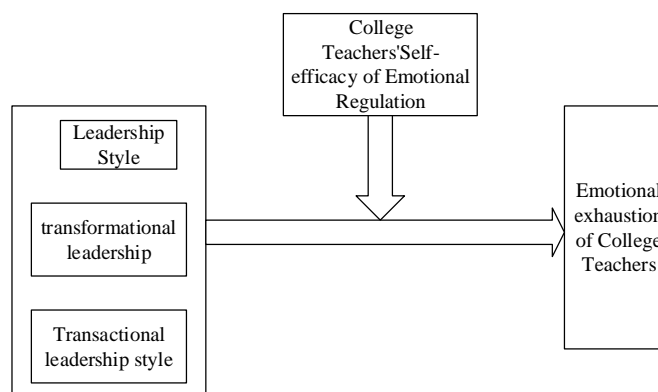


Figure 1. Research flow chart of leadership style on emotional regulation self-efficacy of college teachers

From table 1, it can be known that the Cronbach's Alpha value of emotional regulation self-efficacy is 0.911, which is larger than the reliability standard value of 0.7. It shows that the scale has high internal consistency. The reliability of the scale in this study meets the requirements of the study.

Table 1. Reliability analysis of emotional regulation self-efficacy

Name of scale	Cronbach's a coefficient	Item number
Emotional regulation self-efficacy	0.911	12

## 2.4 Observation Indicators

The questionnaire designed in this study involves three directions. The first one is about the direction of transactional leadership style, the second one is about transformational leadership style, and the third one is about the level of emotional regulation self-efficacy of University teachers. Therefore, in order to verify the deviation of the questionnaire design at the three levels and whether it meets the design requirements, the single factor analysis method is used to analyze the questions in the questionnaire. In this study, the previous validated and summarized effective method - hierarchical regression method has been used for reference to study the influence of different leadership styles on college teachers' emotional regulation self-efficacy. First, before regression analysis, it is necessary to effectively centralize the values of adjusting variables and independent variables, that is, to use the values of variables to subtract the average. The main purpose of doing this is to weaken the impact of possible collinearity on the regression analysis model in this study. Then, the adjusted variables and the values of the independent variables that have been centralized are multiplied, and the results of the data obtained are the interactive items. After that, hierarchical regression analysis can be formally carried out. The equation is used in order according to the requirements. The first step is to adjust the values of variables and the results of independent variables. The second step is the result numerical interaction term. If the regression coefficients of the interactive terms obtained by the calculation are prominent, it shows that the results of the adjustment are quite good.

## 2.5 Data processing

The research and analysis of this study mainly adopts statistical methods such as variance analysis, reliability test, independent sample t test, descriptive statistical analysis, correlation analysis, hierarchical regression analysis and multiple regression analysis. The statistical analysis software is SPSS21.0.

### 3.0 3RESULTS AND DISCUSSION

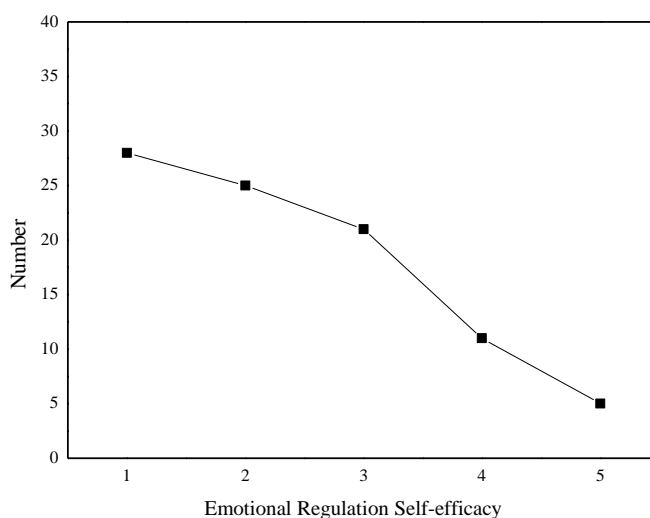


Figure 2. The effect of transformational leadership style on college teachers' emotional regulation self-efficacy

The influence of transformational leadership style on college teachers' emotional regulation self-efficacy is shown in figure 2. From the figure, it can be seen that under the influence of transformational leadership style, the emotional self-efficacy of college teachers has declined obviously. When the value of emotional management ability is 1, the number of teachers is the largest, which indicates that the emotional management ability of teachers has declined greatly. It can be seen that transformational leadership style has a negative effect on the emotional management ability of college teachers, which seriously affect the emotions of teachers, and then will have a greater impact on teaching and scientific research, which will have a certain degree of impact on schools and students.

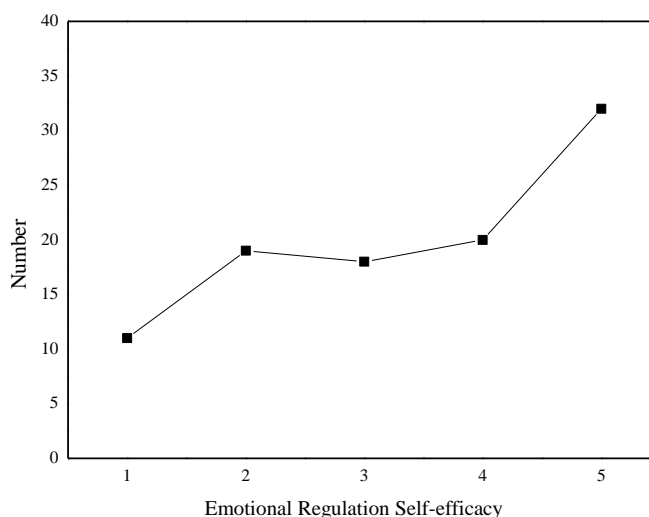


Figure 3. The effect of transactional leadership style on college teachers' emotional regulation self-efficacy

The influence of transactional leadership style on college teachers' emotional regulation self-efficacy is shown in figure 3. From the figure, it can be seen that under the influence of transactional leadership style, the emotional adjustment self-efficacy of university teachers has been improved significantly. When the value of emotional management ability is 1, the number of teachers is the smallest, which indicates that the emotional management ability of teachers is increasing day by day. This shows that the transactional leadership style has a positive effect on the emotional management ability of college teachers, greatly promotes the emotional management of teachers, and then has a greater positive impact on teaching and scientific research, which will bring some help to schools and students.

Table 2. Reliability analysis of transformational leadership style

Name of scale	Subscale name	Cronbach'sa coefficient of subscale	Item number	Total table Cronbach'sa coefficient
transformational leadership	Moral modeling	0.914	8	0.973
	Motivation for the Future	0.851	6	
	Individualized care	0.805	6	
	Leadership charm	0.837	6	

The reliability analysis of transformational leadership style is shown in table 2. From the data in the table, it can be seen that the Cronbach's a coefficient of transformational leadership style scale is 0.973, and the reliability test data of all dimensions are more than 0.8, higher than 0.7. Therefore, the reliability of the scale is high and the internal consistency is good, which meets the reliability evaluation criteria of this study.

Table 3. Reliability analysis of transformational leadership style

Name of scale	Subscale name	Cronbach's a coefficient of subscale	Item number	Total table Cronbach'sa coefficient
Transformational leadership	Contingent reward	0.689	4	0.788
	Active exception management	0.612	4	

The reliability analysis of transformational leadership style is shown in table 3. The internal consistency coefficient Cronbach's a coefficient of each subscale and total scale of transactional leadership style is analyzed by software to test its reliability. From the data in the table, it can be seen that the Cronbach's a value of the transactional leadership style scale is 0.788, which shows that the reliability of the transactional leadership style scale in this study meets the research requirements.

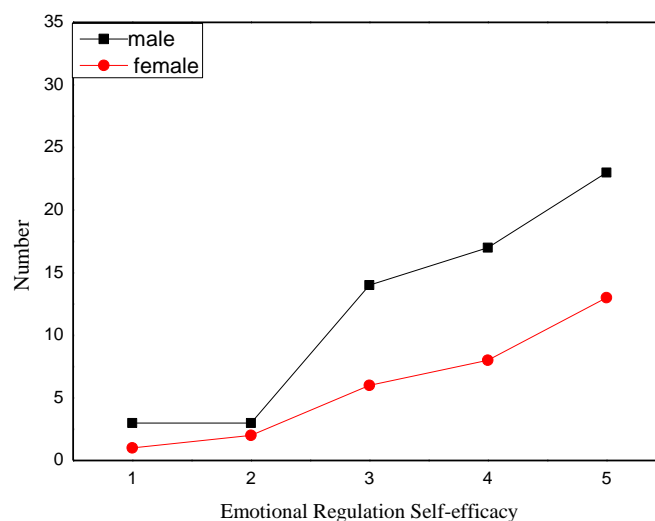


Figure 4. A study on self-efficacy of gender on teachers' emotional regulation in transactional leadership style

Under the transactional leadership style, gender studies on teachers' emotional regulation self-efficacy

are shown in figure 4. It can be clearly seen from the figure that under the same leadership style, there is no obvious difference between the gender on the emotional regulation self-efficacy of efficient teachers, which maintains a consistent trend. Therefore, gender has no difference in emotional regulation self-efficacy of faculty members under transactional leadership style, and is not affected by gender.

#### **4.0 CONCLUSION**

In this study, questionnaire survey, literature research and other comprehensive analysis methods are mainly used to study the relationship between college teachers' emotional regulation management ability and leadership style change. The results show that different leadership styles have different effects on teachers' emotional regulation self-efficacy in Chinese universities. Transformational leadership style has a negative effect on teachers' emotional regulation self-efficacy. Transactional leadership style has a positive effect on teachers' emotional regulation self-efficacy and improves teachers' self-emotion management ability. In conclusion, transformational leadership style has a negative correlation with teachers' emotional regulation self-efficacy, while transactional leadership style has a positive correlation with teachers' emotional regulation self-efficacy. There are also some shortcomings in this study, mainly due to the inability to control the authenticity and timeliness of the literature, and also because of the author's research ability, in the study, more research on many details are not carried out. However, the study has a very important reference significance for later research on consumers and works of art.

#### **REFERENCES**

- Domitrovich C E, Bradshaw C P, Berg J K, et al. How do school-based prevention programs impact teachers? Findings from a randomized trial of an integrated classroom management and social-emotional program. *Prevention Science*, 2016, 17(3), pp, 325-337.
- Zee M, Koomen H M Y. Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Review of Educational research*, 2016, 86(4), pp, 981-1015.
- Malinen O P, Savolainen H. The effect of perceived school climate and teacher efficacy in behavior management on job satisfaction and burnout: A longitudinal study. *Teaching and Teacher Education*, 2016, 60, pp, 144-152.
- Amirian S M R, Behshad A. Emotional intelligence and self-efficacy of Iranian teachers: A research study on university degree and teaching experience. *Journal of Language Teaching and Research*, 2016, 7(3), pp, 548-558.
- Zee M, de Jong P F, Koomen H M Y. Teachers' self-efficacy in relation to individual students with a variety of social-emotional behaviors: A multilevel investigation. *Journal of Educational Psychology*, 2016, 108(7), pp, 1013.
- Jones S M, Kahn J. The evidence base for how we learn: Supporting students' social, emotional, and academic development. *The WERA Educational Journal*, 2017, 10(1), pp, 5-20.
- McLennan B, McIlveen P, Perera H N. Pre-service teachers' self-efficacy mediates the relationship between career adaptability and career optimism. *Teaching and Teacher Education*, 2017, 63, pp, 176-185.
- Jennings P A, Brown J L, Frank J L, et al. Impacts of the CARE for Teachers program on teachers' social and emotional competence and classroom interactions. *Journal of Educational Psychology*, 2017, 109(7), pp, 1010.
- Zheng X, Yin H, Wang M. Leading with teachers' emotional labour: relationships between leadership practices, emotional labour strategies and efficacy in China. *Teachers and Teaching*, 2018, 24(8), pp, 965-979.
- Helms-Lorenz M, Maulana R. Influencing the psychological well-being of beginning teachers across three years of teaching: Self-efficacy, stress causes, job tension and job discontent. *Educational psychology*, 2016, 36(3), pp, 569-594.
- Jyoti J, Bhau S. Empirical investigation of moderating and mediating variables in between transformational leadership and related outcomes: A study of higher education sector in North India. *International Journal of Educational Management*, 2016, 30(6), pp, 1123-1149.
- Morris D B, Usher E L, Chen J A. Reconceptualizing the sources of teaching self-efficacy: A critical review of emerging literature. *Educational Psychology Review*, 2017, 29(4), pp, 795-833.

- Hsieh C W, Hsieh J Y, Huang I Y F. Self-efficacy as a mediator and moderator between emotional labor and job satisfaction: A case study of public service employees in Taiwan. *Public Performance & Management Review*, 2016, 40(1), pp, 71-96.
- Bellibas M S, Liu Y. Multilevel analysis of the relationship between principals' perceived practices of instructional leadership and teachers' self-efficacy perceptions. *Journal of Educational Administration*, 2017, 55(1), pp, 49-69.

## Malaysian Academicians Perspectives on Continuous Professional Development of Academics in Malaysian Public Universities

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### ABSTRACT

*Public universities in Malaysia are expected to produce graduates who are not only employable, but must also be capable to contribute to the development of the nation and to fulfil national aspirations which ultimately make the Malaysian public universities remain competitive in the QS World Ranking of Universities. One of the critical factors that would enable this is by supporting the continuous professional development (CPD) for the academics so that they would be able to enhance their quality of teaching, research and consultancy services as their core duties. This study addresses the perspectives of the Malaysian academicians in public universities with regard to the implementation of continuous professional development initiatives taken by the respected public universities. Employing the qualitative approach, we analysed the perspectives of the academicians from public universities on the issues and challenges as well as institutional support given to them related to continuous professional development of the academicians. Data are drawn from interviews with several academicians as well as analysis of relevant documents. Findings indicated that the academicians have specific and diverse needs for CPD in order to enhance the quality of their teaching, research and consultancy services. They concurred that the universities have provided relevant support for CPD especially to the young academicians. There are areas in which support was particularly strong and other areas which the universities are constraint due to reduction of annual budget. Various issues and challenges with regard to institutional governance as the framework and policies are being strengthened to equip the academicians with the Industrial Revolution 4.0 (IR 4.0) requirements so as to make them remain relevant, referred and respected in their functions.*

**KEYWORDS:** *Continuous Professional Development, Quality Teaching, Public Universities, University Governance*

### 1. INTRODUCTION

Public universities in Malaysia are required to produce graduates who are not only employable, but must also be capable to contribute to the development of the nation and to fulfil national aspirations which ultimately make the Malaysian public universities remain competitive both nationally and globally. Well-trained academicians is assumed to be able to create and impart knowledge and skills consistent with their expertise in relevant fields essential to the development of a better prepared graduates through the university system (Norzaini, 2019). One of the key factors that would enhance the academicians' performance in the academic world is by attending relevant continuous professional development (CPD) programmes that would improve their quality of teaching, research and consultancy services capabilities (Annyza, Soaib, Zaidatol Akmaliah & Ismi Ariff, 2015). This paper discusses continuous professional development (CPD) in Malaysian public universities from the academicians' perspectives focusing on the needs, issues and challenges in implementing the CPD for the academics.

### 2. CONTINUOUS PROFESSIONAL DEVELOPMENT

Continuous professional development (CPD) is an important factor to improve teaching, research and consultancy services perform by the academicians. CPD is the intentional initiatives conducted internally and externally with the intention to enhance job competencies through review, renew and develop the critical knowledge, skills and emotional intelligence as professionals (Goodall, Day, Lindsay, Muijs & Harris, 2005).

Besides formal sessions such as short courses and workshops, CPD activities go beyond activities to include individual and collaborative activities which enhance knowledge and skills related to students, curriculum, teaching practices and research competencies. Academics' conversations and discussions with colleagues in the same fields using established practices and organised around specific teaching and learning framework will also provide a source of professional learning (Danielson, 2007). In return, short these initiatives are expected to improve practices in core functions as academicians.

The academicians need CPD that is holistic, current and addresses the progression of their core functions in teaching, research and consultancy. Academicians are also required to improve their knowledge and skills in relation to their subject areas of expertise or contents knowledge that they are teaching and in research activities which will ultimately help increase their quality of publication as the outcome from the research activities (Partington & Stainton, 2003).

Malaysia aspires to become a higher education hub in the region and a high income nation by 2020. The government's effort to achieve these can be traced back to several documents such as the 10<sup>th</sup> Malaysia Plan 2011 – 2012 and the 11<sup>th</sup> Malaysia Plan 2016 - 2020. As a point of reference, the *10<sup>th</sup> Malaysia Plan, 2011 - 2015* stresses the need for the country to have "critical mass of knowledge workers such as scientists, engineers, patent agents and 'technopreneurs'" who are globally competitive (Economic Planning Unit, 2010, p.223). Such an emphasis definitely requires the academicians to possess the required knowledge and skills especially now we are in the Industrial Revolution 4.0 era with the VUCA (volatility uncertainty complexity ambiguity) scenario.

In Malaysia, the Malaysian Qualification Agency (MQA) was established in 2007, specifically tasked to monitor the quality of higher education in the country. The monitoring is essential to ensure the quality of higher education in this country is at par with that being offered elsewhere (Ministry of Higher Education, 2007).

### 3. PROBLEM STATEMENT

Public universities have experienced intense pressure to perform well in order to be in a better position to compete on a global level and attain world-class status particularly with the pressure on university ranking exercise (Mok & Wei 2008; Mok, 2010). In this context, public universities in Malaysia are also pressured to perform better in line with aim to make Malaysia as higher education hub in the region (Ministry of Higher Education, 2015).

Universities need to adopt the right approach as well as provide the academicians with the right training tools to include skills needed for a more complex working environment (Pe Symaco, 2019). It is important for the universities to ensure that they support the types of CPD that have positive impacts on knowledge, belief, practice and students' outcomes (Roesken, 2011). The proper framework with viable policies on CPD and policies' implementation processes within the institutions should also be able to assist academicians' self-improvement (Soaib & Suffean, 2012).

Theoretically, Continuous Professional Development (CPD) for the academicians would be able to enhance quality of teaching, research and consultancy services. The HEIs are expected to contribute to the development of the nation. The concerns over the quality of graduates particularly on employability skills are deemed relevant as identified by various studies about employability among Malaysian graduates (Ilhaamie, Rosmawani & Yusmini, 2018). Among the skills are the problem solving and communication skill, technical knowledge, personal attitudes and other skills which can be classified as soft and task-related skills. Students' knowledge, skills and job competencies are essential to guarantee employability of the graduates.

It is envisaged that quality of teaching, research and consultancy can be achieved through CPD of the academicians. Annyza Tumar, Soaib Asimiran, Zaidatol Akmaliah Lope Pihie and Ismi Ariff Ismail (2015) conducted a study on sustaining continuous professional development for quality teaching and learning in higher education. They conducted the CPD aspect on teaching and learning in private HEIs and focusing on the role of policy and policy implementation. This study looks from a different perspective. The focus is on the public universities looking into the current needs of the academicians in the core functions of teaching, research and consultancy. The perspective from the public universities is pertinent so that future comparison could be made in relation to CPD across higher education institutions in Malaysia.

## **4 RESEARCH OBJECTIVES**

The objective of the study is to explore the continuous professional development needs of the academicians as well as the issues and challenges faced to implement CPD in Malaysian public universities.

Specifically, the objectives are:

1. To ascertain the CPD needs of the academicians in the Malaysian public universities;
2. To explore how the public universities support the various CPD needs of the academicians;
3. To identify the issues and challenges encountered to strengthen CPD in public universities.

The research questions are:

1. What are the CPD needs of the academicians in the Malaysian public universities?
2. How can the institution better support the CPD needs of the academicians?
3. What are the issues and challenges encountered to strengthen CPD in public universities?

## **5 METHODOLOGY**

This study aims at examining into the CPD needs of the academicians, the institutional support and the issues and challenges faced. The emphasis is on the policies, practices, and the processes of CPD in the public universities. This nature of inquiry would benefit from the research paradigm offered by the qualitative methodology. Utilizing qualitative approach we analysed the perspectives of both academicians and the administrators of a Malaysian public university, the issues and challenges as well as institutional support given related to continuous professional development of the academics. Data are drawn from in-depth interviews with academicians and university administrators as well as analysis of relevant documents. Informants were purposely selected based on the capacities as senior academicians and administrators who are responsible with academic trainings. Altogether five senior academicians and two administrators were interviewed.

## **6 FINDINGS**

Three major themes emerged comprising commitment to addressing diversified needs for CPD, strong commitment to Continuous Professional Development for the academics, and institutional support for CPD. Interestingly, the public university studied has a well-documented policies on CPD implementation and proper structures, backed by material support and departments or centres specifically tasked to oversee that the CPD practices adhere to institutional policies and aspirations. Both the academics and administrators have the consensus that CPD is one key factor to enhance the quality of the academics in their core roles and responsibilities.

### **6.1 What are the CPD needs of the academicians in the Malaysian public universities?**

#### **6.1.1 Multiple and Diversified Needs on CPD**

The needs of the academicians are multiple and diversified covering teaching and learning, research and publication, and industrial and community relations as well as other relevant aspects as a government servant. Two types of academicians can be identified, namely the novices academicians and the experienced academicians. Through the formal model, the novice academicians need to have CPD in these aspects: (i) content mastery (basic mastery of the contents), (ii) pedagogical knowledge and skills, (iii) classroom approaches to teaching contents, (iv) students management, and (v) assessment strategies. These are to be conducted in standards-based workshops during their early stage when start joining the career as academicians.

The experienced academics, on the other hand, are more concern with the enhancement of the contents mastery through their own research activities and publication. Ultimately, this will lead them to research-led teaching. To them also, CPD in pedagogical knowledge and skills should focus on maintaining student engagement, especially in light of larger class sizes, increasingly diverse student population and the need to shift from teacher-centred to student-centred approach, and infusion of the latest methods of teaching and learning support, such as blended-learning, flipped classroom and problem-based learning.



The needs on these aspects could be supported by the formal model and informal model as well as formulated policies and allocation of financial resources.

## 6.2 How can the institution better support the CPD needs of the academicians?

### 6.2.1 Strong commitment through proper policies to address quality Continuous Professional Development for the academicians

The strong commitment to addressing quality Continuous Professional Development for the academics is obvious from the interviews and document analysis. The evidence to this apparent state of being is strengthened by the presence of established training and development structures in the selected university. The structures are well organized and all inclusive implementation processes and the presence of a generic training and development framework for the academicians. The university has a well-established academic centre to cater for the development of academicians in teaching, research and consultancy services (now is widely named as industrial and community engagement). A principal message that vividly clears is the commitment of the public university and the relevant authorities to the improvement and enhancement of CPD. This is proven not only in the policy documents on quality, but also the resources committed to it, even though with the shrinking budget.

Explicitly the commitment to addressing CPD from top to down is translated on the ground as substantiated by the following areas of interests:

1. Curriculum contents – academicians are required to possess contents knowledge in the areas of teaching and learning;
2. Pedagogical knowledge & skills – academics have to master the pedagogical and skills in delivering the contents of the curriculum;
3. Research-led teaching – academics are expected to relate their teachings with research conducted so theories and practices are blended;
4. Industry related curriculum – academics have to relate curriculum delivery and contents with industry so that the issue of producing industrial related graduates can be tackled.

In practice, the CPD implementation processes were found to be coherently laid with clear expectations and communicated to the relevant departments and staff. There is a well-specified department which is entrusted to oversee the CPD. These various needs are addressed through proper and planned CPD programmes throughout the year. Academics have to fulfil certain numbers of training in relevant areas for their professional development.

## 6.3 What are the issues and challenges encountered to strengthen CPD in the public universities?

### 6.3.1 Institutional support

In general, the HEIs are very supportive of CPD for improvement of teaching and learning, research and industrial relations.

Department heads and the HEIs' senior management chose to take a positive approach to CPD. Both academics and university administrators concurred that the institutions provided relevant support for CPD. There are areas in which support was particularly strong and other areas which the institution strive to enhance the support. Various issues and challenges with regard to financial as well as institutional policies are being strengthened to equip the academics with the IR 4 requirements so as to make the academics remain relevant, referred and respected in their functions.

Improvements in CPD are still possible, after careful consideration of the various factors involved, including the institutions' financial resources. Policies related to CPD are well formulated. However, revision on the implementation can improved the policies.

## 7 DISCUSSION

Strong commitment to address CPD resonated resoundingly from the interviews and documents on CPD implementation in the public university. Both the academicians and the administrators show a great deal of interest in continuous professional development and enhancement of the quality in teaching and learning, research and publication, and industrial linkages. Such dedication is reported to have translated in the amount of time, energy and resources intended for continuous professional development.

At the broader level, Malaysia's vision 2020, its National Higher Education Strategic Plan Beyond 2020 and Malaysia Education Blueprint 2015 – 2025 put the emphasis on excellence in education which is laid down to be pursued through continual improvement initiatives in professional development of the academics. Therefore, the current higher education policy has a lot of objectives contingent upon the success of continuous professional development implementation. It is not surprising that the commitment to continuous professional development is realized across the tiers of HEIs' management through relevant policies and financial allocation.

It is accepted that the continuous professional development initiatives are conducted to achieve several objectives and among them is the improvement in teaching and learning, research and consultancy services. All informants agreed that the institutions are doing the best, given that there is constraint in financial support. HEIs have to manage their financial resources well since they could not rely on government funding.

Above all, addressing the diversified needs of the academics, the strong commitment to continuous professional development together with institutional support show that the commitment to quality improvement in education among the universities in Malaysia is obvious. At the national level and institutional level, the interest to create a proper framework for continuous professional development in teaching and learning, research and consultancy will ultimately boost the ranking of Malaysian universities globally.

## 8 CONCLUSION

CPD for academicians to improve their teaching, research and consultancy needs institutional support through proper CPD framework to be sustainable and successful. The academicians' CPD needs are multiple and diversified covering teaching and learning, research and publication, and industrial and community engagement. Therefore, systemic institutional support that works is one that does not rely on top-down policy implementation on CPD but also bottom-up feedback from the academicians on their specific needs for CPD.

The commitment to improve continuous professional development at the selected university is strong and this was match with an equal policies and actions. Despite the initiatives, challenges in enhancing the quality of the academicians remain an issue to be tackled especially in the next couple of years, the expected completion of the Malaysia Education Blueprint 2015 – 2025 cycle. Nevertheless, it is reiterated here that the public university in this case is serious in continuous professional development of their academicians. Various issues and challenges with regard to institutional governance as the framework and policies are being strengthened to equip the academicians with the Industrial Revolution 4.0 (IR 4.0) requirements so as to make them remain relevant, referred and respected in their functions.

## REFERENCES

- Annyza Tumar, Soaib Asimiran, Zaidatol Akmaliah Lope Pihie and Ismi ariff Ismail (2015). Sustaining continuous professional development for quality teaching and learning in higher education: The role of policy and policy implementers. *TOJET: The Turkish Online Journal of Educational Technology*, Special Issue for INTE 2015, September, 527-534.
- Biggs, J. (2001). The reflective institution: Assuring and enhancing the quality of teaching and learning. *Higher Education*, 41, 221-238.
- Blase, J., & Blase, J. (1999). Principals' instructional leadership and teacher development: Teachers' perspectives. *Educational Administration Quarterly*, 35(3), 349-378.
- Economic Planning Unit (2010). *Tenth Malaysia Plan*. Putrajaya: Economic Planning Unit.

- Economic Planning Unit (2015). *Eleventh Malaysia Plan*. Kuala Lumpur: Percetakan Nasional Berhad.
- Goodall, J., Day, C., Lindsay, G., Muijs, D., & Harris, A. (2005). *Evaluating the impact of continuing professional development*. Research Report 659. Department for Education and Skills.
- Hallinger, P. (2009). *Leadership for 21st century schools: From instructional leadership to leadership for learning*. Hong Kong: The Hong Kong Institute of Education.
- Hénard, F. (2010). *Learning our lesson: A review of quality teaching in higher education*. France: Organization for Economic Cooperation and Development.
- Ilhaamie Abdul Ghani Azmi, Rosmawani Che Hashim, & Yusmini Md Yusoff. (2018). The employability skills of Malaysian university students. *International Journal of Modern Trends in Social Sciences*, vol. 1. Issue 3, pp. 01 – 14.
- Kennedy, A. (2005). Models of continuing professional development: A framework for analysis. *Journal of In-Service Education*, 31(2), 235-250.
- Ministry of Higher Education Malaysia. (2006). *Report by the Committee to Study, Review and make Recommendations concerning the Development and Direction of Higher Education in Malaysia*. Shah Alam: University Publication Centre (UPENA).
- Norzaini Azman. (2019). The Malaysian academic profession in transition. In Chang Da Wan, Morshidi Sirat & Dzulkifli Abdul Razak (Eds). *Higher Education in Malaysia – A Critical Review of the Past and Present for the Future*. 75 – 94. Bandar Baru Nilai, Negeri Sembilan: Penerbit Universiti Sains Malaysia & Penerbit Universiti Sains Islam Malaysia.
- Mok, K. H. & Wei, I. P. (2008). Contested concepts, similar practices: The quest for the global university. *Higher Education Policy*. 21(4): 429-438.
- Pe Symaco, L. (2019). The university: Evolving perspectives. In Chang Da Wan, Morshidi Sirat & Dzulkifli Abdul Razak (Eds). *Higher Education in Malaysia – A Critical Review of the Past and Present for the Future*. 153 – 163. Bandar Baru Nilai, Negeri Sembilan: Penerbit Universiti Sains Malaysia & Penerbit Universiti Sains Islam Malaysia.
- Partington, P. & Stainton, C. (2003). *Managing Staff Development*. Buckingham: Open University Press.
- Roesken, B. (2011). *Hidden Dimensions in the Professional Development of Mathematics Teachers*. Netherlands: Sense Publishers.
- Salmi, J. (2009). *The challenge of establishing world class universities*: World Bank Publications.
- Soaib Asimiran & Suffean Hussein (2012). *University Governance: Trends and Models*. Kuala Lumpur: University of Malaya Press.

# **HUMAN RESOURCE DEVELOPMENT (HRD)**

## Workplace Incivility: The Impact on the Malaysian Public Service Department

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### ABSTRACT

*Workplace incivility has become prevalent in most modern organisations. Although many studies have been conducted on workplace incivility across different countries, limited studies have looked into workplace incivility behavior, specifically in the Malaysian public service context. These acts have been characterized as low-force deviant behavior, and are distinguished as ambiguous intention to harm the targets. Uncivil practices including distinctively impoliteness, rudeness, and showing disrespectful attitudes towards others. The variable involved in this study are psychological contract, job satisfaction, work stress, knowledge sharing and work engagement. This study employed a cross sectional survey of employees in the Malaysian public service departments. From the 300 survey forms being distributed through the electronic medium, a sample size of 180 responded. Partial Least Square (PLS) was used to analyse and assess the measurement and the structural model of the study. The result shows that incivility was negatively associated with the psychological contract, job satisfaction, work stress and work engagement. However, workplace incivility does not impact knowledge sharing in the organisation. Consequently, this study contributes to the literature on the impact of workplace incivility in the local context that involves public service department and unfold the implication of workplace incivility behavior in the non-western context.*

**KEYWORDS:** workplace incivility, psychological contract, job satisfaction, work stress, knowledge sharing, work engagement

## 1.0 INTRODUCTION

Workplace incivility has drawn a phenomenon among researchers specifically on the daily contemporary life in organisation (Lim, 2011). Schilpzand, Pater and Erez (2016) mentioned that due to this behavior targets experienced various outcomes such as attitudinal, cognitive and behavior outcome. Negative health and organisational outcomes were found to be associated with workplace incivility (Lanzo, Aziz & Wuensch, 2016; Laschinger, Wong & Grau, 2012; Oyeleye, Hanson, O'Connor & Dunn 2013). This negative behavior is not just an unethical behavior but contributes to tangible and intangible costs.

Victims often conceal their feelings which eventually effect their well-being and work performance and eventually harm the performance and productivity of the organisation (Hur, Moon & Jun, 2016). A local empirical study by Ismail, Poon and Arshad (2018) among 463 employees in a Malaysia public service department concluded that this negative behavior implicates the productivity of the organisation.

Despite of its implication to the human resource development and organisation performance, lack of study has look into the implication of workplace incivility. Ismail, Poon and Arshad (2018) also identified that research on the effects and how it impacts organisations in Malaysia are limited specifically looking in the context of public service department. In this research, we will look into workplace incivility and its implication in the context of public service department involving the following variables i.e., job satisfaction, work stress, physiological contract, knowledge sharing and work engagement. It is essential

for the government to look into these variables as it implicates the working environment context in the public service organisation. Given the implication due to this negative behavior, HRD practitioners would benefit from this research specifically in policy making and practice. Hence, provide better understanding on the consequences due to workplace incivility.

This paper is organized as follows: we begin by reviewing the implication of workplace incivility and the research gap in this study. Secondly, we explain the concept and various behavior of workplace incivility. Third, we highlighted workplace incivility in the public service department. Next, we explain the theoretical framework and variables used in this study. We also describe Social exchange theory as the theoretical foundations to support our framework. This is followed by the research design, results, discussion and conclusion of this study.

## **2.0 UNDERSTANDING WORKPLACE INCIVILITY**

Workplace incivility is a type of maltreatment in the organisation which includes covert type of aggression and this behavior demarcates from overt aggression. This negative behavior is known as low intensity and do not have the aim to detriment others (Pearson, Andersson & Wegner, 2001). Example of workplace incivility are rude to others, sarcastic, do not cooperate and mocking to others. Other examples of such behavior are rudeness, excluding of others, being sarcastic, belittling others, mocking, and not being cooperative (Pearson and Porath, 2005; Lim & Cortina, 2005). Hence, it is considered as lower level intensity behavior compared to workplace violation. In most cases, it is brushed off and treated as part and parcel of work place attitude (Pearson & Porath, 2009). At present, there are no written rules and regulation that imposed to the offenders due to the difficulty in measuring and identifying incivility behavior.

## **3.0 WORKPLACE INCIVILITY IN THE PUBLIC SERVICE DEPARTMENT**

Public service department responsibilities could be carried out in a harmonious work environment that include having employees with high civil behavior. There are many provisions and regulations in place for the misconduct of civil servants. However, the act of incivility is not treated the same way or as severe as other work-related crime such as failure to attend work, under the influence of drugs, severe debts, sexual harassment and physical abuse. The issues on such behavior should be looked into in order to enhance the performance and work quality of Public service department in Malaysia (Abdulah & Halim, 2016). In the local context, not many studies have looked into the relationship between incivility and its impact specifically in the public service department.

## **4.0 SOCIAL EXCHANGE THEORY**

We employ social exchange theory in this context of this study. Workplace incivility usually happens when one party reacts in a certain way towards another who is in a position of authority e.g. in the workplace. A theory that best explains this is the Social Exchange Theory (SET). This theory can be looked at from the sociology perspective where interactions between two parties whether positive or negative in nature would lead to a social change or stability (Sears & Humiston, 2015). SET can be said to be like a cost benefit analysis between parties where benefits have to outweigh the cost to procure a positive response if not a party may prefer a negative reaction. This theory has been well known used in various negative behaviour study (Alias, 2013).

## **5.0 THEORETICAL FRAMEWORK**

The selection of independent variables and the dependent variables reflected the limitations that this study places. Various researchers have identified that workplace incivility implicates employees' job satisfaction (Cingöz & Kaplan, 2015), work stress (Shabir, 2014), psychological contract (Griepa & Vantilborg, 2018) and knowledge sharing (Mesmer-Magnus & DeChurch, 2009). Thus, the framework of this study were derived from the previous researchers' study.

### **5.1 Workplace Incivility and Job Satisfaction**

Different authors have different definition of job satisfaction. Jalagat (2016) postulated that job satisfaction as an effective direction on employees specifically given to their designated roles which the employees are involved. Job satisfaction also refers to the extent employees feel satisfied about his or her job (Alias, 2013). Various studies have reported that employees who are either the targets or even instigators having low levels of job satisfaction (Schilpzand, De Pater, & Erez, 2014; Reio & Ghosh, 2009). Another study was done in Turkey to examine the relationship of workplace incivility on employee's job satisfaction. The study involved 123 administrative personnel and the outcome of the study indicated that there is a negative relationship between workplace incivility and job satisfaction (Cingöz & Kaplan, 2015). Therefore, we propose;

H1: There is a negative relationship between workplace incivility and job satisfaction among employees in the public service department.

### **5.2 Workplace Incivility and Work Stress**

The common definition given for work stress is the responses to the demands of a job or an activity that demands more than the capacity or ability of an individual which contributes to the social well-being of that individual (Spector, 1998). Work stress describes the job-related discomfort that an employee experience because of their work situations (Alias, 2013).

Work stress may occur in different circumstances but more often the situation could be worse for organisation that did not focus on support system that makes the organisation context worse especially when they do not have a support system from their supervisors, co-workers or others. A study by Shabir (2014) involves samples of employees working at six different well established public and private sector agencies found similar results. Cho, Bonn, Han and Lee (2016) postulated that employees who are exposed to stress have an effect on their work behavior and performance. A study verified in China's hospital setting shows that workplace incivility has significant relationship with nurses burn-out where anxiety played the role of mediator (Shi et al., 2018). The study took the sample of nurses working less than 3 years from a hospital in China.

Hence, we propose the following;

H2: There is a negative relationship between workplace incivility and work stress among employees in the public service department

### **5.3 Workplace Incivility and Psychological Contract**

Psychological contract was known as reciprocal exchange relationship between an employer and the employee of an organisation (Rousseau, 2001). Shruthi and Hemanth (2012) defined this relationship which exists between the employee and the employer in the organisation that requires common understanding and expectations in terms of contributions and outcomes. In the Human Resource perspective, it is also commonly known as actual and unwritten expectation between the employer and the employee in an organisation. However, if it is known as psychological contract breach if either the employer or employee did not meet the expectations (Morrison & Robinson, 1997).

In a research by Griepa and Vantilborg (2018), their empirical result indicated that accumulation of psychological contract breach for the course of 10 weeks was positively related with the escalating of negative behavior feelings. Zhao, Wayne, Glibkowski, and Bravo's (2007) in their meta-analysis highlighted that psychological contract breach provides an important framework in understanding corporate relationships with employees and customers. It is also identified that psychological contract breach has relationship with an individual's negative behavior responses as a result of interpersonal offenses (Zagenczyk et al., 2014). Therefore, we propose;

H3: There is a negative relationship between workplace incivility and psychological contract in the public service department.

#### 5.4 Workplace incivility and Knowledge Sharing

Knowledge sharing is an important activity in the organisation which assists employees to be more resourceful and versatile especially in accepting changes in the organisation. Hence, knowledge sharing is a powerful tool for organisation to sustain and survive. Employees' knowledge sharing is a cooperating process of interpersonal communication that involves the exchange of resources between two sides (Shi et al., 2016). Hwang, Lin and Shin (2018) mentioned that employees are expected to share knowledge within their colleagues. The fact is lack of knowledge sharing hinder the knowledge transfer within the organisation even though it is not harmful (Bogilovic, Cerne & Skerlavaj, 2017). A study on workplace incivility and knowledge sharing was conducted in Iran to determine the relationship between workplace incivility and knowledge sharing. The finding provided the evidence that due to workplace incivility causes the employees to keep the information within themselves and avoid knowledge sharing among colleagues that subsequently effects the team performance of the organisation (Mesmer-Magnus & DeChurch, 2009). The results of the study also indicated that the intention to share knowledge has positive relationship and significantly associated with workplace incivility ( $\beta = 0.29, p < 0.01$ ). We propose;

H4: There is a negative relationship between workplace incivility and knowledge sharing in the public service department.

#### 5.5 Workplace Incivility and Work Engagement

Giumetti et al., (2013) defined work engagement as a positive and fulfilling state of mind that is characterised by energy, commitment, and involvement. Employee with work engagement dedicated to their work and tend to spend more time and effort to perform their job. Research on workplace incivility has highlighted that there is a strong relationship between workplace incivility and low work engagements (Porath & Pearson, 2013).

Survey results have indicated that incivility has caused adverse effect on employee's behavior. For example, Porath and Pearson (2013) survey highlighted that 25 percent of employees who have experienced incivility contributed fewer ideas and engaged less. A poll of 800 managers in 17 industries were investigated and the phenomenon of incivility indicated that 48 percent employees decreased their effort on their daily work, 47 percent decreased the time spent on work intentionally and 38 percent decreased the quality of work. Another finding on restaurant frontline service employees indicated acts of incivility significantly contribute to the performance of the employees. Hence, due to workplace incivility lead to low engagement at work which affects the service provided to the customers (Cho, Bonn, Hann & Lee, 2016). We propose the following;

H5: There is a negative relationship between workplace incivility and employee engagement in the public service department.

To conclude, this research highlights the impact of incivility with the following factors, i.e., job satisfaction, psychological contract, knowledge sharing, and work engagement.

#### 6.0 RESEARCH DESIGN

This study is conducted based on the quantitative approach in order to achieve its objectives. The population referred to in this study is the public service department in Putrajaya. Population was defined as the group that can be generalized (Salkind, 2006). Considering the fact that most central ministries and agencies are located at the heart of Putrajaya being the central administration centre of the Government of Malaysia, this study focus on employees from the public service department. The category of employees were chosen as the population of the study owing to the fact that majority of the tasks such as administration, finance, information technology, procurement, human resources management and customer service is mainly handled by the mid-level management category (Griffin, 2010). They play an important role as team members in completing their tasks before submitting it to their higher or senior officials regarded as holding the premier posts in the public service department. In this study, the respondents selected are from



Grade 29 to Grade 54 in various government schemes in all ministries located in Putrajaya. These category of employees from level Grade 29 to 54 were chosen as they are the main key players who runs the administration part of the civil service. These group of people are also responsible to both their higher superiors, subordinates as well as people under their supervision. With this regards, the communication they have to deal is greater compared to people at the premier level posts or the clerical level posts. As communications increases amongst many parties, the chances of incivility are far greater at this level compared to top management.

In order to select sampling units from the population, probability sampling is used to get accurate representation of the population. Probability sampling would enable a sample that is collected to precisely represent the population. Probability sampling gives us best chance to create a sample that is truly representative of the Malaysian Civil Servants. For data collection, respondents were to answer the questionnaire provided through the online link given. This method was involve based on the current trend of data collection as it was the fastest and most convenient way to get the respondents to reply and respond the survey. The current generation of public service department employees are also IT-Savvy and they have direct internet access to emails. They could also answer the survey using their smart phones.

## **6.1 Participants and procedures**

In this study, the age group and the majority of the respondents were from the age group 31-40, with 110 respondents ( $\approx 60.8\%$ ), followed by the respondents between the ages of 41-50, with 52 respondents ( $\approx 29.3\%$ ). Age groups are from 51-60, with 9 respondents ( $\approx 5\%$ ). The rest of the respondents were divided between age group 20-30, with 8 respondents ( $\approx 4.4\%$ ), and above the age of 60, with 1 respondent ( $\approx 1.3\%$ ). Most of the respondents in this study were female ( $\approx 57.5\%$ ), compared to male respondents which involves only 42.5%. In this study, majority of the respondents were married, with 144 respondents ( $\approx 80.1\%$ ), compared to unmarried respondents ( $\approx 16.0\%$ ). In this study, the majority of respondents has been working with the current organisation within 1 to 5 years, with 59 respondents ( $\approx 33.1\%$ ). This number is followed by working experience of 10 to 15 years with 56 respondents ( $\approx 30.9\%$ ) and 26 respondents ( $\approx 14.4\%$ ) were with the organisation within 5 to 10 years. Respondents having less than one year of experience were 21 ( $\approx 11.6\%$ ), trailed by 15 to 20 years having 10 respondents ( $\approx 10.6\%$ ), and more than 20 years of experience involved only 8 respondents.

## **6.2 Instruments**

The survey instruments are adopted from various studies in the area of workplace incivility. Workplace incivility instrument is derived from Shim (2010) and job satisfaction derived from Brayfield (1951). As for work stress it was adopted from Mackie, Holahan, Gottlieb (2001), knowledge sharing intention from Shim, (2010), psychological contract construct is from Robinson (2000) and work engagement construct was from Schaufeli (2006).

## **7.0 RESULT**

### **7.1 Measurement Model**

The data analysis was performed with the aid of the Smart PLS 3 software package. The PLS offers a technique that simultaneously evaluates the measurement and structural model in a single and inclusive procedure. For the measurement model, the uni-dimensionality of each latent construct was assessed using the composite reliability (CR) with a threshold value of 0.70. As shown in Table 1, the CR values for all the constructs exceeded 0.70, and all the factor loadings are greater than 0.600. Therefore, the measurement model satisfies the conditions for internal consistency reliability (Hair et al., 2017).

**Table 1.** Results of the measurement model

Variable	Cronbach Alpha	CR	AVE	# of items	Factor Loading
Workplace Incivility	0.935	0.943	0.525	20	0.630 – 0.817
Job Satisfaction	0.919	0.934	0.713	6	0.761 – 0.917
Work Stress	0.914	0.931	0.658	7	0.759 – 0.857
Knowledge Sharing	0.924	0.929	0.726	5	0.743 – 0.921
Psychological Contract	0.843	0.886	0.646	5	0.600 - 0.852
Work Engagement	0.910	0.927	0.646	8	0.645 – 0.889

In assessing the convergent validity, we examined the average variance (AVE) extracted for all constructs. All the AVE values exceeded the cut-off point of 0.50, thereby indicating high convergent validity (Fornell and Larcker, 1981). Moreover, the discriminant validity was assessed by comparing the square root of the AVE for each construct with the pair of correlations between other constructs (Fornell and Larcker, 1981). As presented in Table 2, our measurement model fulfils the conditions for discriminant validity because the square root of AVE for each construct (i.e., the diagonal elements) is of higher magnitude than the correlations of the construct with other constructs (i.e., the off-diagonal elements).

**Table 2.** Results of Discriminant Validity

Variables	1	2	3	4	5	6
1. Incivility	<b>0.725</b>					
2. Job Satisfaction	-0.230	<b>0.844</b>				
3. Knowledge Sharing	-0.054	0.169	<b>0.852</b>			
4. Psychological Contract	-0.264	0.425	0.175	<b>0.783</b>		
5. Work Engagement	-0.218	0.677	0.346	0.385	<b>0.804</b>	
6. Work Stress	0.519	-0.372	-0.047	-0.307	-0.283	<b>0.811</b>

## 7.2 Structural Model

The hypothesized relationships were tested using the significance levels of the path coefficient (i.e., beta) and the coefficient of determination ( $R^2$ ) (Hair et al., 2013). As shown in Table 3, incivility was a significant predictor of job satisfaction ( $\beta = -0.230$ ,  $p < 0.001$ ), psychological contract ( $\beta = -0.264$ ,  $p < 0.001$ ), work engagement ( $\beta = -0.218$ ,  $p < 0.01$ ) and work stress ( $\beta = 0.519$ ,  $p < 0.001$ ). Except for work stress which is positively related to incivility, all the other factors were negatively related to incivility. However, the hypothesized effect of incivility on knowledge sharing was not supported. Therefore, H1, H2, H3 and H5 were supported, but H4 was not supported.

The  $R^2$  values of 0.048, 0.064, 0.042 and 0.266 were reported for the effects of incivility on job satisfaction, psychological contract, work engagement and work stress, respectively. Accordingly, this indicates that incivility can account for 4.8%, 6.4%, 4.2% and 26.6% variance in job satisfaction, psychological contract, work engagement and work stress, respectively. However, only work stress has a significant effect size of 0.369, the effect sizes for the other factors were less than 0.100 (see Table 3).

**Table 3.** Results of Hypotheses Testing

H	Relationships	Beta	t-value	P-value	Decision	f <sup>2</sup>
H1	Workplace Incivility → Job Satisfaction	-0.230	3.460	0.000	Supported	0.056
H2	Workplace Incivility → Work Stress	0.519	10.609	0.000	Supported	0.369
H3	Workplace Incivility → Psychological Contract	-0.264	4.434	0.000	Supported	0.075
H4	Workplace Incivility → Knowledge Sharing	-0.054	0.464	0.321	Not Supported	0.003
H5	Workplace Incivility → Work Engagement	-0.218	3.094	0.001	Supported	0.050

## 8.0 IMPLICATION AND CONCLUSION

The above result involved the relationship of workplace incivility with job satisfaction, psychological contract, work engagement and work stress. No relationship has been found between workplace incivility and knowledge sharing. The results also show that workplace incivility having the highest relationship that implicates employees' work stress in the public service department. This provide further evidence that employees exposed to stress due to this negative type of behavior. The results supported the study from Shabir (2014) which involves a sample of employees who worked in an established public and private organisation.

Shi et al., (2018) also concluded the same findings between workplace incivility and work stress. Another variable that we found a strong relationship with incivility is psychological contract. Due to incivility, this behavior damaging the relationship between employers and employees which may lead to disagreement and communication. The incidence of workplace incivility influenced the way an employee behaves. The finding from Akhtar et al., (2017) also exert a strong relationship with workplace incivility on employee's job satisfaction. The results are similar with other researchers' findings from Cingoz and Kaplan (2015) and Reio and Gosh (2009).

We also identified that workplace incivility impact employee engagement. Employee with high work engagement dedicated to their work and tend to spend more time and effort to perform their job. Their concentration is high and they tend to be engrossed and overwhelmed at work. However, due to workplace incivility, the impact causes employees to be less engaged which may reduce employee's work quality standards. Hence, workplace incivility has caused an effect on employee's behavior.

The results also indicated that workplace incivility has an effect on employees' job satisfaction. The findings is consistent with the research from Cingoz and Kaplan (2015). Reio and Gosh (2009) indicated that both the target and the instigation, having lower experience of job satisfaction due to workplace incivility. Eventually, we found that there is no impact of workplace incivility on knowledge sharing (Mesmer-Magnus & DeChurch, 2009). The result of this study is inconsistent with previous finding. In the Malaysia public service department, most of the work process are documented. Work procedure manual is also involved in order to ensure the continuity of the work process. Besides, many e-Government applications have also been introduced in order to ensure the efficiency of work flow without any disruption e.g. hiding of information from subordinates or co-workers; or absence of an employee that causes delay in the work process; or even error by feeding wrong information into the existing applications. Therefore, lead to the inconsistency of the findings.

This paper concluded that workplace incivility impact employees' job satisfaction, work stress, psychological contract, and employee engagement in the public service organisation. However, this negative behaviour does not impact the knowledge sharing of the employees. From the findings, it is essential that various department in the Malaysian public service should play an important role to reduce this negative behaviour. Employees in the Malaysia public service department should possess good knowledge on the rules that governs incivility, for instance understanding the current rules, policies and practices. The rules and regulations indicate the consequences to employees who inculcate incivility. On the other hand, workplace incivility rules and policies must be spread at all levels of management and staffs. To ensure knowledge is provided, trainings as well as updating process of the related work manuals must

be made transparent. HRD professional could also assist in contributing a conducive and ethical workplace because such environment contributes to performance and professional growth of employees (Alias, 2013). If they fail to look into this matter at initial stage, workplace incivility will disrupt the work patterns of public service department that leads to a more intense form of negative behaviour such as aggression and violence.

This study examines the impact of workplace incivility on job satisfaction, work stress, knowledge sharing, psychological contract and work engagement in the context of the Malaysia public service department. There are many other variables that can be included to make a holistic framework of the workplace incivility. Future study could look into different variable e.g. negative emotions, well-being, personality traits and perception of climates, to have a clearer understanding of the effect of workplace incivility.

This study only has limited itself to the sample of public service department employees who work in Putrajaya. Therefore, future studies may broaden its scope to State and Local Authorities level sampling to ensure the generalization of results for the overall public service in Malaysia. HRD researchers could also look into experimental studies to raise the awareness of workplace incivility that may lead to the decline of workplace incivility.

## REFERENCES

- Abdullah, A., & Halim, F. W. (2016). The influence of work ethic and counterproductive work behavior of civil servants. *Journal of Technology Management and Business*, 3(1), 1-14.
- Akhtar, S., Luqman, R., Raza, F., Riaz, H., Tufail, H. S., & Shahid, J. (2017). The impact of workplace incivility on the psychological wellbeing of employees through emotional exhaustion. *European Online Journal of Natural and Social Sciences*, 6(3), 492-507.
- Alias, M. (2013). Workplace Deviant Behavior and the mediating role of job satisfaction among support personnel in the Malaysian local authorities. (Unpublished doctoral dissertation). Universiti Putra Malaysia, Serdang, Selangor, Malaysia
- Bogilović, S., Černe, M., & Škerlavaj, M. (2017). Hiding behind a mask? Cultural intelligence, knowledge hiding, and individual and team creativity. *European Journal of Work and Organisational Psychology*, 26(5), 710-723.
- Brayfield, A. H. (1951). An Index of Job Satisfaction. *Journal of Applied Psychology*, 35(5), 307-311.
- Cho, M., Bonn, M. A., Han, S. J., & Lee, K. H. (2016). Workplace incivility and its effect upon restaurant frontline service employee emotions and service performance. *International Journal of Contemporary Hospitality Management*, 28(12), 2888-2912.
- Cingöz, A. Y. Ş. E., & Kaplan, A. S. L. I. (2015). An examination of the mediating role of job satisfaction on the relationship between psychological empowerment and innovative behavior. *International Review of Social Sciences*, 3(2), 60-72.
- Fornell, C. and Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurements error. *Journal of Marketing Research*, 18(4), 39-50.
- Griep, Y., & Vantilborgh, T. (2018). Reciprocal effects of psychological contract breach on counterproductive and organisational citizenship behaviors: The role of time. *Journal of Vocational Behavior*, 104, 141-153.
- Girometti, G. W., Hatfield, A. L., Scisco, J. L., Schroeder, A. N., Muth, E. R., & Kowalski, R. M. (2013). What a rude e-mail! Examining the differential effects of incivility versus support on mood, energy, engagement, and performance in an online context. *Journal of Occupational Health Psychology*, 18(3), 297-309.
- Griffin, B. (2010). Multilevel Relationships Between Organisational Level Incivility, Justice and Intention to Stay. *Work and Stress*, 24(4), 309-323.
- Hair, J.F., Ringle, C.M. and Sarstedt, M. (2013). Partial Least Squares Structural Equation Modeling: Rigorous Applications, Better Results and Higher Acceptance. *Long Range Planning*, 46, 1-12.
- Hur, W. M., Moon, T., & Jun, J. K. (2016). The effect of workplace incivility on service employee creativity: the mediating role of emotional exhaustion and intrinsic motivation. *Journal of Services Marketing*, 30(3), 302-315.
- Hwang, Y., Lin, H., & Shin, D. (2018). Knowledge system commitment and knowledge sharing intention:

- The role of personal information management motivation. *International Journal of Information Management*, 39, 220-227.
- Ismail, I. R., Poon, J. M., & Arshad, R. (2018). Effects of Workplace Incivility, Negative Affectivity and Hurt Feelings on Coworker Helping. *Jurnal Pengurusan (UKM Journal of Management)*, 52, 33-45.
- Jalagat, R. (2016). Job Performance, Job Satisfaction and Motivation: A Critical Review of Their Relationship. *International Journal of Management and Economics*, 5(6), 36-42.
- Lanzo, L., Aziz, S., & Wuensch, K. (2016). Workaholism and incivility: Stress and psychological capital's role. *International Journal of Workplace Health Management*, 9(2), 165-183.
- Laschinger, H. K. S., Wong, C. A., & Grau, A. L. (2012). The influence of authentic leadership on newly graduated nurses' experiences of workplace bullying, burnout and retention outcomes: A cross-sectional study. *International journal of nursing studies*, 49(10), 1266-1276.
- Lim, S., & Lee, A. (2011). Work and nonwork outcomes of workplace incivility: Does family support help? *Journal of Occupational Health Psychology*, 16(1), 95-111
- Lim, S., & Cortina, M. (2005). Interpersonal mistreatment in the workplace: The interface and impact of general incivility and sexual harassment. *Journal of Applied Psychology*, 90(3), 483-496.
- Mackie, K. S., Holahan, C. K., & Gottlieb, N. H. (2001). Employee involvement management practices, work stress, and depression in employees of a human services residential care facility. *Human relations*, 54(8), 1065-1092.
- Mesmer-Magnus, J. R., & DeChurch, L. A. (2009). Information sharing and team performance: A meta-analysis. *Journal of Applied Psychology*, 94(2), 535-546.
- Morrison, E. W., & Robinson, S. L. (1997). When employees feel betrayed: A model of how psychological contract violation develops. *Academy of Management Review*, 22(1), 226-256.
- Oyeleye, O., Hanson, P., O'Connor, N., & Dunn, D. (2013). Relationship of workplace incivility, stress, and burnout on nurses' turnover intentions and psychological empowerment. *JONA: The Journal of Nursing Administration*, 43(10), 536-542.
- Pearson, C. M., & Porath, C. L. (2005). On the nature, consequences and remedies of workplace incivility: no time for 'nice'? Think again. *Academy of Management Executive*, 19(1), 7-18.
- Pearson, C., & Porath, C. (2009). *The cost of bad behavior: How incivility damages your business and what you can do about it*. New York: Portfolio.
- Pearson, C. M., Andersson, L. M., & Wegner, J. W. (2001). When workers flout convention: A study of workplace incivility. *Human Relations*, 54(11), 1387-1419.
- Porath, C., & Pearson, C. (2013). The price of incivility. *Harvard Business Review*, 91(1-2), 115-121.
- Robinson, S. (2000). Development of a measure of workplace deviance. *Journal of Applied Psychology*, 85, 349-60.
- Reio Jr, T. G., & Ghosh, R. (2009). Antecedents and outcomes of workplace incivility: Implications for human resource development research and practice. *Human Resource Development Quarterly*, 20(3), 237-264.
- Rousseau, D. M. (2001). Schema, promise and mutuality: The building blocks of the psychological contract. *Journal of Occupational and Organisational Psychology*, 74(4), 511-541.
- Salkind, N. J. (2006). Sampling and generalizability. *Exploring Research*, 85-98.
- Sears, K., & Humiston, G. S. (2015). The role of emotion in workplace incivility. *Journal of Managerial Psychology*, 30(4), 390-405.
- Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and psychological measurement*, 66(4), 701-716.
- Schilpzand, P., De Pater, I. E., & Erez, A. (2016). Workplace incivility: A review of the literature and agenda for future research. *Journal of Organisational behavior*, 37, S57-S88.
- Shabir, M. (2014). The Contribution of Workplace Incivility and Psychological Capital towards Job Stress. *International Journal of Human Resource Studies*, 4(2), 1-17.
- Schilpzand, P., De Pater, I. E., & Erez, A. (2016). Workplace incivility: A review of the literature and agenda for future research. *Journal of Organisational Behavior*, 37, S57-S88.
- Shi, Y., Guo, H., Zhang, S., Xie, F., Wang, J., Sun, Z. & Fan, L. (2018). Impact of workplace incivility against new nurses on job burn-out: A cross-sectional study in China. *BMJ Open*, 8(4), 1-9
- Shim, J. (2010). The relationship between workplace incivility and the intention to share knowledge: The moderating effects of collaborative climate and personality traits.

- Shruthi, V. K., & Hemanth, K. P. (2012). Influence of psychological contract on employee-employer relationship. *Journal of Exclusive Management Science*, 1(7), 1-10.
- Spector, P. E. (2002). Employee control and occupational stress. *Current directions in psychological science*, 11(4), 133-136.
- Zagenczyk, T. J., Restubog, S. L. D., Kiewitz, C., Kiazad, K., & Tang, R. L. (2014). Psychological contracts as a mediator between Machiavellianism and employee citizenship and deviant behaviors. *Journal of Management*, 40(4), 1098-1122.
- Zhao, H., Wayne, S. J., Glibkowski, B. C., & Bravo, J. (2007). Impact of psychological contract breach on work-related outcomes: A meta- analysis. *Personnel Psychology*, 60(3), 647–680.

## The Mediating Effect of Job Satisfaction Between Work-Related Factors and Workplace Deviant Behaviour Among Employees in The Malaysia Hotel Industry

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### ABSTRACT

*Workplace deviant behaviour is an act of behaviour that against the organisational norm and well-being of the organisation and its member or both. Workplace deviant behaviour not only exist in the hotel industry but also in various organisations including in the hotel industry Therefore, this research looked into the perspective of deviant behaviour in the hotel industry. Objective of this paper is to develop a theoretical framework to identify the factors that influence employees to engage with workplace deviant behaviour. Method used in this study is based on reviews from previous studies on workplace deviant behaviour. Among supporting materials used to support the literature reviews are from database available through the university library, such as SAGE, Google Scholar, Science Direct and ProQuest. Based on the review findings, there are two potential factors that caused workplace deviant behaviour. The first factors identified is work-related factors. The work-related factors are job autonomy and work stress. The second factors are job satisfaction which was used as the mediating variables in this research. To support the theoretical framework, social exchange theory and general strain theory were the two theories that involved to support the research framework. Social exchange theory was identified as a voluntary actions of individuals that are motivated by what they expect in returns. Meanwhile, general theory is identified as a support on the effects of strain on negative emotions. The framework developed is to provide the hotel industry experts and human resource manager to identify the potential factors which cause employees to engage in various act of deviant behaviour. The theoretical contribution of this study is the conceptual framework in which contributes towards the knowledge of significant relationship between work related factors and workplace deviant behaviour with job satisfaction as mediator. In addition, the practical contribution of this study is to assist employers and human resource experts to anticipate deviant behaviour within the organisation and to maintain a good employer-employee relationship and also to support the organisation in providing a better quality service to its customers as the hotel industry depend on human resource to deliver quality services towards their customers.*

**KEYWORDS:** Job Autonomy, Work Stress, Job Satisfaction, Workplace Deviant behaviour, Hotel Industry

### 1.0 INTRODUCTION

Robinson and Bennett, (2000) defined Workplace Deviant behaviour as an act of voluntary behaviour that violates organisation norms and threatens its well-being. Studies on workplace deviant behaviour by previous researchers has not only focus on the hotel industry but other industries as well. Among act of deviant behaviours such as stealing in workplace, taking extra hour for break or leaving early from work without permission, are type of deviant behaviour which happens within organisations (O'Connor, Stone, Walker, & Jackson, 2017). Study on workplace deviant behaviour is important as deviant could affect the organisation such as losing a huge amount of profit. As mention in a study by Narayanan and Murphy (2017), Asian countries are facing a total loss of 20 billion USD due to workplace deviant behaviour and Malaysia is included in the list.

Workplace deviant could be caused by many factors job satisfaction is among the many factor influencing act of deviant in workplace. Job satisfaction is used as the mediating variable in this paper as it has a strong influence that could lead to act of deviant. In previous literature employees tend to engage

with workplace deviance due to low satisfaction especially if they are stress and having low job autonomy. Employees who are unsatisfied with their job and also influence by work related factors perform act of deviant at workplace such as absenteeism, sabotage of organisation property, poor performance, theft and destructive rumours (Dalal, 2005). For instance, in year 2017, a study on 200 employees in the textile industry in Sri Lanka result showed a significant influence of job stress towards employee engaging with workplace deviance (Michelle & Ranasinghe, 2017). Meanwhile Claude et al (2013) mentioned that due to lack of freedom in workplace had caused employee to be emotionally exhausted and has strong tendency to perform deviant behaviour in workplace. With support from previous literature, this study found that employees with positive job attitudes show productive behaviours in the organisation, Meanwhile, those with negative job attitudes engage with destructive work behaviours such with a low job performance (Balogun et al, 2016).

Studies on employee's deviant behaviour in hotel industry has come to researcher's attention internationally for the past years. The hotel industry depends on the employees in providing excellent services towards customers. This is because, the hotel industry is a service-oriented organisation (Tuzun & Kalemci, 2017). Researcher also underlined in their study that, hiring skilled employees in the service industry is a challenge need to face by the industry (Tuzun and Kalemci, 2017). Employees with a positive character and behaviour are able to deliver an effective service to which satisfy the customers. Hwang et al, (2014) study in Korea hotel industry discusses that employee's turnover intention does influence by work stress factors. Meanwhile, a case study among employees in Turkey hotel industry shows evidence of work-related factors as the predictors of deviant behaviour among the hotel employees (Tuzun & Kalemci, 2017).

Industries in Malaysia has been affected by workplace deviant and many researchers have been focusing on deviant among employees in various industries. For example, Alias and Roziah's research is among the Malaysian government employees. Another research on deviant studies in the hotel industry itself are Faridahwati in year 2003 and Aizat in 2014, they indicate that workplace deviant behaviour do exist and effecting the organisation performance in the Malaysia hotel industry. Therefore, it is essential for this study to highlight the factors influencing employees to engage with workplace deviant behaviour.

Malaysia hotel industry is well known to be a highly potential service industry that is contributing towards the Malaysian economy (Bustamam, Teng, & Abdullah, 2014). Total of tourists in Malaysia has risen from year 2010 to year 2014. The number has risen from 24.48 million to 27.44 million in just four years (Tourism Malaysia, 2015). Previous researchers have mentioned that studies on deviance behaviour is limited (Kozako, Safin, & Rahim, 2013). In year 2015, Kasa and Hassan, (2015) conducted a study on frontline employees in Malaysia hotel industry, result shown that employees tend to engage with burnout when they are not satisfied with their job. Hotel industry relies on human resource to provide quality services towards customers, so, it is important to fill the gap existed in this fields by extending the study of work-related factors influencing workplace deviant behaviour among employees in the Malaysia hotel industry. Thus, this paper will study the influence and impact of work-related factors has on employee's workplace deviant behaviour in Malaysian hotel industry with the support of existing theory which will be highlighted in this study.

## **2.0 WORKPLACE DEVIANT THEORY**

### **2.1 Social Exchange Theory**

Social exchange theory developed by Blau, (1964) is defined as a mutual exchange behaviour between individuals and has been adopted by many researchers (e.g., Balogun et al., 2016; Tuzun & Kalemci, 2017). The framework of Social exchange theory provides understanding between the relationship of employers and employees. This is because, the framework influences the exchange behaviour in organisation and the framework support that deviant behaviour brings negative impact towards the organisation effectiveness (Tuzun & Kalemci, 2017). Alias et al. (2013) has also applied social exchange theory in their study to explain the relationship of factors influencing employee's behaviour in workplace.

Earlier researchers had used social exchange theory in their studies. Among researcher who had used social exchange theory to support mediating effect of job satisfaction and workplace deviant behaviour is Aminah and Zoharah (2014). In their research, SET is used to reduce the deviant behaviour through workplace spirituality and job satisfaction through bringing satisfaction towards individual and receive fair



returns from the relationship. Aminah and Zoharah (2014) also suggested that there is possibility for employees to engage with workplace deviance behaviour due to job dissatisfaction. Hence, Social exchange theory is used in this paper to explain the relationship of mediating effect workplace deviant and job satisfaction (Figure 1).

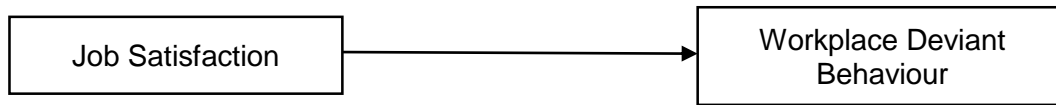


Figure 1: Relationship support by Social Exchange Theory

## 2.2 General Strain Theory

Undesirable behaviour engaged by employees is an act by individual who often experience stress at workplace. This is as an act of the employee to reduce their stress (Alias et al., 2013). Agnew, (2001) study on general strain theory recognises stresses or strain will cause deviant behaviour. General strain theory focuses on strain factors that cause strain to employees in organisation (Silva & Ranasinghe, 2017). Negative emotion is identified as the cause that has high influence on deviant behaviour. Anger, frustration and depression are among the negative emotions experience by employees who engage with deviant behaviour. Radzali, Ahmad, and Omar, (2013) indicate that general strain theory addresses that strain is highly related to the existence of deviant behaviour within the organisation.

In Sri Lanka, study on the impact of work stress on deviant behaviour also has employed general strain theory to support the relationship of deviant behaviour and work stress (Silva & Ranasinghe, 2017). Study by Agnew (2001) indicate that autonomy at work could cause strain and lead to act of negative behaviour at workplace. Another study has suggested the influence of work related factors towards deviant behaviour I supported by the theory as general strain theory is recognised in analysing the relationship of an individual engaging with stress and their connection with deviant behaviour (Alias et al., 2013). Therefore, this paper used general strain theory to link the relationship between work- related factors (work stress and job autonomy) with deviant behaviour (Figure 2).

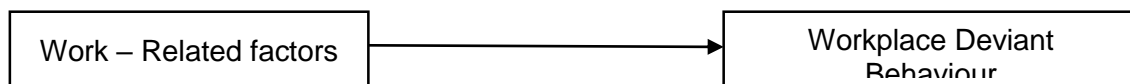


Figure 2: Relationship support by General Strain Theory

## 3.0 JOB SATISFACTION AS MEDIATING VARIABLE

Job satisfaction is “a positive feeling on a job causing from an evaluation of its characteristics (Robbins and Judge, 2013). Khuzaeni and Solimun (2013) in their study refers job satisfaction as “job satisfaction was the emotional attitude of fun and loving his job. This attitude was reflected by the morale, discipline and work performance”. Meanwhile another researcher, Chughati and Perveen (2013) has defined job satisfaction as concerning individual feeling or state of mind related to the job. There is various way to define job satisfaction as different researcher has used different terminology in defining the concept of job satisfaction. As mentioned by Dalal (2005), act such as theft and absentees has been performed by employees when they are not satisfied with their work and this could also influence by other factors that cause the employees to be dissatisfied with their work. Somehow in the element that relates work and human situation, job satisfaction does influence human behaviour. In this paper, job satisfaction is the mediating variable between the work-related variables and workplace deviant.

### 3.1 Workplace Deviant Behaviour and Job Satisfaction

Earlier in this paper, job satisfaction is employed as the mediating variable between work – related factors and workplace deviance. Researchers have addressed the relationship between deviance behaviour in workplace and job satisfaction. Among early researcher that has conducted study in these relationships

is Bennett and Robinson, (1995). Employees who are not content with their work happened to encounter with workplace deviance more as it is describe to let go of emotion tension (Srivastava, 2012). Prior researcher has also conducted a meta- analysis on the relation of workplace deviance and job satisfaction. Result shown that employees who are not satisfied with their job encounter with deviance behaviour at workplace such as absenteeism, sabotage of organisation property, poor performance, theft and destructive rumours (Dalal, 2005).

A study on workplace deviant behaviour using a total of 101 respondents in Intel located in Nigeria result a positive effect on workplace deviant behaviour. The significant findings from the research contributes a strong support towards lack of dissatisfaction among employees affected positivity attitude in workplace and directly influence individual performance in organisation (Akikibofori, 2013). Various studies on these factors has been supported by previous researcher using these factors to explain that lack or low satisfaction is job that leads employees to engage with deviant behaviour in workplace (Alias & Roziah, 2011). Therefore, this study proposes to further study on the relationship of workplace deviance behaviour and job satisfaction.

P1: Job Satisfaction has significant influence on workplace deviance.

### **3.2 Job satisfaction and Work Stress**

Stress in workplace is among the factors that affecting job satisfaction. Organisation assumes that when employees are not happy with their job, it will bring harmful impact on the organisation productivity (Riaz, et al, 2016). Research conducted on 200 respondents among the public municipality in Iran has resulted significantly positive which explanations the relationship of job satisfaction and work stress (Simin, et al, 2013). Another study on the relationship showed a significant result that stress causes employees dissatisfaction. According to the study among physicians in China, which resulted ( $R=1.480$ ,  $p<0.001$ ) for the work stress relationship with satisfaction (Yong Lu et al, 2017). Thus, with the finding of prior studies, this paper will look into the relationship between job satisfaction and work stress.

P2. Job satisfaction mediates the relationship of work stress and workplace deviant behaviour of hotel employees.

### **3.3 Job Satisfaction and Job Autonomy**

Job satisfaction and job autonomy are crucial issues; this can be supported by prior studies on other industries as well. For instance, a research among 423 participant of academicians in government university in Sri Lanka finds p-value for job autonomy is less than 1. This study implies that there is a high certainty in statistical association between job satisfaction and job autonomy (Amarasena, Ajward & Ahasanul, 2015). Meanwhile, Izlem (2016) research involve 202 employees in different sectors shows significant effect between job satisfaction and job autonomy. Hence, this study proposed the following:

P3. Job satisfaction mediates the relationship of job autonomy and workplace deviant behaviour of hotel employees.

## **4.0 WORK- RELATED FACTORS INFLUENCING WORKPLACE DEVIANT BEHAVIOUR**

### **4.1 Workplace Deviant Behaviour and Work Stress**

Various studies have been made on the relationship between work stress and workplace deviant behaviour (Silva & Ranasinghe, 2017; Ugwu & Okafor, 2017). Summarises on the definition of stress is, stress is an internal situation of individual cause by environment that influence on physical, psychological, and behaviour of the person (Nasurdin et al, 2014). Previous researcher indicated, employees who experience negative emotions such as irritation and frustration that is relates to work- related factors has high possibilities to engage with workplace deviant behaviour (Radzali et al., 2013).

Silva and Ranasinghe, (2017), in the study among employees in an apparel solutions business in Sri Lanka shown that work stress factors have resulted a strong impact on workplace deviant behaviour.

Study on primary school teachers in Nigeria resulted a significant impact of work stress on workplace deviant behaviour among the teachers (Matthew, Chigozie, & Kosiso, 2014). Work stress effects both organisations and employees, this is because it can influence employees to developed negative feelings that lead to act of deviant within the organisation (Omar et al., 2011).

General strain theory is used in this paper to support the relationship between work stress and workplace deviant behaviour. Strain factors such as burden with overload work and not able to achieve goals will cause work stress (Silva & Ranasinghe, 2017). Therefore, this study proposed:

P4: Work stress significantly influence workplace deviance among the employees in the

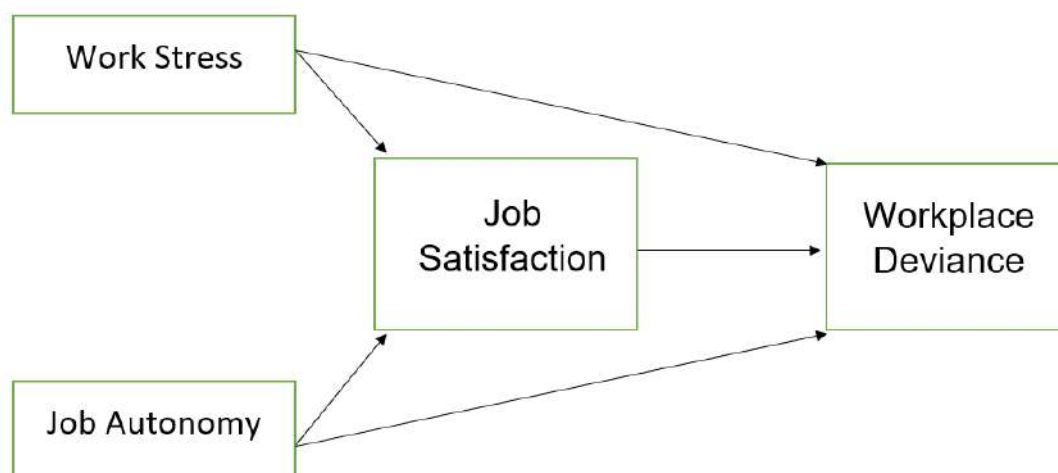
## 4.2 Workplace Deviant Behaviour and Job Autonomy

Job Autonomy is defined as employee's freedom in workplace (Dysvik & Kuvaas, 2011). Employees who is highly controlled by the organisation superior or employers, will experience frustration that leads to act of deviant behaviour in workplace (Alias et al., 2013). Sakurai and Jex in year 2012, stated in their study, the levels of job autonomy in the organisation will lead to different level of employee's freedom. And this will have influenced the employee to engage with negative work behaviour. According to Baillien et al., (2011), job autonomy is an example of job characteristics that affected on work related strain that leads to workplace bullying (Baillien et al., 2011).

High level of control on individual over his or her work will cause frustration and strongly has negative influence on their behaviour (Shropshire & Kadlec, 2012). General strain theory is used to relates on employees who are being controlled by their employers, which could cause employees to develop strain such as frustration. The strain and frustration that employees experience in workplace will lead to deviant behaviour (Alias et al., 2013). Research by Baillien et al., (2011) has also supported the relationship between job autonomy and workplace deviant behaviour involving general stain theory. Accordingly, this study proposed:

P5. Job autonomy significantly influence workplace deviance among the employees in the hotel industry.

Figure 3 displays the proposed conceptual framework of the relationship between work-related factors (Work stress and Job Autonomy) with workplace deviant behaviour and job satisfaction as mediating variables.



## 5.0 IMPLICATION AND CONCLUSIONS

Objective of this paper is to propose a conceptual framework that consist of the influence of work-related factors on workplace deviant behaviour among employees in the Malaysian hotel industry. The proposed conceptual framework (Referring to Figure 3) was constructed based on studies by previous researchers. This paper underlined the relationship between work related factors and workplace deviant

behaviour. Variables supported for work-related factors are work stress and job autonomy. The proposed framework in this paper are able to contribute towards the hotel organisation. With the proposed framework, the organisation expert able to focus on these factors that has influence employees to engage with workplace deviant behaviour. Importantly, the conceptual framework is to guide the service industry, hotel industry specifically, to identify factors that cause employees to perform workplace deviant in workplace. It is essential for an organisation to understand these work-related factors as it will assist the organisation to reduce workplace deviant behaviour and increase organisational efficiencies (Kasa & Hassan, 2015).

The growth of hotel industry in Malaysia has contributed towards the development of Malaysian service industry and Malaysia economic as well. Tuzun and Kalemci, (2017) discussed the importance of delivering efficient Services in hotel industry, this is because the hotel industry is a service-oriented industry to which depend on employee as the key role in providing excellent service to its customers. Hence, it is important for the organisation to attend to these factors at early stage. Therefore, this paper proposed factors that influence employees to perform act of deviant within the organisations. Social exchange theory and general strain theory are employed in this paper to support the proposition. The proposed conceptual framework is to be use as an important guideline to the hotel industry to stay competitive in the service industry and the employees able deliver quality services to its customers.

## **REFERENCES**

- Agnew, R. (2001). Building On The Foundation Of General Strain Theory: Specifying The Types Of Strain Most Likely To Lead To Crime And Delinquency. *Journal Of Research In Crime And Delinquency*, 38(4), 319–361.
- Alias, M., Mohd Rasdi, R., Ismail, M., & Abu Samah, B. (2013). Predictors Of Workplace Deviant Behaviour: Hrd Agenda For Malaysian Support Personnel. *European Journal Of Training And Development*, 37(2), 161–182.
- Baillien, E., De Cuyper, N., & De Witte, H. (2011). Job Autonomy And Workload As Antecedents Of Workplace Bullying: A Two-Wave Test Of Karasek's Job Demand Control Model For Targets And Perpetrators. *Journal Of Occupational And Organizational Psychology*, 84(1), 191–208.
- Balogun, G., Esan, F. O., Ezeugwu, C. R., & Orifa, E. I. (2016). Mediating Effect Of Job Satisfaction On Psychological Contract Breach And Workplace Deviance Among Police Personnel, 14–31.
- Blau, P. M. (1964). Justice In Social Exchange. *Sociological Inquiry*, 34(2), 193–206.
- Bustamam, F. L., Teng, S. S., & Abdullah, F. Z. (2014). Reward Management And Job Satisfaction Among Frontline Employees In Hotel Industry In Malaysia. *Procedia - Social And Behavioral Sciences*, 144, 392–402.
- Chughati, F. D., & Perveen, U. (2013). A Study Of Teachers Workload And Job Satisfaction In Public And Private Schools At Secondary Level In Lahore City Pakistan, 2(1), 202–214.
- Dalal, R. S. (2005). A Meta-Analysis Of The Relationship Between Organizational Citizenship Behavior And Counterproductive Work Behavior. *Journal Of Applied Psychology*,
- Dysvik, A., & Kuvaas, B. (2011). Intrinsic Motivation As A Moderator On The Relationship Between Perceived Job Autonomy And Work Performance. *European Journal Of Work And Organizational Psychology*, 20(3), 367–387.
- Hwang, J., Lee, J. (Jay), Park, S., Chang, H., & Kim, S. S. (2014). The Impact Of Occupational Stress On Employee's Turnover Intention In The Luxury Hotel Segment. *International Journal Of Hospitality And Tourism Administration*, 15(1), 60–77.
- Johnson, M. (N.D.). Workforce Deviance And The Business Case For Employee Engagement, 11–16.
- Jung, H. S., & Yoon, H. H. (2012). The Effects Of Emotional Intelligence On Counterproductive Work Behaviors And Organizational Citizen Behaviors Among Food And Beverage Employees In A Deluxe Hotel. *International Journal Of Hospitality Management*, 31(2), 369–378.
- Kasa, M., & Hassan, Z. (2015). The Role Of Flow Between Burnout And Organizational Citizenship Behavior (Ocb) Among Hotel Employees In Malaysia. *Procedia - Social And Behavioral Sciences*, 211(September), 199–206.

- Kozako, I. N., 'Ain M. F., Safin, S. Z., & Rahim, A. R. A. (2013). The Relationship Of Big Five Personality Traits On Counterproductive Work Behaviour Among Hotel Employees: An Exploratory Study. *Procedia Economics And Finance*, 7(Icebr), 181–187
- Lotfi, M. H., & Pour, M. S. (2013). The Relationship Between Organizational Justice And Job Satisfaction Among The Employees Of Tehran Payame Noor. *Procedia - Social And Behavioral Sciences*, 93, 2073–2079
- Matthew, O. T., Chigozie, U. B., & Kosiso, A. (2014). Workplace Deviance: A Predictive Study Of Occupational Stress And Emotional Intelligence Among Secondary School Teachers. *International Journal Of Academic Research In Business And Social Sciences*, 4(12), 178–186.
- Morrison, E. W., & Robinson, S. L. (1997). When Employees Feel Betrayed: A Model Of H O W Psychological Contract. *The Academy Of Management Review*, 22(1), 226–256.
- Narayanan, K., & Murphy, S. E. (2017). Conceptual Framework On Workplace Deviance Behaviour: A Review. *Journal Of Human Values*, 23(3), 218–233.
- Nasurdin, A. M., Ahmad, N. H., & Razalli, A. A. (2014). Politics, Justice, Stress, And Deviant Behaviour In Organizations: An Empirical Analysis. *International Journal Of Business And Society*, 15(2), 235–254.
- O'Connor, P. J., Stone, S., Walker, B. R., & Jackson, C. J. (2017). Deviant Behavior In Constrained Environments: Sensation-Seeking Predicts Workplace Deviance In Shallow Learners. *Personality And Individual Differences*, 108, 20–25.
- Omar, F., Halim, F. W., Zainah, A. Z., Farhadi, H., Nasir, R., & Khairudin, R. (2011). Stress And Job Satisfaction As Antecedents Of Work Place Deviant Behavior. *World Applied Sciences Journal* 12, (January), 46–51.
- Radzali, F. M., Ahmad, A., & Omar, Z. (2013). Workload, Job Stress, Family-To-Work Conflict And Deviant Workplace Behavior. *International Journal Of Academic Research In Business And Social Sciences*, 3(12), 109–115.
- Robbins, S., Judge, T. A., Millett, B., & Boyle, M. (2013). *Organizational Behaviour*. Pearson Higher Education Au
- Sakrai, K., & Jex, S. M. (2012). Coworker Incivility And Incivility Targets' Work Effort And Counterproductive Work Behaviors: The Moderating Role Of Supervisor Social Support. *Journal Of Occupational Health Psychology*, 17(2), 150–161.
- Hroshire, J., & Kadlec, C. (2012). Where Are You Going? A Comparative Analysis Of Job And Career Change Intentions Among Usa It Workers. *Journal Of Internet Banking And Commerce*, 17(2), 1–20.
- Silva H. M. S. V., & Ranasinghe, R. M. I. D. (2017). The Impact Of Job Stress On Deviant Workplace Behaviour: A Study Of Operational Level Employees Of Comfort Apparel Solutions Company In Sri Lanka. *International Journal Of Human Resource Studies*, 7(1), 74–85.
- Tuzn, I. K., & Kalemci, R. A. (2017). Workplace Deviance And Human Resource Management Relations: A Case Study Of Turkish Hotel Employees. *Journal Of Human Resources In Hospitality & Tourism*, 0(0), 1–17. <https://doi.org/10.1080/15332845.2017.1340740>
- Ugw, E. S., & Okafor, C. O. (2017). Organizational Commitment, Occupational Stress, And Core Self-Evaluation As Predictors Of Workplace Deviance, 6(4), 64–70.
- Yen, C. H., & Teng, H. Y. (2013). The Effect Of Centralization On Organizational Citizenship Behavior And Deviant Workplace Behavior In The Hospitality Industry. *Tourism Management*, 36, 401–410.

## Factors Influencing Organizational Citizenship Behaviour (OCB) among Local Government Employees in Lagos State, Nigeria

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### ABSTRACT

*Organizational Citizenship Behaviour (OCB) is known to be one of the most important concepts in organizational effectiveness. Determining how OCB contributes to an organization through the organization's social system has been of increasing interest to both scholars and managers. Although the factors influencing organizational citizenship behaviours have been widely investigated by researchers, there is little research interest on organizational citizenship behaviour in public organization, especially in developing countries. This study examined the factors influencing organizational citizenship behaviour among employees of local government areas in Lagos State, Nigeria. The study employed multi-stage sampling techniques on 400 employees of three selected local government areas in Lagos using self-administered questionnaire. The data collected was analysed using SPSS version 23.0. The result of the study indicated that there was high level of employee job satisfaction, organizational commitment, organizational justice, employee engagement as well as OCBs. The result of the multiple regression indicated that Job satisfaction has the most significant influence on organizational citizenship behaviour with positive coefficient weight value of 0.414 ( $p < 0.001$ ). The Organizational commitment is the second most important variable influencing OCB with coefficient weight value of 0.320, ( $p < 0.001$ ). More so, employee engagement was statistically significant ( $p < 0.001$ ), with positive coefficient weight of 0.298. The organizational justice has the least influence on OCB in the model with a coefficient weight value of 0.222, and statistically significant ( $p < .001$ ). Based on the outcome of this study, it can be concluded that job satisfaction, organizational commitment, organizational justice and employee engagement have positive and significant influence on OCB. It is therefore recommended that the local government authorities, human resources professionals and policy makers need to understand the significant determinants of OCB and focus on these variables in order to design sound people-oriented policies and strategies that would improve OCB among their employees for the overall organizational performance.*

**KEYWORDS:** Organizational Citizenship Behaviour (OCB), Employees, Local Government, Lagos, OCB Scale

### 1.0 INTRODUCTION

Organizations have long been interested in how employees think and feel about their jobs and what employees are willing to dedicate to the organization (Ariani, 2016). Organizational Citizenship Behaviour (OCB) that has emerged in contemporary administrative thought is a concept that contemporary

organizations need to face challenges. They need employees who conduct behaviours that go beyond the requirements of their official roles to achieve success and to enhance the overall organization's conduct (Demirel, Elhusadi, & Alhasadi, 2018).

Kvitne, (2017) cited Katz (1964) as saying that behaviours which are useful and supportive are critical for organizational operations. He however, highlighted three different types of employee behaviours that are vital for a success of an organization. The first to mention is that employees must be inspired to stay in the organization. Secondly, the workers must understand their role as employees and fulfil their job requirements based on the job description. Third, the author claimed that organizations need workers that are ready to do more than is required of them. This last claim by Katz marks the beginning of OCB. Bateman & Organ, (1983) used the term 'organizational citizenship behaviour (OCB)' and defined it in their research.

The most widely used definition of OCB is that of Organ, (1988) who defined it as "individual behaviour that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization." This definition includes both behaviour and outcome aspects and entails that citizenship behaviours are discretionary, and therefore is not a part of the formal work requirement (Lo & Ramayah, 2009). More recently, OCB has been defined as participating in activities or actions that are not formally a part of the job description, but are beneficial to the organization as a whole (Ariani, 2016).

While it is apparent that there are many important determinants of OCB that are known to enhance organizational efficiency, effectiveness, productivity and overall performance, studies with respect to the specific factors that enhance OCB under different organizational contexts is scarce (Mcbain, 2017). This is especially study within the context of public organizations or precisely local government set up (Obedgiu, Bagire, & Mafabi, 2017). Thus, exploring voluntary behaviour of employees is important in public sector, especially in LGAs. This study therefore, aims to understand the factors influencing OCB in a local government set up in Lagos state, Nigeria. Hence, by attempting to address this specific problem at public sector, this study would contribute to development of OCB literature and will eventually lead to the enhancing the effectiveness of public service delivery.

## **2.0 LITERATURE REVIEW**

OCBs are usually beneficial organizational behaviours that cannot be enforced upon employees as obligations nor acquired by rewards or recompense from employees' gestures in the organization (Farahbod & Arzi, 2014). Moreover, (Farahbod & Azadehdal, 2012) also supported the same point by adding that OCBs include two major components, first it cannot be an obligation from the organization and yet they are very crucial for a company to sustain for its benefits. Velickovska, (2017) also stated that employee who perform OCB are willing to do extra tasks and do not expect anything from their organizations, yet they will be happy by the progress of their organization for instance punctuality, employees' volunteering for activities that are not required helping others etc (Abuiyada & Chou Yung, 2012).

Most of the research in the field of OCB stems from the extensive belief that it improves the effectiveness and efficiency of organizations (Koning & Van Kleef, 2015). The significance of OCB to organizational performance has encouraged researchers to search for determinants of this concept and a number have been identified (Gomes, 2014; Kataria, Garg, & Rastogi, 2013; Prabasari Maya, Agung Gusti Martini Budi & Suardika, 2018; Surya & Unny, 2014). Researchers have found out a wide range of determinants of OCB. These include attitudinal variables (e.g., organizational commitment, organizational justice, job satisfaction etc.), individual characteristics (e.g., conscientiousness, positive affectivity, agreeableness, engagement and socio-demographic characteristics) and elements within work environment e.g., leadership, organizational culture and task/job characteristics (Ariani, 2016).

### **2.1 Determinants of Organizational Citizenship Behaviour**

Several studies have contributed to the detection of some of the elements that affect the organizational citizenship behaviour, their impact on an organization in general, and its impact on the social framework of a workplace environment. These factors have included several of the organizational variables and personality, but the researchers were limited to study the most important organizational factors that affect the organizational behaviour as we illustrated in the figure 1, namely, organizational justice, organizational



commitment, job satisfaction and employee engagement. The reason for limiting to only these determinants is due to the fact that among the organizational factors influencing OCB, these variables are the most widely cited. Thus, this study limits its scope by examining only these determinants are how they influence organizational citizenship behaviour within the context of local government employees.

One of the key determinants of OCB is the organizational justice. Justice is defined as giving every person what he/she deserves (Cropanzano & Molina, 2015). Organizational justice is a three-dimensional concept comprising of Interactional Justice, Distributional Justice and Procedural Justice (Spector & Che, 2014). Organizational justice has been viewed as one of the key components that influence organizational citizenship behaviours (Kittikunchotiwut, 2017). Colquitt et al., (2012) stated that employees who are treated fairly with justice tend to respond positively by exhibiting OCB than those who think they are being treated unfairly or uncertain about the job requirement.

Job satisfaction is another important determinant of OCB. Employees who are satisfied, tends to be committed and thus, exhibit extraordinary behaviour (Farahbod, 2013). When employees are satisfy they tend to display greater level of service-oriented character in the organization (Yung Chou & Lopez-Rodriguez, 2013). Employees' job satisfaction as defined by Sharma et al., (2014), is the whole employees' well-being at work, which is related to higher level of comfort or discomfort state of an employee. Sharma et al., (2014) is of the opinion that employees who are satisfied develop intrinsic work value on their career which enables them to be dedicated and productive about their work.

More so, commitment is another important determinant of OCB. The term commitment as defined by Daly et al., (2014) is the psychological attachment of an employee to his organization. According to Meyer, Stanley, and Parfyonova, (2012), there are three types of organizational commitment which includes; Affective commitment, Continuous commitment and Normative commitment. Many researchers have shown that OCB is positively related to commitment. O'Reilly and Banki, (2016) stated that a positive climate in the workplace is a predicator of commitment thus the exhibition of OCB from employees.

Lastly, employee engagement is another determinant of OCB. Employee engagement has been studied as a possible predictor of OCB in several studies (Rekha & Sasmita, 2019). Meyer et al., (2002) state that neither commitment nor OCB reflect sufficiently two aspects of engagement, its two-way nature, and the extent to which engaged employees are expected to have an element of business awareness, even though it appears that engagement overlaps with the two concepts. Engaged employee will be more vigilant and more focused on their work or tasks, thus, engagement should be positively related to task performance (Colquitt et al., 2012).

## 2.2 Theoretical/Conceptual Framework

The OCB have traditionally been explained in terms of social exchange theory. Social exchange theory (SET) is among the most influential conceptual paradigms for understanding workplace behaviour (Stolte & Ekeh, 2006). Relying on social exchange theory as a theoretical basis, this study hypothesized that employees who feel that their place of work is providing them a safe haven are more likely to engaged in and display OCB. Figure 1 shows the conceptual framework of this study. It indicates that organizational justice, job satisfaction, organizational commitment, employee engagement have influence on organizational citizenship behaviour.

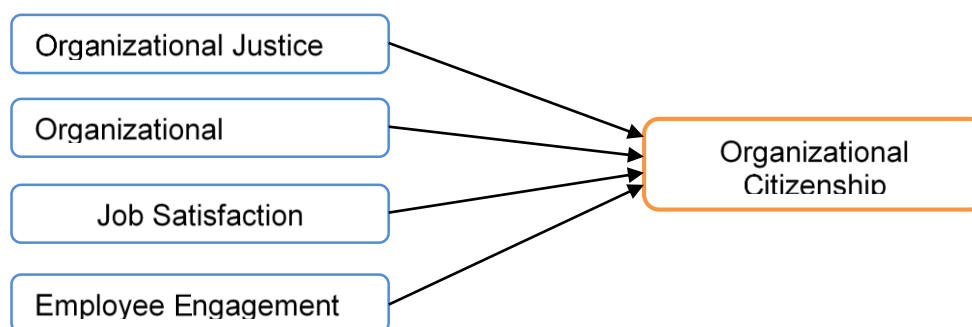


Figure 5. Conceptual Framework



### **3.0 METHODOLOGY**

#### **3.1 Research Design**

Research design is the structure of an inquiry in a logical manner. According to Creswell, (2014) research design reveals a systemic plan of how a research study will be done. It involves projecting the way the research will be conducted and minimises the possibility of drawing inaccurate inferences from data. This study uses quantitative research design and according to Sutton, (2009) a descriptive research generates both quantitative and qualitative data. Meanwhile, Sekaran and Bougie, (2013) argue that the most common descriptive research method is the survey using questionnaire.

#### **3.2 Population and Sampling Procedure**

This study population comprised of all the local governments' employees of the three (3) selected LGAs in Lagos State. The sample size of the study was determined using Krejcie and Morgan (1970) based on the population of the study. According to the table by Krejcie and Morgan (1970), the sample size needed for any research with a population of 25,000, and above is 379. Although, a general rule of thumb is to always use a larger sample size possible. Hence from the estimated sampled size determined in this study, the value was rounded up to 400 samples in order to take care of outliers, non-response and missing values. Multi-stage sampling techniques was employed which comprised of Simple random sampling where three (3) Local government councils were randomly selected out of the 20 LGAs in Lagos State. Secondly, proportionate sampling was employed in order to distribute the samples based on the proportion of the population of employees in each LGA and finally, due to incomprehensive list of the employees of the selected LGAs, systematic random sampling was used in selecting the target respondents where every third employee was selected.

#### **3.3 Study instrument and Data collection**

This study used self-administered questionnaires to collect individual data from the respondents. The survey took approximately two months, with response rate 92 % of 400 employees from the selected LGAs. The questionnaire which was adopted from previous studies comprised of different sections. The questionnaire items for employee job satisfaction was measured with generic job satisfaction scale (Macdonald & MacIntyre, 1997). Organizational commitment was measured by a scale developed by Allen and Mayer (1991), which has 19 items, with three subscales (affective commitment, normative commitment, and continued commitment). The perceived Organization Justice was measured using the organizational justice Scale (OJS) developed by Niehoff and Moorman, (1993). This scale consists of 20 items that measure the three dimensions of organizational justice, namely distributive justice, procedural justice and interactional justice. For employee engagement, this study used the scale developed by Gallup Inc. in 2012, known as The Gallup's Q<sup>12</sup> survey Gallup Inc, (2016), which is the most effective measure of employee engagement scale with 12-item questions. Lastly, the organizational citizenship behaviour (OCB), was measured using most widely used OCB scale developed by (Smith, Organ, & Near, 1983).

### **4.0 RESULTS AND DISCUSSION**

#### **4.1 Socioeconomic characteristics of the respondent**

The result of the socio-economic characteristics of the respondents is presented in Table 4.1. From the total number of respondents, the gender distribution shows that males were 221 (56.2%) of the respondents, while 172 (43.8%) were female. This indicates that ratio of male is much higher than that of female in local government service in Lagos state. For marital status, the result showed that those who were married constitute the majority (232) 59.0%, while those who were not married constitute the remaining percentage. Based on job position, those on the junior staff cadre were 235 (59.8%), the senior staffs were 110 (28.0), while those on the director's position were 48 (12.2%). For the respondents' age distribution,

majority of them (139) '35.4%' falls within the age range 29 years and below, while 126 (32.1%) were within the age range of 30-39. Those between the range of 40 to 49 were only 86 (21.9%), whereas those who are 50 years and above were (42) 10.7%.

On the level of education, those who attended only secondary school were 95 (24.2%), those with either diploma or NCE were 140 (35.6%), while those with bachelor degree were 121 (30.8%) and lastly, MSc and PhD holders were 37 (9.4%). Based on departments, the result shows that administrative staffs were 81 (20.6%), those in the department of agriculture were 85 (21.6%), those in education department were 95 (24.2%). Respondents in health were 65 (16.51%), while those in works department were 67 (17.0%). Lastly, based on years of services, it revealed that those who spent 1-9 years were 275 (70%), while those who spent 10-19 years in services were 62 (15.8%). Those who spent 20-29 years in service were 39 (9.9%) and those who spent 30 years and above were 17 (4.3%).

Table **Error! No text of specified style in document..**2 Socio-demographic characteristics of the respondents

Variables	Frequency	Percentage
<b>Gender</b>		
Male	221	56.2
Female	172	43.8
<b>Marital Status</b>		
Married	232	59.0
Single	94	23.9
Divorced	46	11.7
Widow	21	5.3
<b>Income</b>		
N 29,000 and below	129	32.8
N 30,000 - 49,000	164	41.7
N 50,000 - 69,000	78	19.8
N 70,000 and above	22	5.6
<b>Job Position</b>		
Junior Staff	235	59.8
Senior Staff	110	28.0
Director	48	12.2
<b>Age</b>		
29 and below	139	35.4
30-39	126	32.1
40-49	86	21.9
50 and above	42	10.7
<b>Level of Education</b>		
Secondary School	95	24.2
Diploma/ NCE	140	35.6
Bachelor degree	121	30.8
MSc/PhD	37	9.4
<b>Department</b>		
Administration	81	20.6
Agriculture	85	21.6
Education	95	24.2
Health	65	16.5
Works	67	17.0
<b>Years in services</b>		
1-9	275	70.0
10-19	62	15.8
20-29	39	9.9
30 and above	17	4.3

## 4.2 The Multiple Regression Analysis

Multiple regression analysis was conducted to examine the influence of employee job satisfaction, organizational commitment, engagement, and organizational justice on organizational citizenship behaviour among local government employees in Lagos State. The regression model estimated produces good model fitness. Table 4.2 shows the fitness of the model. The correlation coefficient (R) obtained from the model (0.783) indicates that the strength of relationship between dependent and independent variable is strong and positive. On the other hand, R-square (the coefficient of determination) value obtained was 0.614, which means that 61.4% of the organizational citizenship behaviour is explained by employee job satisfaction, organizational justice, organizational commitment and employee engagement. The remaining percentage could be due to other factors that were not captured in the model. This outcome indicates a very good model fitness.

Table Error! No text of specified style in document..2 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.783 <sup>a</sup>	.614	.610	6.13853

a. Predictors: (Constant), OJ, ES, EC, EEN

### 4.2.1 The Multiple Linear Regression Result

The results of the analysis are shown in Table 4.3. Among the independent variables, Job satisfaction (X1) has the most significant influence on organizational citizenship behaviour with positive coefficient weight value of 0.414 and it was significant at 1% confidence level. This outcome shows that for every unit increase in organizational commitment, there will be 0.414 likelihood of employee to show OCB character. This outcome supports the findings of Meyer, Stanley, Herscovitch and Topolnysky, (2002) and that of Gautam et al., (2010) who emphasized that organizational commitment is positively related to OCB. Organizational commitment is the second most important variable influencing organizational citizenship behaviour with coefficient weight value of 0.320, significant at 1% confidence level. This means that for every unit increase in job satisfaction, there will be 0.320 likelihood of employee to exhibit OCB character. This result supports the findings of Pivi and Hassan (2015).

Employee engagement also was statistically significant at 1% confidence level, with a positive coefficient weight of 0.298. This means that for every unit increase in employee engagement, there will be 0.298 likelihood of the employee to show OCB character. This result is in agreement with Shantz, et, al. (2013), Sridhar and Thiruvankadam, (2014) and Rich et al., (2010). Lastly, organizational justice is the variable with the least influence on OCB in the model. It has a positive coefficient weight value of 0.222, and statistically significant at 1% (p=.000). This outcome shows that unit increase in organizational justice is likely to increase OCB by 0.222. This outcome is in line with the findings of Hafiz et al, (2012) and Niehoff and Moorman, (1993).

Table Error! No text of specified style in document..3 Regression Analysis

Variables	Unstandardized Coefficients	Standardized Coefficients		t	P-value
	B	Std. Error	Beta		
(Constant)	-8.735	2.930	----	-2.982	.003
Employee Satisfaction	.414	.069	.271	5.984	.000
Organizational Commitment	.320	.050	.266	6.392	.000
Employee Engagement	.298	.088	.177	3.377	.001
Organizational Justice	.222	.039	.236	5.692	.000

Dependent Variable: OCB

## 5.0 CONCLUSION

The rationale behind this research is to explore the determinants of organizational citizenship behaviour in African cultural context, specifically, Nigerian public sector. The results of this study also suggest that employee job satisfaction, organizational commitment, organizational justice and employee engagement have positive and significant influence on OCBs. According to the result, job satisfaction, organizational commitment, organizational justice and employee engagement has significant influence on organizational citizenship behaviours. The results obtained from the regression model shows that the job satisfaction plays the most influential role in determining OCB among employees of LGAs in Lagos State. Also, organizational justice is the least factor influencing the OCB in the regression model. Based on these outcomes, it is recommended that the government should find a way to develop new strategies that would improve organizational justice in those LGAs. This will go a long way in enhancing the organizational citizenship behaviour among employees. In conclusion, this study contributed to the literature on OCB by investigating the influence of job satisfaction, organizational commitment, organizational justice and employee engagement in the Nigerian context. The results provide evidence that Local government administrators, human resources professionals and policy makers need to understand the significant determinants of OCB for the effective functioning of the organization and improving the overall organizational performance.

## REFERENCES

- Abuiyada, H. S., & Chou Yung, S. (2012). A Two-Factor Model of Organizational Citizenship Behaviour in Organizations. *European Journal of Business and Management*, 4(3), 134–145.
- Ariani, D. W. (2016). The Relationship between Employee Engagement , Organizational Citizenship The Relationship between Employee Engagement , Organizational Citizenship Behavior , and Counterproductive Work Behavior. *International Journal of Business Administration*, 4(2).
- Bateman, T. S., & Organ, D. W. (1983). Job Satisfaction and the Good Soldier: The Relationship Between Affect and Employee "Citizenship". *Academy of Management Journal*, 26, 587–595.
- Colquitt, J. A., LePine, J. A., Piccolo, R. F., Zapata, C. P., & Rich, B. L. (2012). Explaining the justice-performance relationship: Trust as exchange deepener or trust as uncertainty reducer? *Journal of Applied Psychology*, 97(1), 1–15.
- Creswell, J. (2014). *Research Design* (4th ed.). California: SAGE Publications Inc.
- Cropanzano, R., & Molina, A. (2015). Organizational Justice. In *International Encyclopedia of the Social & Behavioral Sciences: Second Edition* (pp. 379–384).
- Daly, P. S., Owyar-Hosseini, M., & Alloughani, M. E. (2014). Antecedents of citizenship behavior in Arab employees in Kuwait. *International Journal of Cross Cultural Management*, 14(2)
- Demirel, Y., Elhusadi, I., & Alhasadi, A. (2018). The Relationship between Organizational Citizenship Behavior and Organizational Factors. *International Journal of Business and Management Invention*, 7(3), 27–39.
- Farahbod, F. (2013). Impact of Organizational Communication in Job Satisfaction and Organizational Commitment (Case Study Maskan Bank Guilan). *Journal Of Contemporary Research In Business Copy*, 5(4), 2013. <https://doi.org/10.1017/CBO9781107415324.004>
- Farahbod, F., & Azadehdal, M. (2012). Organizational citizenship behavior : The role of organizational justice and leader – member exchange construct : *Interdisciplinary Journal of Contemporary Research In Business*, 3(9), 893–903.
- Farahbod, L., & Arzi, S. (2014). Mediating role of the Job Satisfaction in the Relationship between Human Resource Management Practices and Employee Performance. *Interdisciplinary Journal of Contemporary Research In Business*, 6(3), 1–19.
- Gallup Inc. (2016). Gallup Q12 Employee Engagement Survey.
- Gomes, A. D. (2014). Organizational citizenship behavior in schools: validation of a questionnaire. *The Spanish Journal of Psychology*, 17, E17. <https://doi.org/10.1017/sjp.2014.20>
- Kittikunchotiwt, P. (2017). The Effects of Organizational Justice on Organizational Citizenship Behavior. *Review of Integrative Business and Economics Research*, 6(3), 116–130.
- Koning, L. F., & Van Kleef, G. A. (2015). How leaders' emotional displays shape followers' organizational

- citizenship behavior. *Leadership Quarterly*, 26(4), 489–501.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size For Research Activities. *Educational and Psychological Measurement*, 38, 607–610.
- Kvitne, M. B. (2017). *Development of Organizational Citizenship Behavior and the Effect of Psychological Contract Fulfillment*.
- Lo, M.-C., & Ramayah, T. (2009). Dimensionality of Organizational Citizenship Behavior (OCB) in a Multicultural Society: The Case of Malaysia. *International Business Research*, 2(1), 48.
- Macdonald, S., & MacIntyre, P. (1997). The Generic Job Satisfaction Scale. *Employee Assistance Quarterly*, 13(2), 1–16.
- McBain, R. (2017). Developing Organisational Citizenship Behaviour (OCB). *Henley Manager Update*, 16(2), 25–33.
- Meyer, J. P., Stanley, D. J., Herscovitch, L., & Topolnysky, L. (2002). Affective, continuance, and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences. *Journal of Vocational Behavior*, 61(1), 20–52.
- Meyer, J. P., Stanley, L. J., & Parfyonova, N. M. (2012). Employee commitment in context: The nature and implication of commitment profiles. *Journal of Vocational Behavior*, 80(1), 1–16.
- Niehoff, B. P., & Moorman, R. H. (1993). Justice as mediator of the relationship between methods of monitoring and OCB. *Academy of Management Journal*, 36(3), 527–556.
- O'Reilly, J., & Banki, S. (2016). Research in work and organizational psychology: Social exclusion in the workplace. In *Social Exclusion: Psychological Approaches to Understanding and Reducing Its Impact* (pp. 133–155). [https://doi.org/10.1007/978-3-319-33033-4\\_7](https://doi.org/10.1007/978-3-319-33033-4_7)
- Obedgiu, V., Bagire, V., & Mafabi, S. (2017). Examination of organizational commitment and organizational citizenship behaviour among local government civil servants in Uganda. *Journal of Management Development*, 36(10). <https://doi.org/10.1108/JMD-12-2016-0279>
- Organ, D. W. (1988). Organizational Citizenship Behavior (Book). *Personnel Psychology*, 41(4), 862–865.
- Podsakoff, N. P., Whiting, S. W., Podsakoff, P. M., & Blume, B. D. (2009). Individual- and Organizational-Level Consequences of Organizational Citizenship Behaviors: A Meta-Analysis. *Journal of Applied Psychology*, 94(1), 122–141.
- Prabasari Maya, Agung Gusti Martini Budi, K. L., & Suardika, N. (2018). The Effect of Communication and Employee Engagement on Organizational Citizenship Behavior and Employee Performance in Employees Pt . Pln ( Persero ) Distribution of Bali. *International Journal of Contemporary Research and Review*, 9(8), 21014–21025.
- Rekha, S. S., & Sasmita, M. (2019). Impact of Employee Engagement on Organizational Citizenship Behavior : An Overview. *Espacios*.
- Sekaran, U., & Bougie, R. (2013). Research Methods for Business. In *Research methods for business* (p. 436).
- Sharma, J. P., Bajpai, N., & Holani, U. (2014). Organizational Citizenship Behavior in Public and Private Sector and Its Impact on Job Satisfaction: A Comparative Study in Indian Perspective. *International Journal of Business and Management*, 6(1).
- Smith, C. A., Organ, D. W., & Near, J. P. (1983). Organizational citizenship behavior: Its nature and antecedents. *Journal of Applied Psychology*, 68(4), 653–663.
- Spector, P. E., & Che, X. X. (2014). Re-examining Citizenship: How the Control of Measurement Artifacts Affects Observed Relationships of Organizational Citizenship Behavior and Organizational Variables. *Human Performance*, 27(2), 165–182.
- Stolte, J. F., & Ekeh, P. P. (2006). Social Exchange Theory: The Two Traditions. *Canadian Journal of Sociology / Cahiers Canadiens de Sociologie*, 1(3), 394. <https://doi.org/10.2307/3340424>
- Surya, S., & Unny, C. . (2014). Organizational Citizenship Behaviour: A Conceptual Analysis Surya. *International Journal of Business and Administration Research Review*, 2(6), 130–134.
- Sutton, S. (2009). Encyclopedia of Survey Research Methods. *Library Journal*, 134, 89.
- Velickovska, I. (2017). Organizational Citizenship Behavior- Definition ., *Engineering Management*, 3(1), 40–51.
- Yung Chou, S., & Lopez-Rodriguez, E. (2013). An empirical examination of service-oriented organizational citizenship behavior. *Managing Service Quality: An International Journal*, 23(6), 474–494.

## The Relationship between Individual Factors and Career Adaptability among Fresh Graduates: Results from a Pilot Test

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### ABSTRACT

*Declining global growth has slowed human resource development such as job skill mismatches is part of the present challenges in Malaysia. Due to this challenge, continuous career adaptation to the world of work is crucial in order to make changes in self for satisfaction and to be successful in life. This study is sought to investigate and conduct preliminary investigation of the individual factors that contribute towards career adaptability. We focus on the career adaptability which are related to self-esteem, conscientiousness, spiritual intelligence, and social support. A quantitative and cross-sectional survey has been chosen as the research design for this study. We proposed that all dimensions have positive relationship and contribute significantly towards career adaptability. Fresh graduate employees (n=30) from different public universities has been selected to participate in pilot test to determine the reliability of the instrument. The Cronbach's Alpha ( $\alpha$ ) result was showed for all dimensions. The implication of this study is hope to improve the method for future researchers and to give awareness to fresh graduates or to whom it may concern on the importance of career adaptability.*

**KEYWORDS:** career adaptability, self-esteem, conscientiousness, spiritual intelligence, social support

### 1.0 INTRODUCTION

In this new century, labour market always be a challenge worldwide. The challenges include globalization, internationalization, and technologies advancement, in which are significantly affected labour market. For example, the challenges have fundamentally changes the policy and global trade activities which the governments of all countries put their interest in human capital (Mzee, 2012). Malaysia is not immune to these challenges. For the past few years, Malaysia's economic crisis has taken its toll on labour market. Declining global growth has slowed human resource development especially for fresh graduates. It is true that unemployment rate of 3.36% (Department of Statistics, 2018) can be considered low percentage and still not to be worry. In reality, most of the job offers or vacancy comes from blue collar cohorts (Department of Statistics Malaysia, 2019). So what are the opportunities for fresh graduates? If there are opportunities, some of the job offer are not even close to their qualification or what they have studied in universities. Sometimes, they have to take up any job that is available which lead to a problem of skill mismatch (Koen, Asada, Nixon, Rahuman, & Arif, 2017).

Skill mismatch in Malaysia is not new (Norman, Abdul Latiff & Mohd Said, 2018). Even though education attainment has increased among young Malaysian, there has been limited attention paid to skill mismatch between graduates and their qualification or skills that required in their workplace (Mehta et al., 2010). However, life must go on and it needs individual ability to overcome the challenge. This issue has raised the question of graduates "work readiness", "adaptability" and "employability". Focusing on adaptability to world of work is crucial as Savickas (2007) advocated that through adaptability, the employees (fresh graduate) will improve the quality of work in new or changed environment. Savickas (2007) also added that individuals with adaptability will be able to address and overcome current task, organizational change, and job trauma.

Fresh graduates as young adults have developmental task to make arrangement related to commitment in life. For example, commitment in relationship with family and friends, career choices, and being responsible of any decision made (Super, 1980). Transition from school to entering labour market, fresh graduates may find that career world or world of work is a new environment for them. The transition

from school/university life is different from working life. How the graduates overcome the challenges are part of interesting point to discover. The challenge has forced the graduates to have the ability of adapting, adjusting and display adaptability to new environment and it is a salient point in being flexible with labour market uncertainty. Therefore, the study of career adaptability has become relevant as it significantly noted as successful career development, lead to job satisfaction and better employment quality (Chan et al., 2015; Savickas & Porfeli, 2012; Zacher, 2015).

## 2.0 IN THE CONTEXT OF CAREER ADAPTABILITY

This study builds on Career Construction Theory (CCT) popularized by Savickas to explain the attributes of graduates that contribute to career adaptability. This theory is an extension from Super's career development theory, developmental self-concept theory, and life span, life-space theory. Career adaptability first being popularize as a construct within life span, life-space theory by Super & Knasel (1981). They define career adaptability as an adult's "readiness to cope with changing work and working condition" (Super & Knasel, 1981). Then, Savickas has proposed career adaptability as a central construct of Career Construction Theory that posit on how to cope with the predictable and unpredictable tasks and adjustments prompted by the changes in the world of work (Savickas, 1997). He also added that career adaptability represent individual's vocational behaviour of how to constructs a career (Savickas, 2013). Career adaptability is one of the characteristic that assist a person to deal with career uncertainty and ambiguous job roles in current times (Chong & Leong, 2017).

Adaptive individuals are conceptualized in four folds which are (a) becoming concerned about their future as a worker, (b) increasing personal control over their vocational future, (c) displaying curiosity in exploring possible selves and future scenarios, and (d) strengthening the confidence to pursue their aspirations (Savickas, 2013). Based on these concept, there are 4 constructs under career adaptability that has been proposed by Savickas & Porfeli (2011) which are *concern* (ability to be aware of future career), *control* (personal control over the future and personal responsibility of own career), *curiosity* (tendency to explore possible self and scenarios), and *confidence* (self-confidence in being able to face and solve career problems or challenges). These dimensions of career adaptability underscore the dynamic process linking self and occupational knowledge towards congruence over time (Rottinghaus & Van Esbroeck, 2011, p.43)

According to CCT and Super's compilation of career development theories, they discussed about vocational identity and self-concept that influence career development. Self-concept in career development mostly refers the consideration of personal attributes and the desired attributes by certain jobs (Super & Jordaan, 1973). As people grow, they develop their own roles, personality and abilities in which they implement in their career. The theory belief that self-concept changes and develop over time as individual gain experiences. Self-concept elements such as personality (e.g. big five personality), attributes (skills and intelligence), and characteristic of self (e.g. self-esteem, self-efficacy), serve all the individuals that will link to self-perception, attitudes, and values about one-self. Developing self-concept as an individual factor in career development is crucial. This present study will approach some of the self-concept's element (i.e. individual factors) that predict the career adaptability.

## 3.0 INDIVIDUAL FACTORS AND CAREER ADAPTABILITY

Every individual has different attributes which make them special in dealing themselves in any situation. Savickas & Porfeli (2012) suggested that the readiness to participate in career development activities could be reflected by the fundamental characteristics portrayed in existing personality theories, but no prevalent operationalization of adaptation was provided. Guan et al. (2017) had proposed that basic personality traits may affect career adaptability through dispositional factors that can strongly motivate individuals and their intention to build adaptive career resources. For example, fresh graduate in particular, surviving in world of work is crucial as they are not sufficiently equipped with required competence in terms of skills and ability in order for them to establish in turbulent world of work (Ismail, 2017). With desirable skills and attributes, individual is capable to cope and adapt with working environment. Career adaptability has become essential for individuals who need to navigate constant change towards career development and success (Hall & Chandler, 2005; Maree, 2012). Therefore, individual factors are the most important dimension in understanding the contribution towards career adaptability.

### 3.1 Self- Esteem

Why self-esteem deserves attention in career adaptability? The vast majority of self-concept study deals with self-esteem (Betz, 1994; Kidd, 1984; Rusu, Măirean, Hojbotă, Gherasim, & Gavriloiăiei, 2015; Shavelson, Hubner, & Stanton, 1976). Self-esteem appears to be a dimension that stretches full spectrum of behaviour, development, personality, or identity (Mruk, 2013, p.3). For instance, individual with low self-esteem experience more of negative emotion which can affect mental health. Maslow's hierarchy of basic need has emphasize the esteem need, a desire for stable, high evaluation of themselves, and respect others (Maslow, 1943). Rosenberg et al. (1995) claimed that most of the literature deals with global self-esteem, that is, the individual's positive or negative attitude toward the self as a totality (Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995). Global self-esteem refers to individual's attitude toward an object as a whole (feeling self-worth) and specific self-esteem refers to attitude on specific setting (Rosenberg et al., 1995). For example, in a study of Ellis & Taylor (1983), they found significant relationship of specific self-esteem but inconsistent result in global self-esteem.

In career adaptability context, past studies has posited that self-esteem as imperative predictors of career development and success (Ataç, Dirik, & Tetik, 2018; Cai et al., 2015; Hall & Chandler, 2005; Janeiro, Mota, & Ribas, 2014; van Vianen, Klehe, Koen, & Dries, 2012). Satisfaction of self-esteem leads to a feeling of self-worth and self-confidence that will be use necessarily in life. Judge & Bono (2001) suggested that individuals with elevated self-esteem view a scenario as a chance, while individuals with low self-esteem anticipate the same scenario as a challenge they may not fulfill. If we look at past studies, self-esteem has been studied extensively in many field. However, individual's self-esteem can change over time as the person develop and it is possible to be studied repeatedly across times. Hence, this study will examine the individual self-esteem which is focusing on professional self-esteem of an employee (referring to fresh graduate) in workplace context. Therefore, the researcher proposed that:

**P1:** Self-esteem significantly contributes towards career adaptability.

### 3.2 Conscientiousness

Several lines of study on the employers' discourse has highlighted skills and personality gap among graduates such as lack of communication skills, well-organized and problem solving. For example, Jobstreet's employers' survey (2015) has reported that 59% of unemployed fresh graduates has poor personality and attitude. Personality is an individual's distinctive characteristic of thought, emotion, and behaviour. There are five types of personality which are (1) openness to experience, (2) conscientiousness, (3) agreeableness, (4) neuroticism, and (5) extroversion. The Five Factor Model of personality has been predominant framework for exploring relationship between individuals and career development. The interest in personality measurement has increased among applied psychologists because of studies demonstrating that personality variables predict performance across a diverse array of occupational groups. Based on the validity of generalization studies of five factor personality, conscientiousness shows consistent validities across organizations, jobs, and situations (Boudreau, Boswell, & Judge, 1999; Hogan & Ones, 1997; Li et al., 2015).

Conceptually, conscientiousness has been defined as the extent to which an individual is hardworking, conformity, achievement oriented, value for work and persevering (Barrick & Mount, 1991; Judge, Erez, Bono, & Thoresen, 2003). Conscientiousness has also been defined as social conformity and impulse control (the degree to which a person makes an effortless adaptation to authority) (Hogan & Ones, 1997). On the other hand, Boudreau, Boswell, & Judge (2001) have proposed that conscientiousness is correlated to goal-oriented, persistent, and well-organized skills that seem likely to be connected with career achievement. Hence, the concept of conscientiousness appears to a person is, at least, careful, responsible, and organized (Becker, 1998).

On the common ground, those who are goal-oriented, hardworking, and dependable are likely to be more productive and successful employees. In particular, conscientiousness, one of the Big Five factors, may also facilitate the use of adaptive behaviours that require planning and persistence (e.g., career exploration, job searching) (Lent & Brown, 2013). Chong & Leong (2017) has studied an integrative model of career adaptability and concurred that conscientiousness is positively related to career adaptability. Hannah Zacher also added that daily manifestation of career adaptability is influenced by individual's



personality, particularly conscientiousness (Zacher, 2014, 2016). Therefore, the researcher has proposed that:

**P2:** Conscientiousness has significant contribution towards career adaptability.

### 11.3 Spiritual Intelligence

We tend to forget the importance of understanding spiritual in our daily life. The context of spiritual is not only discuss on religiosity, the moral value and positive well-being of an individual are also part of it. Spiritual holds two components which are (1) sense of connection to something beyond the individual and (2) search for meaning, purpose, and integration in life (Mitroff & Denton, 1999). Contribution of positive result in spiritual belief leads individual to avoid acting deviant or in destructive ways, socially and personally (Emmons, 2000). Spirituality or spiritual development among graduates often a missing topic (Love & Talbot, 2009). A great deal of previous research pre-eminence of intelligence quotient (IQ) as the benchmark of achievement in academic success was unquestioned. Recent developments in the study of intelligences have led to a renewed attention on the provision of spiritual intelligence as part of standard intelligence (Cady, 2004).

Spiritual Intelligence/Quotient in this sense is not simply like combining intelligence with spirituality. It is an ability to address issues concerning meaning and purpose that lead individual's action in broader perspective (Zohar & Marshall, 2004). Marques (2006) has highlighted significant contribution of spiritual intelligence at workplace. She has reported that internal aspect of spiritual intelligence at workplace are (1) understanding the importance of the work is; (2) understanding objectives and their value; (3) drawing on the strengths of colleagues; (4) respecting the environment; and (5) being a good listener (Marques, 2006). Seeing and treating work as spiritual, it enable each individual to consider his or her contribution to the world, and this view gives value to each career (Bloch, 2005). For example, at workplace, graduates may encounter work problems, conflicts, and dilemma. With high spiritual capabilities, graduates/employees will able to solve the problems and lead back their life to the right path in attaining goals (Abdul Rani, Abdul Ghani, & Ahmad, 2013; Hosseini, Elias, Krauss, & Aishah, 2010; Tee, Anantharaman, & Yoon, 2011; Wigglesworth, 2011). Thus, if when the graduate inculcate higher spiritual intelligence, then the comfortable career adaptability they will faced. Therefore, the researcher propose:

**P3:** Spiritual intelligence has significant contribution towards career adaptability.

### 3.4 Social Support

Every individual needs social support since birth. The National Cancer Institute (USA) defines social support as "a network of family, friends, neighbours, and community members that is available in times of need to give psychological, physical, and financial help" (<https://www.cancer.gov>). Fabio & Kenny (2015) advocated that social support is a contextual factor that related to the progression of education and career development. The challenges faced by graduates during transition from school to world of work needs social support from family and friends. For example, choosing suitable job may require advice from parents or friends. During difficulties of getting employed, graduates rely on their family for financial support and friends for shoulder to cry on.

Research on workplace social support in general has shown to have a positive impact on worker's performance and organizational commitment (Gates, 2000). Workplace social support is practice in organizational setting whereby the mentors, supervisors, and colleague provide guidance for protégé/newcomer in familiarizing/orientating work procedure, protocol, and behaviour such as interpersonal for career advancement (Jackson, 2016; Turner de Tormes Eby et al., 2013). The implications of the study can identify areas for improvement for workplace support programs in organization for employees to cope with social environment of the workplace and improve themselves in their occupation.

Career adaptability are more likely to emerge and improve in contexts shaped by positive emotions, and support by friends, family and significant others contributes to a positive affective state. Wang and Fu (2015), in their study on 879 Chinese college graduates, observed that social support has a positive effect on career adaptability. Clearly, a supportive environment provides an atmosphere in which adaptability capacities can be developed and proliferated. Zacher (2016) suggested that daily supervisory career mentoring could potentially alleviate employees' career concerns by providing them with emotional and instrumental social support (e.g., listening, sharing information).

Ghosh & Fouad (2017) has conducted a study on graduating college seniors and they reported that the career concern (resource of career adaptability) was significantly predicted by social support. Although there were statistically significant, the relationship are negative. It means that the more adaptable the graduate is, the less support they needed. Although perceived social support plays a moderating role in the relationship between perceptions of self-esteem and career adaptability sub-scales (Ataç et al., 2018), based on these statement (Creed, Fallon, & Hood, 2009; Zacher, 2016), there is a potential that social support could enhance career adaptability or also possible there is no relationship at all. Therefore, the researcher proposed that:

**P4:** Social support has significant contribution towards career adaptability.

**P5:** Social support will moderate the effects of conscientiousness on career adaptability.

**P6:** Social support will moderate the effects of self-esteem on career adaptability.

**P7:** Social support will moderate the effects of spiritual intelligence on career adaptability.

## **4.0 METHOD AND RESULT**

This section details the context in which this research was conducted. It also explains the methodology and variables utilized in the study.

### **4.1 Research Design**

In this context of study, the researcher will choose quantitative research design. A cross-sectional survey method to get the data from the respective samples where the researcher is required to collect the data from sample once in specific time.

### **4.2 Sample and Procedure**

The population for this pilot study the fresh graduates (bachelor's degree) from one of the public university who was graduated in 2018 and currently working for at least 3 months. The Alumni's office of selected university was contacted by email and phone in order to request the respective officer to broadcast the questionnaire through their emails or university's social media page. It was clearly stated to the respondents that all the information contained in their questionnaires would remain confidential. The participation was voluntary. 30 respondents (16.7% male and 83.3% female) were participated for pilot test to as to assess the comprehension and understand ability of respondent towards the questionnaires. A token of appreciation was given to the responding participants as incentives.

The instruments (Table 1) used in the study have been adopted from the literature and a pilot study was conducted prior to the main research in order to check the feasibility or improve the quantitative research design. It was conducted to test the sampling before the full-scale data collection.

### **4.3 Profile of Respondent**

The majority of respondents (90%) were Malays, followed by Indians (6.7%), and Chinese (3.3%). About 33.3% of the respondents are employed for 10-12months duration, 30% employed for more than 1 year married, followed by 26.7% and 10% for 7-9 months and 3-6 months duration. Further, 20% of fresh graduates are working in private sector, 6% from government-linked company (GLC), 10% from public sector and the remaining 3.3% working with non-profit organization (NGO).

### **4.4 Pilot Test Analysis**

Before conducting pilot test, three experts was chosen to evaluate the instruments in order to validate the content, clarity, language, and understanding of the items. The instrument has been revised accordingly based on the experts comment.

To test the internal consistency of the variables, the Chronbach's Alpha test was performed and the results are satisfactory. Below are the results of Cronbach's Alpha:

Table 1: Instruments and Cronbach's Alpha Values

Variables	Questionnaire	No. of Items	Cronbach's Alpha
Career Adaptability	Career Adapt-Abilities Scales (CAAS) (Savickas & Porfeli, 2012)	24	0.89 – 0.94
Self-esteem	Professional Self-Esteem Scale (Iqbal et. al, 2016)	36	0.60 – 0.93
Conscientiousness	International Personality Item Pool (IPIP) Conscientiousness Scale (Goldberg, 1999)	10	0.82 – 0.86
Spiritual intelligence	The Spiritual Intelligence Self-Report Inventory (SISRI-24) (King, 2008)	24	0.78 – 0.88
Social Support	Supervisor and co-worker support (Yoon & Thye, 2000)	6	0.70 – 0.92

## 5.0 CONCLUSION

The purpose of this study is aim to shed light on career adaptability as readiness to cope with working situation. Career adaptability is a continuous issue and is likely to be revisited over many times. Finding on the proximal predictors of CA can also help practitioners to design appropriate interventions pertinent to the specific indicators of low adaptability, in order to better engage individuals in the self-improvement activities towards optimal adaptation (Betz, 2004). On the policy implication, redesigning career support service within and outside of the workplace would implement the readiness and effective decision-making in life so that the individuals are better equipped in facing uncertainty. On the other hand, practical implication of career adaptability would serve the fresh graduates with adequate skill of adaptivity. For example, adapting to the use of ICT can improve individual's career competencies. Employer or superior could potentially strategized the steps on motivating their employee by applying career adaptability and to offer opportunities for professional training for employee's improvement. This research hopefully will provides a framework that can increase future researchers' knowledge toward understanding the needs of redesigning new program and talent development of the graduates. With further understanding the demand of industry in hiring employable graduate, consultation and discussion with industrial sector is needed and both parties should aware what are the criteria should the fresh graduates possess in order to become employable graduates.

## REFERENCES

- Abdul Rani, A., Abdul Ghani, A., & Ahmad, S. (2013). The Impact of Spiritual Intelligence in Reducing Job Stress: Case Studies in Malaysia University of East Coast of Malaysia. *The Macrotheme Review*, 2(4), 183–192.
- Ataç, L. O., Dirik, D., & Tetik, H. T. (2018). Predicting career adaptability through self-esteem and social support: A research on young adults. *International Journal for Educational and Vocational Guidance*, 18(1), 45–61. <https://doi.org/10.1007/s10775-017-9346-1>
- Barrick, M. R., & Mount, M. K. (1991). The big five personality dimensions and job performance. *Personnel Psychology*, 44, 1–26. <https://doi.org/10.1111/j.1744-6570.1991.tb00688.x>
- Becker, T. E. (1998). Integrity in organizations: Beyond honesty and conscientiousness. *Academy of Management Review*, 23(1), 154–161. <https://doi.org/10.5465/AMR.1998.192969>
- Betz, N. E. (1994). Self-Concept Theory in Career Development and Counseling. *The Career Development Quarterly*, 43(1), 32–42. <https://doi.org/10.1002/j.2161-0045.1994.tb00844.x>
- Bloch, D. P. (2005). Complexity , Chaos , and Nonlinear Dynamics : A New Perspective on Career Development Theory. *The Career Development Quarterly*, 53(March), 194–207.
- Boudreau, J. W., Boswell, W. R., & Judge, T. A. (1999). *Effects of Personality on Executive Career Success*

- in the U.S. and Europe. *CAHRS Working Paper Series #99-12*. Ithaca. <https://doi.org/10.1006/jvbe.2000.1755>
- Boudreau, J. W., Boswell, W. R., & Judge, T. A. (2001). Effects of Personality on Executive Career Success in the United States and Europe. *Journal of Vocational Behavior*, 58(1), 53–81. <https://doi.org/10.1006/jvbe.2000.1755>
- Cady, D. M. (2004). Spirituality and Student Development. In *Searching for Spirituality in Higher Education* (pp. 97–109). Peter Lang Publishing, Inc.
- Cai, Z., Guan, Y., Li, H., Shi, W., Guo, K., Liu, Y., ... Hua, H. (2015). Self-esteem and proactive personality as predictors of future work self and career adaptability: An examination of mediating and moderating processes. *Journal of Vocational Behavior*, 86, 86–94. <https://doi.org/10.1016/j.jvb.2014.10.004>
- Chan, K. Y., Uy, M. A., Ho, M. ho R., Sam, Y. L., Chernyshenko, O. S., & Yu, K. Y. T. (2015). Comparing two career adaptability measures for career construction theory: Relations with boundaryless mindset and protean career attitudes. *Journal of Vocational Behavior*, 87, 22–31. <https://doi.org/10.1016/j.jvb.2014.11.006>
- Chong, S. H., & Leong, F. T. L. (2017). Antecedents of Career Adaptability in Strategic Career Management. *Journal of Career Assessment*, 25(2), 268–280. <https://doi.org/10.1177/1069072715621522>
- Creed, P. A., Fallon, T., & Hood, M. (2009). The relationship between career adaptability, person and situation variables, and career concerns in young adults. *Journal of Vocational Behavior*, 74(2), 219–229. <https://doi.org/10.1016/j.jvb.2008.12.004>
- Ellis, R. A., & Taylor, M. S. (1983). Role of self-esteem within the job search process. *Journal of Applied Psychology*, 68(4), 632–640. <https://doi.org/10.1037/0021-9010.68.4.632>
- Emmons, R. A. (2000). International Journal for the Psychology of Religion A Case Against Spiritual Intelligence. *The International Journal for the Psychology of Religion*, 10(1), 3–26. <https://doi.org/10.1207/S15327582IJPR1001>
- Ghosh, A., & Fouad, N. A. (2017). Career Adaptability and Social Support Among Graduating College Seniors. *Career Development Quarterly*, 65(3), 278–283. <https://doi.org/10.1002/cdq.12098>
- Guan, Y., Dai, X., Gong, Q., Deng, Y., Hou, Y., Dong, Z., ... Lai, X. (2017). Understanding the trait basis of career adaptability: A two-wave mediation analysis among Chinese university students. *Journal of Vocational Behavior*, 101, 32–42. <https://doi.org/10.1016/j.jvb.2017.04.004>
- Hall, D. T., & Chandler, D. E. (2005). Psychological Success: When the career is a calling. *Journal of Organizational Behavior*, 26(December 2003), 155–176. <https://doi.org/10.1002/rra.736>
- Hogan, J., & Ones, D. S. (1997). Conscientiousness and Integrity at Work. In R. Hogan, J. Johnson, & S. Briggs (Eds.), *Handbook of Personality Psychology* (pp. 849–870). Academic Press. <https://doi.org/10.1016/B978-012134645-4/50033-0>
- Hosseini, M., Elias, H., Krauss, S. E., & Aishah, S. (2010). A Review Study on Spiritual Intelligence , Adolescence and Spiritual Intelligence , Factors that May Contribute to Individual Differences in Spiritual Intelligence , and the Related Theories. *International Journal of Psychological Studies*, 2(2), 179–188.
- Ismail, S. (2017). Graduate employability capacities, self-esteem and career adaptability among South African young adults. *SA Journal of Industrial Psychology*, 43(0), 1–10. <https://doi.org/10.4102/sajip.v43i0.1396>
- Jackson, D. (2016). Modelling graduate skill transfer from university to the workplace. *Journal of Education and Work*, 29(2), 199–231. <https://doi.org/10.1080/13639080.2014.907486>
- Janeiro, I. N., Mota, L. P., & Ribas, A. M. (2014). Effects of two types of career interventions on students with different career coping styles. *Journal of Vocational Behavior*, 85(1), 115–124. <https://doi.org/10.1016/j.jvb.2014.05.006>
- Judge, T. A., & Bono, J. E. (2001). Relationship of core self-evaluations traits - Self-esteem, generalized self-efficacy, locus of control, and emotional stability - With job satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology*, 86(1), 80–92. <https://doi.org/10.1037/0021-9010.86.1.80>
- Judge, T. A., Erez, A., Bono, J. E., & Thoresen, C. J. (2003). the Core Self-Evaluations Scale: Development of a Measure. *Personnel Psychology*, 56(d), 303–331. <https://doi.org/doi:10.1111/j.1744-6570.2003.tb00152.x>
- Kidd, J. M. (1984). The relationship of self and occupational concepts to the occupational preferences of

- adolescents. *Journal of Vocational Behavior*, 24(1), 48–65. [https://doi.org/10.1016/0001-8791\(84\)90065-4](https://doi.org/10.1016/0001-8791(84)90065-4)
- Koen, V., Asada, H., Nixon, S., Rahuman, M. R. H., & Arif, A. Z. M. (2017). *Malaysia's Economic Success Story and Challenges*.
- Lent, R. W., & Brown, S. D. (2013). Social Cognitive Model of Career Self-Management: Toward a Unifying View of Adaptive Career Behaviors Across the Life Span. *Journal of Counseling Psychology*, 60(4), 557–568. <https://doi.org/10.1037/a0033446>
- Li, Y., Guan, Y., Wang, F., Zhou, X., Guo, K., Jiang, P., ... Fang, Z. (2015). Big-five personality and BIS/BAS traits as predictors of career exploration: The mediation role of career adaptability. *Journal of Vocational Behavior*, 89, 39–45. <https://doi.org/10.1016/j.jvb.2015.04.006>
- Love, P., & Talbot, D. (2009). Defining Spiritual Development: A Missing Consideration for Student Affairs. *Journal of Student Affairs Research and Practice*, 46(4), 614–629. <https://doi.org/10.2202/1949-6605.5035>
- Maree, J. G. (2012). Career Adapt-Abilities Scale-South African Form: Psychometric properties and construct validity. *Journal of Vocational Behavior*, 80(3), 730–733. <https://doi.org/10.1016/j.jvb.2012.01.005>
- Marques, J. F. (2006). The spiritual worker. *Journal of Management Development*, 25(9), 884–895. <https://doi.org/10.1108/02621710610692089>
- Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, 50(4), 370–396. <https://doi.org/10.1037/h0054346>
- Mitroff, I. I., & Denton, E. a. (1999). A study of spirituality in the workplace. *Sloan Management Review*, 40(4), 83–92.
- Philemon Kazimil Mzee (2012). The Context of Globalization and Human Resource Need and Strategy for Developing Countries - The Case of African Countries, Globalization - Education and Management Agendas, Hector Cuadra-Montiel, IntechOpen, DOI: 10.5772/45615. Available from: <https://www.intechopen.com/books/globalization-education-and-management-agendas/the-context-of-globalization-and-human-resource-need-and-strategy-for-developing-countries-the-case>
- Rosenberg, M., Schooler, C., Schoenbach, C., & Rosenberg, F. (1995). Global Self-Esteem and Specific Self-Esteem: Different Concepts, Different Outcomes. *American Sociological Review*, 60, 141–156. <https://doi.org/10.2307/2096350>
- Rusu, A., Măirean, C., Hojbotă, A. M., Gherasim, L. R., & Gavriloiăie, S. I. (2015). Relationships of career adaptabilities with explicit and implicit self-concepts. *Journal of Vocational Behavior*, 89, 92–101. <https://doi.org/10.1016/j.jvb.2015.05.003>
- Savickas, M. L. (2013). Career Construction Theory. In S. D. Brown & R. W. Lent (Eds.), *Career Development and Counselling: Putting Theory and Research to Work* (2nd ed., pp. 147–183). New Jersey: John Wiley & Sons, Inc. <https://doi.org/10.1017/CBO9781107415324.004>
- Savickas, M. L., & Porfeli, E. J. (2011). Revision of the career maturity inventory: The adaptability form. *Journal of Career Assessment*, 19(4), 355–374. <https://doi.org/10.1177/1069072711409342>
- Savickas, M. L., & Porfeli, E. J. (2012). Career Adapt-Abilities Scale: Construction, reliability, and measurement equivalence across 13 countries. *Journal of Vocational Behavior*, 80(3), 661–673. <https://doi.org/10.1016/j.jvb.2012.01.011>
- Shavelson, R. J., Hubner, J. J., & Stanton, G. C. (1976). Self-Concept: Validation of Construct Interpretations. *Review of Educational Research*, 46(3), 407–441. <https://doi.org/10.3102/00346543046003407>
- Super, D. E. (1980). A life-span, life-space approach to career development. *Journal of Vocational Behavior*, 16(3), 282–298. [https://doi.org/10.1016/0001-8791\(80\)90056-1](https://doi.org/10.1016/0001-8791(80)90056-1)
- Super, D. E., & Jordaan, J. P. (1973). Career development theory. *British Journal of Guidance & Counselling*, 1(1), 3–16. <https://doi.org/10.1080/03069887308259333>
- Super, D. E., & Knasel, E. G. (1981). Career Development in Adulthood: Some Theoretical Problems and a Possible Solution. *British Journal of Guidance & Counselling*, 9(2), 194–201. <https://doi.org/10.1080/03069888108258214>
- Tee, S., Anantharaman, R. N., & Yoon, D. (2011). The Roles of Emotional Intelligence and Spiritual Intelligence at the Workplace. *Journal of Human Resource Management Research*, 2011, 1–9. <https://doi.org/10.5171/2011.582992>
- Turner de Tormes Eby, L., Allen, T. D., Hoffman, B. J., Baranik, L. E., Sauer, J. B., Baldwin, S., ... Evans,

- S. C. (2013). An Interdisciplinary Meta-Analysis of the Potential Antecedents , Correlates , and Consequences of Protégé Perceptions of Mentoring. *Psychological Bulletin*, 139(2), 441–476. <https://doi.org/10.1037/a0029279>
- van Vianen, A. E. M., Klehe, U. C., Koen, J., & Dries, N. (2012). Career adapt-abilities scale - Netherlands form: Psychometric properties and relationships to ability, personality, and regulatory focus. *Journal of Vocational Behavior*, 80(3), 716–724. <https://doi.org/10.1016/j.jvb.2012.01.002>
- Wigglesworth, C. (2011). Integral Theory and its relationship to Spiritual Intelligence and the SQi Assessment. Deep Change, Inc. Retrieved from <https://deepchange.com/IntegralSpiritualIntelligence2011.pdf>
- Zacher, H. (2014). Individual difference predictors of change in career adaptability over time. *Journal of Vocational Behavior*, 84(2), 188–198. <https://doi.org/10.1016/j.jvb.2014.01.001>
- Zacher, H. (2015). Daily manifestations of career adaptability: Relationships with job and career outcomes. *Journal of Vocational Behavior*, 91, 76–86. <https://doi.org/10.1016/j.jvb.2015.09.003>
- Zacher, H. (2016). Within-person relationships between daily individual and job characteristics and daily manifestations of career adaptability. *Journal of Vocational Behavior*, 92, 105–115. <https://doi.org/10.1016/j.jvb.2015.11.013>
- Zohar, D., & Marshall, I. (2004). *Spiritual Capital: Wealth We Can Live By*. San Fransisco: Berrett-Koehler Publishers, Inc.
- <http://graduan.moe.gov.my/skpg-report/dashboard/trendstatuspekerjaan.aspx>

## Antecedents of Work Satisfaction among Employees with Special Needs Child

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### ABSTRACT

*Issues related to employees with special needs child greatly affects the work satisfaction. Employees who, faced with this issues have problems related to ethical, financial, health, quit the job and task delayed, which are lead to a decreasing of employees work satisfaction. From the literature review that conducted by researcher, there is a lack of study of employees with special need child in a quantitative method and in work satisfaction area specifically. Work Satisfaction can defined as a measure of employee's contentedness with their job, whether or not they like the job or individual aspects or facets of jobs, such as the nature of work or supervision. and they can balance their work life and personal life. This has happened when the employees give full commitment to their duties and works and at the same time the organization or employer also fulfils all the needs of the employees. As a result, employees will have a high level of work satisfaction and the organization can enhance the company's performance. The theory of social cognitive career theory (SCCT) is suggested as a root of research study and the result of literature review also found that there are more potential factors influence the Work Satisfaction have to be study and expending of the role of Goal Direction Activity as a mediator in the theory. This concept paper is designed to assist researchers in conducting research on the level of work satisfaction among employees with special needs child and what factors influence it.*

**KEYWORDS:** Work Satisfaction, Special Needs Child, social cognitive career theory , flexibility

### 1.0 INTRODUCTION

Employees with special needs child have greater levels of stress compared to employees with typical child. They face great stress in caring for a special needs child as these child need more care and attention than those without special needs child. The impact they have had is immense in their lives especially in the care of their child and at the same time should focus on their careers. Compared with children without special physical or mental health issues, children with disabilities have more frequent and intense needs that can last beyond childhood (Lewis, Kagan, & Heaton, 2000; Porterfield, 2002; Roundtree & Lynch, 2006). The experiences of employed parents of children with special needs can be gleaned by studying one group of these families: those with children with serious emotional or behavioral disorders. The struggles, adaptations, and successes of these employed parents are related to their ability to achieve work-family fit; their flexibility in the work, family, and child care domains of their lives; and their access to sources of family support. Ultimately, fit, flexibility, and family support resources may relate to the quality of work and parenting roles experienced by these challenged employed parents Work-Family (Brennan. et al. 2007). This Issues explained how the level of work satisfaction effected. Negative responses are often associated with low levels of work satisfaction while positive responses are associated with high levels of work satisfaction. job satisfaction defines as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences" (Locke . 1976). Studies of employees with special needs child on the level of work satisfaction are significantly less compared to studies done on employees in generally. Most of the

studies on employees with special needs children are through qualitative methods and it is very interesting to be explored through a quantitative method. Besides that, the Social cognitive career theory (SCCT) by Lent & Brown, 2006 is also interesting to be investigated as this model identified several variables affecting work satisfaction.

## 2.0 EMPLOYEES WITH SPECIAL NEEDS CHILD ISSUES

Employees with special needs child are often associated with having a work satisfaction issues, where their satisfaction rate of work declines from time to time. These employees are often faced with issues of employment that come as a result they often violate existing rules. Job satisfaction scales vary in the extent to which they assess the affective feelings about the job or the cognitive assessment of the job (Hulin & Judge 2003). Affective job satisfaction is a subjective construct representing an emotional feeling individuals have about their job (Thompson & Phua 2012). As a company's superior it becomes their duty to understand the issues that occur and deal with them properly. It must be understood that those who have special needs have a different life of living as their special needs child need more attention and care to ensure their livelihood needs to be fulfilled and their welfare is on guard. One study of Danish caregivers reported that parents of children with an ADHD diagnosis showed lower workforce participation and earnings (Kvist et al. 2013). Caring for children with special health care needs amplifies these work- family challenges (Perrin, et al. 2007). The issues faced among employees with special needs child can be highlighted such as,

**Ethics problem;** Employees often come late to work and often take leave because they have to take care of their special children who are often hospitalized. 78 % of Adults caring for children with special needs have had to come to work late, leave early or take a short time off or a long-term Absence at some point while working and being a caregiver (National Alliance for Caregiving and the American Association of Retired People, 2009a). Excessive absence can seriously affect any organization and it might lead to high direct and indirect costs and low productivity (Mathis and Jackson 2008).

**Quit the job;** As a result of the pressures most of employees with special needs children have to make the decision to quit from work. Parents of children with disabilities frequently report quitting their jobs, reducing the number of hours worked, or changing jobs to accommodate care demands (Brennan & Brannan, 2005; Porterfield, 2002; Rosenzweig et al. 2002; Rosenzweig & Huffstutter, 2004; Thyen, Kuhlthau, & Perrin, 1999)

**Mental Health problems;** Employees also have to face with health problem As a result of the stress of caring for a special child and the workload. The impact of raising a child with ASD on parental well-being have consistently demonstrated that these parents experience mental health issues (Bromley, Hare, Davison, & Emerson, 2004; Hoefman et al., 2014), physical health issues (Hoefman et al., 2014; Matthews et al., 2011),

**Financial problem;** The cost of living for special need child is very high and sometimes the cost are more than the salary received by the employee. Caring child with special need requires a very high patience and requires guardians to spend quite a lot of money to buy their child need such as, diapers, oxygen machine phlegm suction machine and other related equipment. Median annual parental costs of caring for 80 children with IDD was CAD\$44,570 (range CAD\$2245e\$225,777). The largest contributors to parental costs were income loss and caregiving time costs. (Genereaux, Et al. 2015). The cost of caring for a person with ASD during his or her lifetime has been estimated to be \$1.4 million in the United States (Buescher, Cidav, Knapp, & Mandell, 2014). Caring for a child with a special health care need affects parents in multiple ways. They experience greater financial hardship (Kuhlthau et al., 2005). Parents of children with chronic health conditions experience greater financial hardship, reduced employment, poorer mental health, and increased stress compared to parents without such children (Perrin, et al. 2007).

**Flexibility;** Employees also often face issues of lack of flexibility in their work that lead to increased stress. Exceptional caregiving responsibilities are often time consuming, occur during the workday, and require flexibility in schedule and time. Flexibility has been conceptualized as “a puzzle of many pieces that comes



mainly from the parent's immediate environment of work, family, and childcare" (Emlen .2010). Additionally, workplace flexibility positively affected mental and physical health of caregivers with exceptional care responsibilities (Earle and Heymann, 2011).

### 3.0 ANTECEDENTS OF WORK SATISFACTION

Therefore, we did some investigation by looking at what the factors influences work satisfaction from a literature review that could be helpful to find a solution for what employees with special needs child are facing currently. Through our research, we have come up with a theory that explains several factors that can affect work satisfaction through **Social cognitive career theory (SCCT)** by Lent & Brown. 2006. New model is consider implications for forging an understanding of satisfaction that bridges the often disparate perspectives of organizational and vocational psychology (Lent & Brown. 2006). The theory is base on Social cognitive career theory by Lent, Brown, & Hackett.1994, and it was originally designed to help explain interest development, choice, and performance in career and educational domains. The model of SCCT by Lent & Brown. 2006 explained some variable that influenced the level of satisfaction such as, (a) work/educational satisfaction, (b) personality and affective traits, (c) goals and goal-directed activity, (d) self-efficacy, (e) work conditions and outcomes, and (f) goal-relevant environmental supports, resources, and obstacles.is a theory that is aimed at explaining three interrelated aspects of career development: (1) how basic academic and career interests develop, (2) how educational and career choices are made, and (3) how academic and career success is obtained.

**Personality and Effect Traits;** This variable explained how personality trait can effect work satisfaction. Several meta-analyses have provoked a serious reconsideration of the role that affective (positive and negative affect) and personality traits (the Big Five factors) play relative to work and life satisfaction. On the trait front, a good deal of research shows that job and life satisfaction are each reliably related to positive and negative affectivity (Connolly & Viswesvaran, 2000; Thoresen, Kaplan, Barsky, Warren, & de Chermont. 2003) and to several Big Five factors (neuroticism, extraversion, and conscientiousness; Heller et al., 2004; Judge et al., 2002).

**Goal Directed Behavior;** This item stated that some activities to achieve the goal have influenced the work satisfaction. Goal-directed behavior may be a key element in the experience of both domain and overall life satisfaction. Goals have been defined as "consciously articulated, personally relevant objectives" that lend a sense of purpose and direction to people's behavior (Elliot, Sheldon, & Church.1997). Goal pursuit and progress represent key ways in which people contribute to their own well-being (Cantor & Sanderson. 1999). Therefore, researcher can investigate on how much effort that have done by employees with special needs child to reach the goal sets by organization in learning perspective. A desire to develop the self by acquiring new skills, mastering new situation, and improving ones competence.( Vandewalle. 1997). In addition, this variable also has the potential to act as a mediator of the relationship between variables and work satisfaction.

**Self Efficacy;** Self efficacy is a belief in employees that they believe in their ability to do their job. Self-efficacy refers to personal beliefs about one's ability to perform the behaviors necessary to achieve one's work- related goals (i.e., goal self-efficacy) or, more generally, to perform tasks required for success in one's work environment (task self-efficacy) If goal-setting and progress are key argentic routes to work and educational satisfaction, then it is important to consider the variables that foster them (Lent, & Brown.2006). Lent & Brown 200 stated that self efficacy significant to work satisfaction. Self efficacy has also been found to predict job satisfaction in employed workers (Caprara et al. 2003).

**Work conditions and outcomes;** Work values and expectancy-value beliefs in this category because they are often assessed by indexing individuals' perceptions about the extent to which the work environment meets, or is likely to meet, their preferences for workplace reinforces (i.e., provide valued outcomes and conditions). (Robert & Lent.2006). The findings of the new SCCT model found that this item significantly affected work satisfaction.

**Goal and efficacy-relevant environmental supports and obstacles;** As noted above, a variety of contextual supports and constraints can be important sources of job satisfaction (Lent & Brown, 2006). Employers identified several promising opportunities for improving the use of benefits by employees with children with special needs and its included by supervisor training to increase sensitivity to the needs of employees with children with special needs and strategies for creating a supportive work environment; and workplace environment/ culture assessment to determine how to create and promote a more supportive environment (Perrin, Fluet, Honberg, Anderson, Wells, Epstein & Kuhlthau, 2007).

#### **4.0 FUTURE RESEARCH**

Based on the issues discussed and statistic reports of the number of parents with special needs child in the world generally indicate how emphasize of a study or research regarding work satisfaction among employees with special needs child need to be done. In Australia, 1 in every 14 children and young people aged 0–24 years has a disability and almost half of this group (44%; 219,800 children) have severe or profound core activity limitations, as described by the ICF (Australian Bureau of Statistics, 2010). The National Institutes of Health estimates that there are between 40 and 50 million people in the USA living with disabilities. (National Center for Health Statistics, 2005). Sixty-one percent of the adults caring for elderly and disabled family members` and 53% of parents of children with special needs are employed. Yet studies examining the experience of employed caregivers of children with special needs and elderly or disabled adult family members have not examined the impact on earnings or the workplace policies that might help reduce the conflicts between work and caregiving (Earlea and Heymann, 2012). In addition, statistic data by the Department of Welfare Malaysia, showed a reduction of parents sending their special child to the Pusat Dalam Komuniti (PDK) from 2536 children in 2014 to 2446 children for 2015 and to 2137 children for 2016. This also emphasize to do a research to find out why parents, especially those at work, have not sent their children to this training center. It is possible they are not given a flexible time in work that led to this problem. Many parents relied on informal supervisory support to make flexible work arrangements, rather than relying on formal policies in the organization (Matthews et al. 2011). The study of the level of work satisfaction of employees with special needs child quantitatively presents a new dimension regarding latest issues in the human resource development field, that applies the theory of SCCT (Lent & Robert, 2006). There will be a contribution of knowledge which there are more potential variable have to be explored that influence work satisfaction. The role variable goal directed behaviour also has a potential to be expand in the future as more variable becoming as a influencer to work satisfaction. Through our model was primarily aimed at explaining overall work satisfaction, it would also be useful to test its utility relative to facet satisfaction. Because different work conditions or rewards are differentially important to different individuals (e.g., one person may value pay above all else, while another's happiness may be more heavily tied to autonomy or creative expression), study of facet satisfaction may profit from use of idiographic methods (e.g., identifying individuals' primary values or goals and examining the extent to which they are fulfilled). Such idiographic research would call for adaptations in how the central predictor variables are measured, with efforts to ensure that they correspond appropriately with the work facets under consideration (Lent & Brown, 2006).

#### **5.0 CONCLUSION**

Employees need work to meet their living and family needs, and it is undeniable that employees are assets to a company or organization. Employees with high knowledge and skills in their fields are very much needed by the organization and they will always be appreciated by the company. An employees will spend 8 hours or more at his place of work by giving full commitment to their task. The workplace has become their second home and it has a very high impact on the life of an employee. It will affect his personal life and his working life. In this regard, work satisfaction among employees is crucial in promoting the company. Companies need to have the responsibility of maintaining work satisfaction within the employees, as well as the employees themselves who are responsible for themselves in maintaining the level of work satisfaction. A better understanding of factors influencing the level of work satisfaction is important for organizations to enhance productivity and employees management. Therefore, we would like to suggest that research on employees with special needs children should be carried out to ensure the level of work satisfaction among them is maintained and thus enhance organizational development.

## REFERENCES

- Australian Bureau Of Statistics. (2013). Labour Force, Australia: Labour Force Status And Other Characteristics Of Families, June 2012. Retrieved From <http://www.abs.gov.au/Ausstats/Abs@.Nsf/Detailspage/6224.0.55.001jun%202012?OpenDocument>.
- Bandura, A. 1986. Social Foundations Of Thought And Action: A Social Cognitive Theory. Englewood Cliffs, Nj: Prentice-Hall.
- Bandura, A. 1997. Self-Efficacy: The Exercise Of Control. New York: Freeman.
- Brennan, E. M., & Brannan, A. M. (2005). Participation In The Paid Labor Force By Caregivers Of Children With Emotional And Behavioral Disorders. *Journal Of Emotional And Behavioral Disorders*, 13, 237-246
- Brennan, E. M., Rosenzweig, J. M., Ogilvie, A. M., Wuest, L., & Shindo, A. A. (2007). Employed Parents Of Children With Mental Health Disorders: Achieving Work-Family Fit, Flexibility, And Role Quality. *Families In Society*, 88(1), 115–123. <https://doi.org/10.1606/1044-3894.3599>
- Bromley, J., Hare, D. J., Davison, K., & Emerson, E. (2004). Mothers Supporting Children With Autistic Spectrum Disorders: Social Support, Mental Health Status And Satisfaction With Services. *Autism*, 8(4), 409–423. Doi:10.1177/1362361304047224
- Buescher, A. V., Cidav, Z., Knapp, M., & Mandell, D. S. (2014). Costs Of Autism Spectrum Disorders In The United Kingdom And The United States. *Jour-Nal Of The American Medical Association Pediatrics*, 168, 721–728. <http://dx.doi.org/10.1001/Jamapediatrics.2014.210>
- Cantor, N., & Sanderson, C. A. (1999). Life Task Participation And Well-Being: The Importance Of Taking Part In Daily Life. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-Being: The Foundations Of Hedonic Psychology* (Pp. 230–243). New York: Russell Sage Foundation.
- Caprara, G. V., Barbaranelli, C., Borgogni, L., & Steca, P. (2003). Eycacy Beliefs As Determinants Of Teachers' Job Satisfaction. *Journal Of Educational Psychology*, 95, 821–832.
- Chung, P. J., Garfield, C. F., Elliott, M. N., Vestal, K. D., Klein, D. J., & Schuster, M. A. (2013). Access To Leave Benefits For Primary Caregivers Of Children With Special Health Care Needs: A Double Bind. *Academic Pediatrics*, 13(3), 222–228. <https://doi.org/10.1016/J.Acap.2013.01.00>
- Connolly, J. J., & Viswesvaran, C. (2000). The Role Of Affectivity In Job Satisfaction: A Meta-Analysis. *Personality And Individual Differences*, 29, 265–281.
- Department Of Social Welfare. (2014). Department Of Social Welfare Statistics Report 2014, 252. Retrieved From [http://www.jkm.gov.my/File/Buku\\_Jkm\\_2014.Pdf](http://www.jkm.gov.my/File/Buku_Jkm_2014.Pdf)
- Earle, A., & Heymann, J. (2011). Protecting The Health Of Employees Caring For Family Members With Special Health Care Needs. *Social Science And Medicine*, 73(1), 68–78. <https://doi.org/10.1016/J.Socscimed.2011.05.016>
- Emlen, A. C. (2010). Solving the childcare and flexibility puzzle: How working parents make the best feasible choices and what that means for public policy. Boca Raton, FL: Universal Publishers
- Genereaux, D., Van Karnebeek, C. D. M., & Birch, P. H. (2015). Costs of caring for children with an intellectual developmental disorder. *Disability and Health Journal*, 8(4), 646–651. <https://doi.org/10.1016/j.dhjo.2015.03.011>
- Heller, D., Watson, D., & Ilies, R. (2004). The role of person versus situation in life satisfaction: A critical examination. *Psychological Bulletin*, 130, 574–600.
- Hulin, C. L., & Judge, T. A. (2003). Job Attitudes. In W. C. Borman, D. R. Ligen, & R. J. Klimoski (Eds.), *Handbook Of Psychology: Industrial And Organizational Psychology* (Pp. 255-276). Hoboken, Nj: Wiley.
- Hoffman, C. D., Sweeney, D. P., Hodge, D., Lopez-Wagner, M. C., & Looney, L. (2009). Parenting Stress And Closeness: Mothers Of Typically Developing Children And Mothers Of Children With Autism. *Focus On Autism And Other Developmental Disabilities*, 24(3), 178–187. Doi:10.1177/1088357609338715.
- James M. Perrin, Christina F. Fluet, Lynda Honberg, Betsy Anderson, Nora Wells, Susan Epstein, Deborah Allen, Carol Tobias and Karen A. Kuhlthau Benefits For Employees With Children With Special Needs: Findings From The Collaborative Employee Benefit Study *Health Affairs* , 26, no.4 (2007):1096-1103

- Judge, T. A., Heller, D., & Mount, M. K. (2002). Five-factor model of personality and job satisfaction: A meta-analysis. *Journal of Applied Psychology*, 87, 530–541.
- Judge, T. A., & Ilies, R. (2002). Relationship of personality to performance motivation: A meta-analytic review. *Journal of Applied Psychology*, 87, 797–807.
- Kvist, A. P., Nielsen, H. S., & Simonsen, M. (2013). The Importance Of Children's Adhd For Parents' Relationship Stability And Labor Supply. *Social Science & Medicine*, 88, 30–38. Doi:10.1016/J.Socscimed.2013.04.001
- Kuhlthau, K., Smith Hill, K., Yucel, R., & Perrin, J. (2005). Financial Burden For Families Of Children With Special Health Care Needs. *Maternal And Child Health Journal*, 9(2), 207–218.
- Lent, R. W., Brown, S. D. And Hackett, G. 1994. "Toward A Unifying Social Cognitive Theory Of Career And Academic Interest, Choice, And Performance" [Monograph]. *Journal Of Vocational Behavior* 45:79-122
- Lent, R. W., & Brown, S. D. (2006). Integrating Person And Situation Perspectives On Work Satisfaction: A Social-Cognitive View. *Journal Of Vocational Behavior*, 69(2), 236–247. <https://doi.org/10.1016/J.Jvb.2006.02.006>
- Lewis, S., Kagan, C., & Heaton, P. (2000a). Dual-Earner Parents With Disabled Children: Family Patterns For Working And Caring. *Journal Of Family Issues*, 21(8), 1031– 1061.
- Lewis, S., Kagan, C., & Heaton, P. (2000b). Managing Work–Family Diversity For Parents Of Disabled Children: Beyond Policy To Practice And Partnership. *Personnel Review*, 29(3), 417–430.
- Locke, E.A. (1976). The nature and causes of job satisfaction. In M.D. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp.1297-1349). Chicago: Rand McNally.
- Mathis, Robert L., And John Harold Jackson. 2008. *Human Resource Management*. 12th Ed. Mason, Oh: Thomson/ South-Western.
- National Alliance For Caregiving And American Association Of Retired People. (2009a). *Caregivers Of Children: A Focused Look At Those Caring For A Child With Special Needs Under The Age Of 18*. Washington, Dc: National Alliance For Caregiving And Aarp.
- National Center for Health Statistics. (2005). *Health, United States, 2005*. Hyattsville, MD: NCHS. Retrieved from <http://www.cdc.gov/nchs/data/abus/abus05.pdf>.
- Perrin, J. M., Fluet, C. F., Honberg, L., Anderson, B., Wells, N., Epstein, S., ... Kuhlthau, K. A. (2007). Marketwatch - Benefits For Employees With Children With Special Needs: Findings From The Collaborative Employee Benefit Study. *Health Affairs*, 26(4), 1096–1103. <https://doi.org/10.1377/Hlthaff.26.4.1096>
- Porterfield, S. L. (2002). Work Choices Of Mothers In Families With Children With Disabilities. *Journal Of Marriage And Family*, 64, 972-981.
- Rosenzweig, J. M., Brennan, E. M., & Ogilvie, A. M. (2002). Work–Family Fit: Voices Of Parents Of Children With Emotional And Behavioral Disorders. *Social Work*, 47(4), 415–424.
- Rosenzweig, J. M., & Huffstutter, K. J. (2004). Disclosure And Reciprocity: On The Job Strategies For Taking Care Of Business And Family. *Focal Point: A National Bulletin On Family Support And Children's Mental Health*, 18, 4–7.
- S. (2016). Foreword of Director General of Social Welfare. *Laporan Statistik Jabatan Kebajikan Masyarakat*. Retrieved from [http://www.jkm.gov.my/jkm/uploads/files/penerbitan/Buku\\_statistik\\_2016.pdf](http://www.jkm.gov.my/jkm/uploads/files/penerbitan/Buku_statistik_2016.pdf)
- Tahunan, B., & Jabatan, P. (2015). *Buku JKM 2015 Final*.pdf.
- Thompson, E.R.; Phua F.T.T. (2012). "A Brief Index of Affective Job Satisfaction" *Group & Organization Management* 37 (3): 275–307.
- Thoresen, C. J., Kaplan, S. A., Barsky, A. P., Warren, C. R., & de Chermont, K. (2003). The aVective underpin-nings of job perceptions and attitudes: A meta-analytic review and integration. *Psychological Bulletin*, 129, 914–945.
- Thyen, U., Kuhlthau, K., & Perrin, J.M. (1999). Employment, Child Care, And Mental Health Of Mothers Caring For Children Assisted Bytechnology. *Pediatrics*, 103(6), 1235–1242

## Cohesive Theoretical Framework in Measuring Teachers' Innovative Behavior in Malaysia

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### ABSTRACT

*On July 2019, Ministry of Education (MoE) has launched the PPPM 2013-2025 (Pelan Pembangunan Pendidikan Malaysia) 2018 Annual Report. It indicated that after six years of implementation, there was an improvement in five key areas in the Malaysian Education Development Plan. The five main aspects are access to education, improving quality in education, equity in education, developing student values and personality and strengthening unity through education as well as enhancing efficiency in Education. This is a good indicator in confirming the Malaysian's school standard curriculum that stresses on the importance for innovations to be integrated in teaching and learning practices to ensure quality preparation of all students to life and work. Henceforth, the education system has been transformed to produce balanced, creative, critical and innovative people through communication, science and technology, physical and aesthetic development, self-esteem, humanity and spirituality as well as attitudes and values. It is important that the educators need to exhibit innovative behaviour to nurture the students in a smooth and systematic manner in accordance to the MoE philosophy. Under the National Philosophy, the education system is designed to produce citizens who are apart from being knowledgeable and competent, yet also able to contribute to the betterment of the nation at large. The innovative nature of education is determined by the teachers' innovative behaviour and their ability to generate, create, develop, apply, promote, realize and modify new ideas to improve their teaching and students' learning performance. Therefore, this conceptual paper is prepared to develop a theoretical framework for assessing the teachers' innovative behaviour in several public schools in Malaysia. Among the major latent factors that have analytical potential of teacher's innovative behaviour are perceived supervisory support, teamwork and humor. The theoretical foundation used for this study is the integration of Stage Model of Innovative Behavior, Bandura's Social Cognitive Theory and Social Exchange Theory.*

**KEYWORDS:** Stage Model of Innovative Behaviour, Bandura's Social Cognitive Theory and teachers' innovative behaviour.

## 1.0 INTRODUCTION

According to Dr. Maszlee bin Malik, the Minister of Education in his opening speech at the opening ceremony of the National Education Research and Innovation Conference (PPIPK 2018) on 12 September 2018, innovation can be defined as the creation and implementation of a process, product, service or new delivery method, which requires a strong synergy between intelligence, creativity and uniqueness. Meanwhile, innovative behaviour can be described as an individual's behaviour in generating, creating, applying, promoting, realizing and modifying new ideas in order to improve task performance (de Jong & Den Hartog, 2005; Konermann, 2012).

In today's globalized world and knowledge-based societies where competition is intense, innovation is regarded as crucial for organizational sustainability and success. This is because innovation is proven to contribute to improvement in results, efficiency, effectiveness, quality as well as foster creative thinking and increase work productivity and task performance as shown in past studies (Janssen, 2000; Shalley et al., 2004; Rhee, Park and Lee, 2010). In the context of education, innovation can also improve the existing instructional approach which can lead to better learning. As highlighted by Meyer et al. (2014), when various innovations are being introduced in the conventional course of study such as applying more expressive presentation of new material using multimedia, using more effective teaching methods or new mnemonic techniques, students' learning productivity may rise to some extent.

The innovative nature of education is determined by the innovative behaviour of teachers and their ability to generate, create, develop, apply, promote, realize and modify new ideas to improve their teaching and students' learning performance. In the 21<sup>st</sup> century of education, innovative behaviour is central to the

teaching profession in order to develop a knowledge society (Brandsford, Derry, Berliner & Hammerness, 2005). Therefore, many countries have been constantly improving their approaches in education by raising the quality of learning at all levels through innovative teaching and learning practice. This includes the application of a new pedagogic theory, methodological approach, teaching technique, instructional tool, learning process, or institutional structure that, when implemented, produces a significant change in teaching and learning practices, and results in better quality of student learning (Serdyukov, 2017; Fullan, 2007). In addition, since the way schools operate keeps on changing to keep up with more varied student populations, expanding knowledge fields, new responsibilities and higher social expectations, innovative behaviour is important especially for those in the teaching profession in order to sustain with a rapidly changing society (Organisation for Economic Cooperation and Development, 2005).

Like other countries, the Malaysian Government also realizes the urgency for its educational system to continuously evolve to meet the challenges of the fast-changing and unpredictable globalized world and to keep up with the nation's increasing aspirations. As stated in the Malaysia Education Blueprint 2013 – 2025, the government had stressed the importance for innovations to be integrated in teaching and learning practices to ensure quality preparation of all students to life and work.

In 2016, there have been many training courses for teachers with the objective of achieving the country's vision in the First Strategic Thrust of 10MP: The transformation of the nation requires the transformation of the government machinery to support changes in the economic landscape. To emerge as a competitive nation at the global level, the government needs to increasingly act as a competitive corporation. In pursuing this aspiration, the government will uphold four main pillars, that is, the "four by four" formula: (1) The 1Malaysia, People First, Performance Now philosophy, (2) The Government Transformation Programme or GTP, (3) The Economic Transformation Programme or ETP, which rests on the New Economic Model and (4) The five-year development plans, which are the 10th and 11th Malaysia Plans. These four main pillars are supported by four complementary values: acculturation of creativity and innovation, emphasis on speed of decision-making and execution, value for money and integrity values.

Many studies have been carried out to study innovative behaviour of teachers. Some researchers had proven that innovative behaviour of teachers has a significant relationship with their job performance (Balkar, 2015; Xerri & Brunetto, 2011; Dörner, 2012). This is consistent with Rhee, Park and Lee (2010) that innovativeness exerts a positive influence on performance. Similarly, Messmann, Mulder and Gruber (2010) examined the characteristics of professionalism under professional knowledge, performance and development and determined that there is a positive relationship between characteristics of professionalism and innovative work behaviour of teachers. Other researchers had focused on the determinants of innovative behaviour among teachers, either at individual and organizational level (Thurlings, Ever & Vermeulen, 2014; Binnewies & Gromer, 2012; Eteokleous, 2008; Kimonen & Nevalainen, 2005; Loogma et al., 2012; Mohammad & Harlech-Jones, 2008; Mueller et al., 2008; Noefer et al., 2009; Schussler et al., 2007; Yang & Huang, 2008).

Literature has indicated that besides conflict with co-workers, a worker's innovative behaviour might also be resisted by other actors in the work environment, such as supervisors, subordinates or other stakeholders of the organization. Janssen (2003). This further explained by Anderson, de Dreau & Nijstad, 2004; Zhou & Shalley, 2003 stating that employees' innovative behaviour depends greatly on their interaction with others in the workplace. In describing team approaches, Stott and Walker (1999) list out expansion as value-laden terms such as collaboration, empowerment, co-operation and consultation as being used freely to describe the shape, form and processes of future schools. From these gathered terms, it suggests that people become more productive and more satisfied in their jobs when they work together closely.

## **2.0 DEFINITION OF INNOVATIVE BEHAVIOUR**

Most literature on innovation followed the definition of innovative behaviour provided by Janssen (2003) who described it as a three-stage process: (a) intentional idea generation, (b) idea promotion, and (c) idea realization, within a work role, work group, or organization, in order to benefit role performance, the group, or the organization. In the context of educational innovations, teachers' innovative behaviour can be described as performing the innovation by observing, listening to, and adapting ideas, building a strategy of action, assessing through reflection and evaluation, adjusting the innovation, and finding allies (Messmann & Mulder, 2011).



Hence, the definition of teachers' innovative behaviour in this study is derived from Janssen (2003) which is 'the extent to which teachers intentionally strive to generate, promote and realize new ideas by incorporating technology and creativity into all aspects of teaching and learning practices to increase students' engagement in the classroom, to improve students' ability to learn, and to identify and address the different needs of students' learning.

### **3.0 COHESIVE FRAMEWORK: STAGE MODEL OF INNOVATIVE BEHAVIOR, BANDURA'S SOCIAL COGNITIVE THEORY AND SOCIAL EXCHANGE THEORY.**

#### **3.1 Stage Model of Innovative Behavior**

Kanter (1988) described her three efforts in designing research on aspects of innovation in organization, emphasized on the fact that a study on successful innovative projects illuminated the distinctive characteristics of innovation process, where there are differences between innovations and other kinds of managerial activity. A pace of events was associated with the innovations studies, when there are four identified innovation tasks. (1) idea generation and activation of the drivers of the innovation, (2) coalition building and acquisition of the power necessary to move the idea to reality, (3) idea realization and innovation production, turning the idea into a model that can be used, (4) transfer or diffusion, the spreading of the model – the commercialization of the product, the adoption of the idea.

Meanwhile, Scott and Bruce (1994), in their study on determinants of innovative behavior, reviewed innovation as a multistage process, with different activities and different individual behaviors necessary at each stage. They defined individual innovation, begins with problem recognition and the generation of ideas or solutions, either novel or adopted. In the next stage of the process, an individual seeks sponsorship for an idea and attempts to build a coalition of supporters for it. Finally, through the third stage of the innovation process, the innovative individual completes the idea by producing 'a prototype or model of the innovation that can now be diffused or turned to productive use' (Kanter, 1988).

#### **3.2 Bandura's Social Cognitive Theory**

It is proposed in this study that there is a positive relationship between teamwork and teachers' innovative behaviour which is moderated by perceived supervisor support. Bandura's social cognitive theory (Bandura, 1977) states that the social environment can enhance an individual's occupational self-efficacy in two ways: by the delivery of positive feedback ('social persuasion') and by offering opportunities to learn from others ('vicarious experience'). Therefore in this study, this theory can be utilized to explain the effects of teamwork factor and perceived supervisor support in enhancing teachers' occupational self-efficacy. According to Runhaar et al. (2016), when teachers' occupational self-efficacy is activated, this will enhance their engagement in innovative behaviour because people with high self-efficacy are likely to believe that the innovative ideas they bring in will be valued by others.

#### **3.3 Social Exchange Theory**

Searle (1991) defined social exchange theory as comprised of five central elements: 1. Behaviour is predicated upon the notion of rationality. 2. The relationship is based on reciprocation. 3. Social exchange is based on a justice principle. 4. Individuals will seek to maximize their gains and minimize their costs in the exchange relation. 5. Individuals participate in a relationship out of a sense of mutual benefit rather than coercion. Under the second element of the relationship is based on reciprocation. It is meant that everyone in the relationship will provide benefits to the other so long as the exchange is equitable, and the units of exchange are important to the respective parties. An exchange between two individuals must be fair by both for the relation to continue, or at least to continue as strongly. Searle (1991) further pointed out that it is not only important to respond fairly, but also with an item (not necessarily material) deemed to be important by the other person.

The model of social exchange may provide direction with respect to data collection processes used and the measurement of the variables. Blau (1964) viewed social exchange as a process of central significance in social life and as underlying the relations between groups as well as between individuals. He also pointed out that the social exchange refers to voluntary actions of individuals that are motivated by the returns they are expected to bring and actually bring from others. Based on Blau (1964) second element in the social exchange theory, Huang et al. (2009) deduced an exchange-based model for explaining the positive association between participative leadership behaviour and work performance focuses on the

reciprocal relationship between superiors and subordinates. When employees are well treated by their superiors, they are more likely to reciprocate by showing high levels of work performance or even by putting extra effort to contribute to their organizations (Blau, 1964; Moorman, 1991).

#### 4.0 INNOVATIVE BEHAVIOUR LATENT PREDICTORS

The framework of this article was developed and adapted based on Teachers' Innovative Behaviour Conceptual Model developed by Thurlings, Evers and Vermeulen (2014). Figure 1 illustrates the idea about the research framework which involves 'humour' and 'teamwork' as independent variables, 'perceived supervisor support' as a moderating variable and 'innovative behaviour' as dependent variable.

As explained explicitly by a preliminary model of factors that enhance innovative behaviour in educational organizations in Thurlings and Evers and Vermeulen (2014) innovative behaviour can be described as a process in which new ideas are generated, created, developed, applied, promoted, realized, and modified by employees to benefit role performance. Various reasons, such as rapid technological and social changes in society, underline the necessity for innovative behaviour of employees and teachers. They have concluded that the predictors of teacher's innovative behaviour can be categorized into two main categories (i.e. individual-related factor and organizational factors). The individual-related factor refers to teamwork and humor whereas the organizational factors refer to perceived supervisory support.

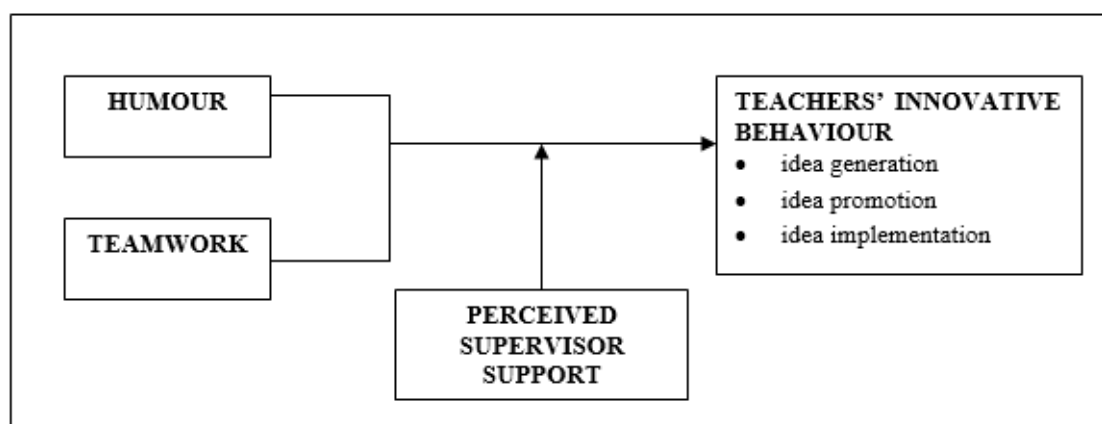


Figure 1: Research framework adopted from Teachers' Innovative Behaviour Conceptual Model (Thurlings et al., 2014))

#### 4.1 Teamwork and its Relationship to Innovative Behaviour

Teamwork is vital in today's organization management. Through optimum teamwork, it may lead to increased teacher's commitment and schools' excellence (Mohd, Lokman & Muzammil, 2009). Ahmad Zaharuddin's (2001) study as cited in Mohd et al. (2009) studied that the medium of teamwork between colleagues within departments, direct towards fast achievement of organization objectives. In a team, each member will be exposed to joy fulfilment, strength and privilege in working. They addressed team building as an important aspect in any organization.

Since innovation often is an interactive process in the sense that groups of individuals develop, promote, discuss, modify, and realize new ideas (Kanter, 1988; West & Farr, 1989), intra team interdependencies may play an important role in predicting individual team members' innovative behaviour. Conceptual and empirical analyses by Hoegl and Gemuenden (2001) on teamwork quality, and similarly by Sethi and Nicholson (2001) on charged team behaviour, acknowledge that performance-relevant team processes in innovative projects include not only task-related elements such as cooperation and integration, but also social elements such as enthusiasm, drive, and commitment.

#### 4.2 Humour and its Relationship to Innovative Behaviour

According to Romero and Cruthirds (2006), individuals who use a sense of humour during their work can maximize innovations and outcomes in the organization. Various other studies had shown that



various styles of humour were associated with innovative behaviour, creativity, and productivity (Tang, 2008; Cayirdag & Acar, 2010; Ho et al., 2011; Pundt, 2015; Amjed & Tirmzi, 2016; Hurmelinna-Laukkanen, Atta-Owusu, & Oikarinen, 2016; Promsri, 2017). However, most of these studies only investigated the impacts of leaders' humor style on employees' innovative behaviour.

In understanding the relationship between teachers' humour and innovative behaviour, Horng, Hong, ChanLin, Chang, & Chu (2005) studied the factors influencing creative teaching and revealed that teachers' sense of humour is one of the determinants to teachers' creativity in the classroom. Yu, Wu, Chen and Lin (2007) also supported this notion by adding that adult playfulness is also an influential factor to creative teaching and teachers' innovative behaviour. Pham (2014) further claimed that using humour in teaching can be seen as an innovative way to help students learn more effectively.

These findings are in line with the statement made by Rex Jung, an assistant research professor of neurosurgery at the University of New Mexico and a practicing clinical neuropsychologist that humour and lightened mood are important when it comes to encouraging creativity, ideation, and problem solving for innovators (*Psychology Today*, Jun 17, 2014). In addition, a study conducted by Kim (2016) showed that playfulness is one of the most critical attitudes exhibited by the world's greatest innovators. Innovative people tend to approach situations in an exploratory manner and see the lighter side of a challenge with a sense of humor, which enables flexible thinking. Although they are focused and passionate about their pursuits, they do not take themselves too seriously. Their playfulness frees their minds and helps them find ideas or solutions seemingly impossible using pure logic. This helps them overcome creative blocks and manage criticisms.

#### **4.2 Perceived Supervisor Support and its Relationship to Innovative Behaviour**

In the Malaysian education field, the supervisor support is translated in the roles of Panel Chiefs (Ketua Panitia, Ketua Bidang) and the Senior Assistants (Penolong Kanan). Holton et al. (2000) studied on supervisor support indicates that, one of the social support variables in the celebrated Learning Transfer System Inventory (LTSI) model is described as the extent to which supervisor-managers support and reinforce use of learning on the job. Such support takes the form of encouragement to a trainee to use newly learnt skills, assistance in identifying situations to use such skills, guidance in the proper application of the trained skills, provision of feedback, positive reinforcement of new applications and improvements, all of which facilitate positive transfer of training (Elangovan & Karakowsky, 1999).

### **5.0 CONCLUSION**

Based on the findings of this theoretical framework, it shall serve as a model made applicable in the local context as related to the main objective of this study in finding teamwork factor and humour factor as contributing to professional development among Malaysian teachers in relation to their innovative behaviour with today's challenges. This integrated theoretical framework in measuring teachers' innovative behaviour in Malaysia shall also assist the school's administrators in identifying the importance of teamwork in correlation to the generation of teacher's innovative behaviour. This also to lead to an objective of there is a need to improve supervisory support among the school's workforce to collaborate effectively in achieving the MOE philosophy.

In Human Resource Development (HRD), the term is applied to define an integrated and holistic, conscious and proactive approach to changing work-related knowledge and behaviour, using a range of learning strategies and techniques. Joy-Matthews, Megginson, and Surtees (2004: p 6-7) mentioned that there are many strands in HRD that involve personal development for a current job or situation; development in or for new work settings; activities through which individual and organizational goals may be reconciled; and developmental leading to a better life for individuals, organizations and wider communities. To enable individuals to perform jobs, there are learning strategies, training and development which have key competencies such as focus on identifying, assuring, and helping develop, through planned learning. Learning is essential in leading towards continuous professional development (CPD) for training and development. One of the principles of CPD that will enable a person to maximize own learning and contribute to others is by developing ones act in tune with their values (values-based) or to act more along the lines that are rewarded in the organization which is in a pragmatic learning.

Henceforth, this article is aimed to develop a theoretical framework for measuring teachers' innovative behaviour with the integration of Stage Model of Innovative Behavior, Bandura's Social

Cognitive Theory and Social Exchange Theory as the stand. In this article there are three key factors (perceived supervisory support, teamwork and humour) that are wrapped up as correlated to the teachers' innovative behaviour.

## REFERENCES

- Amjed, A. & Tirmzi, S. (2016). Effect of humor on employee creativity with moderating role of transformational leadership behavior. *Journal of Economic, Business and Management*, 4(10), 594-598.
- Balkar, B. (2015). The Relationships between Organizational Climate, Innovative Behaviour and Job Performance of Teachers. *International Online Journal of Educational Sciences*, 7(2). <https://doi.org/10.15345/iojes.2015.02.007>
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191-215.
- Binnewies, C., & Gromer, M. (2012). Creativity and innovation at work: The role of work characteristics and personal initiative. *Psicothema*, 24(1), 100-105. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/22269371>
- Blau, P. (1964). Exchange and power in social life. Wiley, 352. <https://doi.org/10.2307/2091154>
- Brandsford, J., Derry, S., Berliner, D., & Hammerness, K. (2005). Theories of learning and their role in teaching. In L. Darling-Hammond & J. Bransford (Eds.), *Preparing teachers for a changing world* (pp. 40-87). San Francisco, CA: Jossey-Bass.
- Cayirdag, N. & Acar, S. (2010). Relationship between styles of humor and divergent thinking. *Procedia - Social and Behavioral Sciences*, 2(2010), 3236-3240.
- Dubetz, T. A., Barreto, J.C., Deiros, D., Kakareka, J., Brown, D. W., & Ewald, C. (2008). Multiple Pedagogical Reforms Implemented in a University Science Class to Address Diverse Learning Styles. [Experimental Research]. *Journal of College Science Teaching*, 38(2), 39-43.
- Eteokleous, N. (2008). Evaluating computer technology integration in a centralized school system. *Computers & Education*, 51, 669-686. doi:10.1016/j.compedu.2007.07.004
- Farr, J. & Ford, C. (1990). Individual innovation. In: West, M.A. & J.L. Farr (1990), *Innovation and creativity at work: Psychological and organisational Strategies*. Chichester: John Wiley, 63-80.
- Fullan, M. (2007). *The new meaning of educational change* (4th ed.) New York, NY: Teachers College Press.
- Hoegl M. and Gemuenden H.G. (2001). Teamwork quality and the success of innovative projects: A theoretical concept and empirical evidence. *Organization Science*. 12(4): 435-449.
- Hong, J. S., Hong, J. C., ChanLin, L. J., Chang, S. H., & Chu, H. C. (2005). Creative teachers and creative teaching strategies. *International Journal of Consumer Studies*, 29(4), 352-358. <https://doi.org/10.1111/j.1470-6431.2005.00445.x>
- Janssen O. (2000). Job demands, perceptions of effort-reward fairness and innovative work behaviour. *Journal of Occupational and Organizational Psychology*. 73: 287-302.
- Janssen O. (2003). Innovative behaviour and job involvement at the price of conflict and less satisfactory relations with co-workers. *Journal of Occupational and Organizational Psychology*. 76: 347-364.
- Jong J.D.J. and Hartog D.N. (2007). How leaders influence employees innovative behavior. *European Journal of Innovation Management*. 10(1): 41-64.
- Kanter, R.M. (1988). Three tiers for innovation research. *Communication Research*. 15: (509-523).
- Kimonen, E., & Nevalainen, R. (2005). Active learning in the process of educational change. *Teaching and Teacher Education*, 21, 623-635. doi:10.1016/j.tate.2005.05.003
- Konermann, J. (2012). *Teachers' work engagement: A deeper understanding of the role of job and personal resources in relationship to work engagement, its antecedents, and its outcomes*. Enschede, The Netherlands: Universiteit Twente. <https://doi.org/10.3990/1.9789036533027>
- Loogma, K., Kruusvall, J., & Ümarik, M. (2012). E-learning as innovation: Exploring innovativeness of the VET teachers' community in Estonia. *Computers & Education*, 58, 808-817. doi:10.1016/j.compedu.2011.10.005
- Malaysia : Tenth Malaysia Plan 2011-2015. Speech by the Prime Minister in the Dewan Rakyat,

- tabled on 10<sup>th</sup> June 2010. Retrieved 26<sup>th</sup> November, 2010, from <http://www.pmo.gov.my/>
- Messmann, G., Mulder, R. H., & Gruber, H. (2010). Relations between vocational teachers' characteristics of professionalism and their innovative work behaviour. *Empirical Research in Vocational Education and Training*, 2, 21–40.
- Messmann, G., & Mulder, R. H. (2011). Innovative Work Behaviour in Vocational Colleges: Understanding How and Why Innovations Are Developed. *Vocations and Learning*, 4(1), 63–84. <https://doi.org/10.1007/s12186-010-9049-y>
- Meyer, Kylie (2014) Making meaning in mathematics problem solving using the Reciprocal Teaching approach. *Literacy Learning: The Middle Years*, 22(2), pp. 7-14.
- Organisation for Economic Cooperation and Development. (2005). *Teachers matter: Attracting, developing, and retaining effective teachers*. Paris, France: Author.
- Pham, H.N.H. (2014). The use of humour in EFL teaching: A case study of Vietnamese university teachers' and students' perceptions and practices. A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy, Faculty of Arts and Design, University of Canberra, Australia.
- Pelan Induk Pembangunan Pendidikan (PIPP) 2006-2010 (RMK-9): 'Merintis Pembaharuan – Satu Misi Nasional).
- Pundt, A. (2015). The relationship between humorous leadership and innovative behavior. *Journal of Managerial Psychology*, 30(8), 878-893.
- Promsri, C. (2017). Relationship between the Use of Humor Styles and Innovative Behavior of Executives in a Real Estate Company. *International Journal of Academic Research in Business and Social Sciences* 2017, Vol. 7, No. 9. doi: 10.6007/ijarbss/v7-i9/3330
- Rhee, J., Park, T. and Lee, D.H. (2010) Drivers of Innovativeness and Performance for Innovative SMEs in South Korea: Mediation of Learning Orientation. *Technovation*, 30, 65-75. <http://dx.doi.org/10.1016/j.technovation.2009.04.008>
- Romero, E. J., & Cruthirds. K. W. (2006). The use of humor in the workplace. *Academy of Management Perspectives*, 20(2), 58-69.
- Runhaar, P., Bednall, T., Sanders, K. & Yang, H. (2016). Promoting VET teachers' innovative behaviour: exploring the roles of task interdependence learning goal orientation and occupational self-efficacy, *Journal of Vocational Education & Training*, 68:4, 436-452, DOI: 10.1080/13636820.2016.1231215
- Scott, S. G., & Bruce, R. A. (1994). Determinants of innovative behaviour: a path model of individual innovation in the workplace. *Academy of Management Journal*, 37(3), 580–607. <https://doi.org/10.2307/256701>
- Searle, M. S. (1991). Propositions for testing social exchange theory in the context of ceasing leisure participation. *Leisure Sciences*, 13(4), 279–294. <https://doi.org/10.1080/01490409109513145>
- Serdyukov, P. (2017). Innovation in education: what works, what doesn't, and what to do about it? *Journal of Research in Innovative Teaching & Learning*, Vol. 10 Issue: 1, pp.4-33, <https://doi.org/10.1108/JRIT-10-2016-0007>
- Shalley, C.E., Zhou, J. and Oldham, G.R. (2004) The Effects of Personal and Contextual Characteristics on Creativity: Where Should We Go from Here? *Journal of Management*, 30, 933-958. <http://dx.doi.org/10.1016/j.jm.2004.06.007>
- Shalley, C.E., Zhou, J. and Oldham, G.R. (2004) The Effects of Personal and Contextual Characteristics on Creativity: Where Should We Go from Here? *Journal of Management*, 30, 933-958. <http://dx.doi.org/10.1016/j.jm.2004.06.007>
- Stott K. and Walker A. (1999). Extending teamwork in schools. *Team Performance Management*. 5(2): 50-59.
- Tang, Y. (2008). The relationship between use of humor by leaders and R&D employee innovative behavior: Evidence from Taiwan. *Asia Pacific Management Review*, 13(3), 635-653.
- Thurlings M., Evers A.T. and Vermuelen M. (2014). Toward a Model of Explaining Teacher's Innovative Behaviour: A Literature Review. *Review of Educational Research*. 20 (10)

## A Systematic Literature Review on the Competencies for Public Services

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### ABSTRACT

*Competency is a combination of skills and knowledge, which is associated with job success and life achievement. Competency reconstructed into many different terms such as hard competency, soft competency, desk competency, generic competency, managerial competency and others. All the terms have different definitions and functions. Misapplication of the wrong or focusing on inadequate competency will lead to a negative outcome, which is often seen to occur in public services organizations. This systematic literature review aims to address the above issue by proposing a structured competency framework, which can be applied in public services organizations. The database from the Emerald, Wiley, Sage and Elsevier was reviewed using the systematic literature review of empirical studies on the public services' competencies practiced with the PRISMA Statement methodology (Preferred Reporting Items for Systematic reviews and Meta-Analyses). The systematic literature review was performed using 19 related studies (six from the United States, five from Europe, four from Australia, two from Canada, one from Thailand and Pakistan respectively). The systematic literature review is reconstructed by applying the above findings into the following public services organizations' competencies, (i) operational competency, (ii) managerial competency and (iii) career competency. Operational competency is the competence of the public servants in performing their daily tasks effectively and efficiently. Operational competency is the combination of job competency and support competency. Managerial competency consists of leadership and organizational competencies. Career competencies is a behavioral competency towards career development and career management. These three competencies are contributing significantly to public organizations and public servants' career success. The systematic literature review also showed that there is no fixed operational competency, as it varies according to organization, function, environment, culture and people. Operational competency must be reviewed timely. Whilst, managerial competencies, as proposed in this study, can be applied in majority of the public managers around the world. Lastly, the systematic literature review also suggested that career competencies should be practiced and equipped by the public servants to keep up with the changes in the environment and society.*

**KEYWORDS:** Competencies, operational competencies, managerial competencies, career competencies, public services

## 1.0 INTRODUCTION

Competency is a combination of skills and knowledge used to achieve an impact or outcome within an organizational context (OECD, 2017), it's the main factor contributing towards the success of an organization (Bagdadli & Gianecchini, 2018). An organization that employed employees with low competencies will lead to a negative outcome. These examples include an infection preventionist who lack of the right competencies failed to detect an infectious disease has led to an outbreak (Heather, Hackbarth, Russell, & Denise, 2018), and health workers with poor communication competencies resulting in workplace conflict, job stress and stakeholders' dissatisfaction (Wright, 2011). An employee's quality called competency is a decisive factor to deliver a successful operation in any organization (Beheshtifar & Zare, 2013). Therefore, competency of the employees recognized and identified as the factor which affects the organization success.

The term competency came from McClelland (1973) when he introduced a new concept, where competencies are the component or variable associated with job success and achievement in life. Competencies have then been reconstructed to soft and hard competencies (Shah & Prakash, 2018), technical-functional and general managerial competencies (Kim, 2005), organizational competencies (Aitken & Treuer, 2014), core competencies (Chan, 2006), managerial competencies (Bucur, 2013), whilst

Spencer and Spencer (1993) classified competencies as motivation, traits, self-concept, knowledge, and skills. All these terms have different definitions and functions. Misapplication of the wrong or inadequate competencies will likely lead to negative consequences (Wooten, 2008) and this problem is often seen to occur in public organizations (OECD, 2017).

Amongst the competencies stated above, job competency is one of the competencies widely used and emphasized by the majority of an organization. Job competency is job related competencies, where the competencies are applied to focus on daily work tasks. Norm believed that job competency is important in ensuring that all employees are equipped with the right skills and knowledge to deliver their daily desk effectively (Brown, George, & Mehaffey-kultgen, 2018; Kwakye et al., 2015). However, organizations seldom review the competencies timely despite rapid technological advancements and environmental changes (Lindsay & Stuart, 1997) has led to employees incompetently performing their daily tasks. An employee needs the right skill and competency to keep up with the changes (OECD, 2017), adapt and transform timely to be able to strive for an organization's success (Chen, Svetlana, & Paul, 2014).

Unfortunately, in reality including public service are comfortable with their current practices (competencies framework) and not willing to change (Gassert, 2008). The majority of the public servants are only focusing on their identified job competencies and work following the standard operating procedures in the job description ("fail meja"). They seldom take the initiative to learn more than their identified competencies (Azmi, 2010). While public organization organized training based on job competencies might be failed to enhance public servants' current needed competencies. As a result, trainings conducted but producing incompetent public servants who are unable to meet their stakeholders' expectation due to the unprecedented complexity in societies, which has inevitably become more pluralistic and demanding more than ever (Fourie & Poggenpoel, 2017; Ho, Foo, & Baki, 2019; OECD, 2017). This in line with OECD (2017) comments, which public organizations are unable to keep up with the ongoing and current rapid changes seen in our society (OECD, 2017). Therefore, there is a need for human resource department to review, analyze and implant the right competencies (De Vos & Soens, 2008) to produce competent public servants who can contribute significantly towards the organizations' goals.

However, it may be challenging to identify the right and suitable group of competencies that should be applied or enhanced by the public servants. There are many types of competencies with varying definitions and which should a public servant solely focus. Shall it be just job competencies, or be specific competencies according to a specific task or job position requirement (Bagdadli & Gianecchini, 2018)? It is a debatable question if the human resource department should focus on strengthening an employee's job competencies, or leadership competencies (Kwakye et al., 2015), or also develop other support competencies could enhance the public services' performance which eventually leads to an employee's career and organizational success. Support competencies such as communication competencies, writing competencies, multicultural competencies, career competencies (Dam, Schipper, & Runhaar, 2010) or any other competencies. Even though there were lot of new competencies introduced timely but public services still focusing the preset competencies framework which believe job and leadership competencies are critical factors in delivering daily operational work effectively (Pratama et al., 2015; Mckevitt et al., 2012), as a result service provided remained stagnant or getting worse (World Bank Group, 2019).

Therefore, a systematic study on public servants' competencies is required to propose a structured competency framework that could be applied to public organizations and potentially lead to organizational success. The findings of this study are grouped according to varying themes and elements, which forms a basis to be referred to in the process of developing a competency framework for a public servant.

## 2.0 METHODOLOGY

A systematic review involves the approach of systematic identifying, selecting and critically appraising the study as shown in Table 1. The selected study analyzed and outcome allows the author to claim of rigor in their research which can be justified, allowing another researcher to identify research gaps and needed direction for future research (Azril, Shaffril, Eric, & Farid, 2018). This systematic review is conducted to answer the three main research questions as follows (i) what is the general term of competencies used in public service? (ii) what types of competencies practiced in public service? (iii) what is the competencies framework that should be proposed to the public service?

The review was conducted by following the PRISMA Statement guideline. PRISMA is developed to assess the benefits and harms of a healthcare intervention (Liberati et al., 2009) but it's also utilized by

the environment management field (Sierra-Correa & Cantera Kintz, 2015), education (Barbosa & Pereira, 2015) and human resource matter (Baakeel, 2019; Gile, Buljac-samardzic, & Klundert, 2018). PRISMA can ensure the transparent and complete reporting of systematic reviews which (i) define clear research questions that permit systematic research, (ii) identify inclusion and exclusion criteria and (iii) examine larger database of scientific literature in a defined time. This review was performed on studies searched under the well renowned electronic academic databases - Emerald, Wiley, Sage and Elsevier (Ali, 2016). Well renowned electronic academic study is more appropriate for Human Resource Matter (Marler & Boudreau, 2017) in order to retrieve high-quality source of evidence (published and peer-reviewed articles) to answer the key questions. The review process was performed in July 2018. The first phase was to identify the keywords used in the search process (Azril et al., 2018). This review utilized a search strategy that is based on the inclusion criteria to be used in electronic database searching. This review took the following essential concepts of the inclusion criteria to develop the search string: competencies, public organization and public servants. We considered the combination of these three concepts to be specific enough to include all available studies, regardless of the study design.

Relying on previous studies and thesaurus, we utilized keywords that are similar and related to competency to maximize our data gathering results. This is our search strategy as recommended by the PRISMA Statement guidelines. The search limited the inquiry based on the keywords “public organization” OR “public service” OR “public servant” and “competence” OR “competency” OR “competencies”. The date of the last search was 20 August 2018.

At this stage, 234 selected articles were found based on the keywords of the articles’ titles. Our study identified 4 duplicated publication and were subsequently removed from our search. After a selective screening on the title, 118 articles were removed and rejected due to either irrelevant content, unfulfilled inclusion criteria or unavailability of the full text. The second stage was to screen through the abstract. At this stage, 36 out of 112 articles with eligible abstracts were removed. The third stage was to review the eligibility of the articles, where the full articles were accessed. After a detailed screening, 57 out of 76 articles were excluded as these articles’ contents did not focus on public services competencies or were not empirical articles. The last stage of screening shortlisted a total of 19 articles which were used for the analysis. The full process flow used to shortlist the 19 articles is shown in the flow diagram illustrated in Figure 1.

#### Inclusion criteria

- (i) journal article, conference proceeding and verbatim
- (ii) study done in public services
- (iii) English
- (iv) Publication within 1993-2019

#### Exclusion

- (i) book and chapter in the book

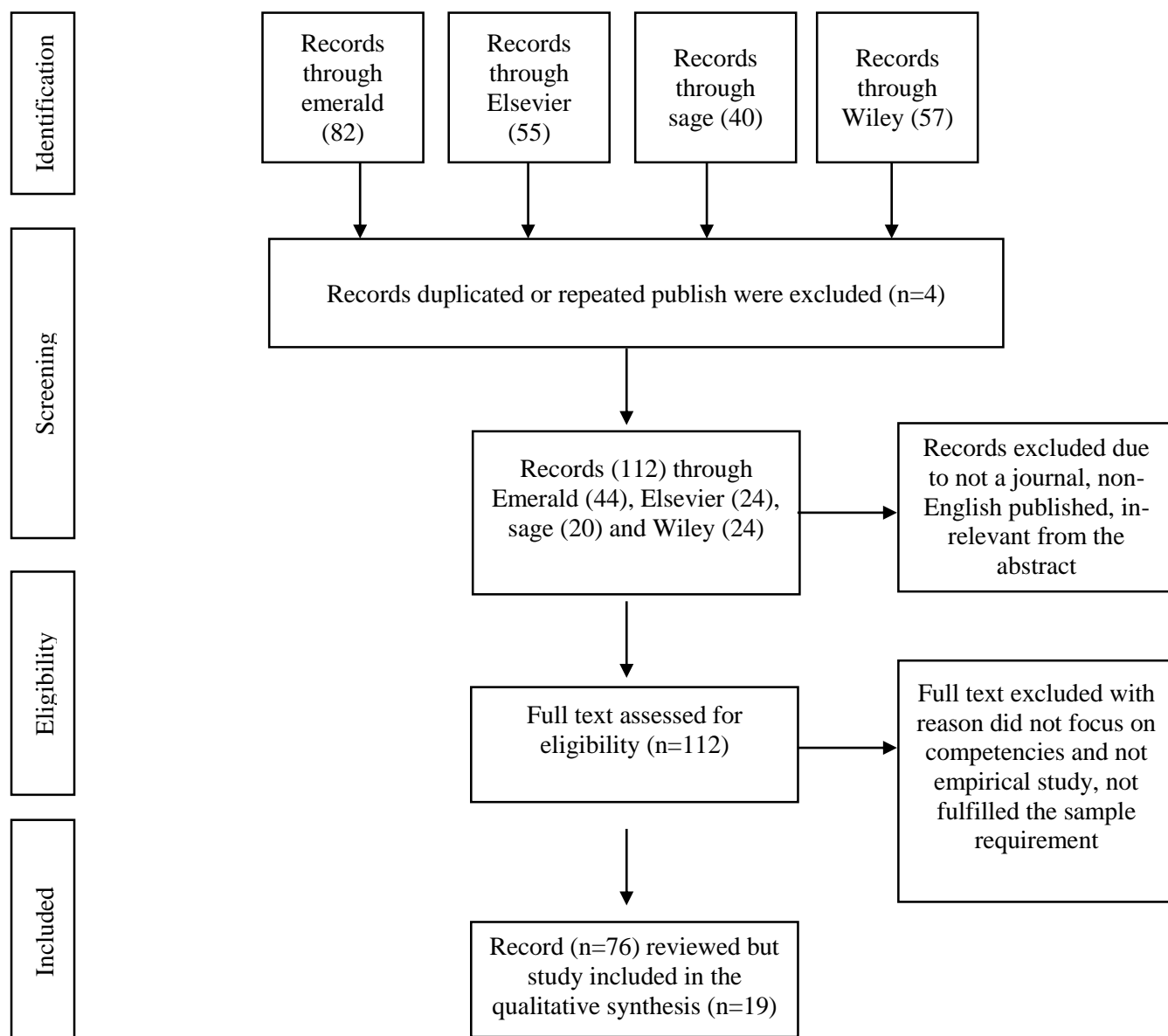


Figure 1: The systematic review flow diagram of the study

Table 1: The finding of the systematic review

No	Author	Year	Country	SD	Area	Organization Competencie s/ Core competencies	Job Competencie s	Support Competencie s	Managerial Competencie s/Leadership	Behavioral Competencie s
1	(Chan, 2006)	2006	Canada	QL	librarian		/	/		
2	(Corcoran & Tormey, 2010)	2010	Ireland	QT	Lecturer			/		
3	(Dam, Schipper, & Runhaar, 2010)	2010	Dutch	QT	Teacher			/		
4	(Krongdai Unhasuta RN, Marylou, & Kathy, 2010)	2010	Thailand	QT	Nurse (hospital - emergency)	/	/			
5	(Sabella, Poynton, & Isaacs, 2010)	2010	US	QT	school counselors		/			
6	(Wright, 2011)	2011	US	QT	Healthcare workers		/			
7	(Mckevitt et al., 2012)	2012	UK & Ireland	MX	procurement	/				
8	(Ahsan, 2013)	2013	Australia & NZ	QT	project management	/	/			
9	(Lima et al., 2013)	2013	Australia	QT	Nurse		/			
10	(Aitken & Treuer, 2014)	2014	Australia	QL	health sector manager	/ Practice knowledge			/	
11	(Chen, Svetlana, & Paul, 2014)	2014	Netherland	QT	Public University					/
12	(Kwakye et al., 2015)	2015	US	QT	Surgeon Doctor	/		/		
13	(Dusi, Rodorigo, & Andus, 2016)	2016	Italy	QL	Teacher			/		
14	(Getha-taylor, Blackmar, & Borry, 2016)	2016	US	QL	Public Manager		/			
15	(Hussain, 2016)	2016	Pakistan	QT	Librarian		/			
16	(Sean, Darling, & Barton, 2016)	2016	Canada	QT	Public Manager				/	



No	Author	Year	Country	SD	Area	Organization Competencie s/ Core competencies	Job Competencie s	Support Competencie s	Managerial Competencie s/Leadership	Behavioral Competencie s
17	(Carley Blixt, 2017)	2017	Australia	MX	project management	/	/	/		
18	(Heather, Hackbarth, Russell, & Denise, 2018)	2018	US	QT	Infection prevention professoion	/				
19	(Kathryn et al., 2018)	2018	US	QL	Nurse		/	/	/	

\*sd- study design

\*Quantitative–qt, Qualitative – ql, Mixed-MX

\*Public - pb, private - pr

### 3.0 FINDINGS AND DISCUSSION

Nineteen shortlisted studies (Table 1) were reviewed. Out of these nineteen studies, six were from United States, five from Europe, four from Australia, two from Canada, and one from Thailand and Pakistan respectively. Eighteen selected articles were published between years 2006 to 2018 and only one (5%) article published before 2010. All the article selected is published within 1993 – 2018 which the career literature has conceptualized “new” career models centered on individuals' proactivity (Bagdadli & Gianecchini, 2018; D. T. Hall, 1996; S. Hall & Kelly, 2009).

The purpose of the systematic review is to produce a synthetic description of the existing study and analyze the content which is related to the public services' competencies. The systematic review reveals five main competencies been applying by the public services, namely (i) organization competency (Chan, 2006), (ii) leadership competency (Brown et al., 2018), (iii) support competency (Shah & Prakash, 2018), (iv) job competency (Kwakye et al., 2015) and (v) career competency (Akkermans, Schaufeli, Brenninkmeijer, & Blonk, 2013). The found literature showed that these competencies are positively associated with job success and achievement in life which is in line with McClelland (1973) concept (McClelland, 1973).

#### (i) Organizational competency

Organizational competency is the core competency required for all employees which is determined by the organization. It emphasizes on client-centered focus and is mainly directed to the entire organization while not referring to a particular job or specific competency (Bucur, 2013; Chan, 2006). Organization competency focuses on the organization's vision, mission, objective and organization's success (Aitken & Treuer, 2014; Brown et al., 2018; Bucur, 2013; Chan, 2006)

There were seven studies that discussed about organizational competency (three studies from medical sector, one from procurement, two from project management and one from public health). These reviews found that similar sectors seem to practice similar organizational competencies. Take project management and medical sectors for example; project management's organization competencies focused on client oriented alignment competencies and project planning & management competencies (Ahsan, 2013; Carley Blixt, 2017), while medical sector focused on team and organization management competencies, medical technical knowledge competencies, communication competencies and patient care competencies (Aitken & Treuer, 2014; Krongdai Unhasuta RN, Marylou, & Kathy, 2010; Kwakye et al., 2015).

Organizational competency is the key attribute required for organizational success in their respective specific field which contains core or common element across varying job levels and function in

the organization which controls the internal and external factors (Prahalad & Hamel, 1990) to meet the societies' demand and keep up with the pace of changes.

(ii) Leadership competency

Leadership competency is the competency which should be equipped by the management roles (executive director, non-executive director, manager of significant resource and manager) when leading, motivating and rewarding their employees for their contributions to the organization and fostering trust among the organization's members during difficult times. A leader in the organization will contribute their ideas and demand their subordinates to meet the organization's goals. Good organizational competency and leadership competency will lead to a successful service integration in an organization. (Aitken & Treuer, 2014; Brown et al., 2018; Parker-gore, 1996)

Three studies were found discussing about leadership competency (Aitken & Treuer, 2014; Kathryn et al., 2018; Sean, Darling, & Barton, 2016). Studies showed that public leadership competency is driven by environments exhibiting more complex and unresolvable problems, and the need to respond to conflicting public opinions. Leadership competency also includes managing competing interests competency, managing the political environment competency, communicating in a political environment competency, interpersonal motivational skills competency, adding value to clients competency, and impact assessment in decision-making competency (Sean et al., 2016).

(ii) Job competency

9 out of the selected 19 studies discussed about job competency. Job competency is considered the most frequently discussed competency, which is widely used and emphasized by majority of the organization including public services (Kwakye et al., 2015). Job competency is also known as technical competency, desk competency, clinical competency, functional competency and generic competency, which defines a person's ability and necessary skills (Kwakye et al., 2015) required to perform a certain activity on their desk. Employees with a good job competency should exhibit good job performance quality, skills and ability to perform their jobs competently (Skorková, 2016) to meet the demand of their organization (McKevitt et al., 2012).

Public services believe that public servants should equip themselves with the appropriate and suitable job competencies to deliver their daily tasks effectively (Kwakye et al., 2015) (Brown et al., 2018). This review also found that job competencies were unable to be generalized, as it is different for every job even for those with similar job description. This finding is in line with OECD's (2017) that job competencies for a public servant is different from country to country as the job competencies are directly related to the society and stakeholders they serve (OECD, 2017).

For example, nurses at United States defined job competencies for general nurse as (i) management skills, (ii) documentation, (iii) clinical assessment skill, (iv) patient presentation, (v) clinical decision making and (vi) clinical competence (Kathryn et al., 2018), while nurses at Australia defined them as (i) helping role, (ii) coaching, (iii) diagnostic functions, (iv) managing situations, (v) therapeutic intervention, (vi) ensuring quality and (vii) work role (Lima et al., 2013), as compared to nurses at Thailand who defined them as (i) cooperation (ii) decision making, (iii) leadership, (iv) problem solving, (v) teamwork and (vi) technical knowledge (Krongdai Unhasuta RN et al., 2010).

This review also found that western countries always practice job competencies with support competencies. Western countries believe that job effectiveness can be enhanced by also practicing support competencies in their competencies framework.

(iii) Support competency

There are seven studies out of the 19 articles discussed about support competency. Support competency, also known as soft competency (Shah & Prakash, 2018), is the competency used to support the job competencies which should be equipped by an employee due to different environment and needs. Past research have shown that support competency is significantly contributing towards organizational success (Ahsan, 2013; Carley Blixt, 2017; Chan, 2006; Charles & Richard, 2015; Corcoran & Tormey,

2010; Dam et al., 2010; Dusi, Rodorigo, & Andus, 2016; Getha-taylor, Blackmar, & Borry, 2016; Hussain, 2016; Okun, Guerin, & Schulte, 2016; Rice, 2007)

Support competency is used as a support tool for employees to perform their daily tasks. It is not an organization's preset competencies but it is inter-related with job competencies (Chan, 2006; Hussain, 2016). The seven studies which discussed about support competency were all from western countries. This might be due to the difference in culture that are practiced between the east and the west. Majority of the eastern countries recognize a clear hierarchical and authoritative distance in their respective organizations, where each individual has their defined role to perform without needing to justify their higher up's decisions and steers (Hofstede Insights, 2019). Employees in eastern countries are expected to be told what to do, following their respective job descriptions while employees in western countries seems to have lower recognition of their hierarchical distance in their organization. As such, they try their best to maintain equality in the organization and be proactive in their career (Ebba, 2015), where they try to develop additional competencies to support themselves throughout their career.

Quoting a very good example of such difference in this systematic review is the way of teaching between the east and the west. Teachers in the western countries apply additional support competencies besides teaching competency to enhance their teaching effectiveness, while this is less seen among the eastern country teachers. To illustrate this further, teachers in the west practice student-centered roles where they act as facilitators to promote students' active participation in group work that fosters communication skills, higher order thinking and collaboration skills. On the other hand, teachers in the east is often the purveyor of authoritarian information in the classroom where teachers lead nearly all the classroom activities and do most of the talking to passive students who learn through repetitive practice and rote memorization (Fang & Gopinathan, 2009). It can be seen from this example that teachers in the east primarily focused only in their teaching competencies according to the subject that they are teaching.

There are three support competencies that were found to be significant in enhancing teaching performance. Support competency for a lecturer at Ireland defines it to comprise emotional competence (Corcoran & Tormey, 2010), while entrepreneurship competency is found to be important for a teacher in Netherlands (Dam et al., 2010) and intercultural competency for a teacher in Italy (Dusi et al., 2016).

Emotional competency which employs the MSCEIT emotional intelligence (EI) skills test granted a more prominent position in areas such as the study of moral or pro-social behavior. A teacher who has a high emotional competence (caring, intelligent and passionate) will be able to meet the challenges of a demanding profession and produce high quality students (Corcoran & Tormey, 2010).

Entrepreneurship competency is important for a teacher to recognize opportunities and utilize their resources which allows them to take advantages of and acting upon these opportunities to produce an effective teaching which derives from (i) entrepreneurial knowledge, (ii) career adaptability, (iii) occupational self-efficacy, (iv) creative thinking, (v) networking skill, (vi) teamwork skill (Dam et al., 2010).

Intercultural competency can be applied appropriately and effectively for the management of interaction between people who, to some degree or another, represent different or divergent affective, cognitive, and behavioral orientations to the world. Intercultural competency can be divided into (i) relational-communicative skills, (ii) cognitive-educational intercultural competencies and (iii) pertaining specifically to primary school teaching. Intercultural competency is important for teachers who teach in multi-cultural school to promote learning and integration among students with different migrant background, ultimately improving their students' learning results (Dusi et al., 2016).

That aside, technological competency, multicultural competency, collaborative competency, accountability competency and communication competency were also found to be important support competencies (Getha-taylor et al., 2016; Rice, 2007; Sabella, Poynton, & Isaacs, 2010; Wright, 2011)

#### (iv) Career competencies

Career competencies is a behavioral competency towards career development and career management (Akkermans et al., 2013). Throughout the review, only one study career competencies applied in public services. Chen, Svetlana, & Paul (2014) found the career competencies enhances public university employees' motivation and assisted them to identity their required knowledge and skills, and their inter- and intra-organizational networks which could significantly contribute towards their success (Chen et al., 2014)

This systematic review shows that public services mainly focused on organizational competency, job competency and support competency, as 17 out of the 19 articles reviewed included these three competencies in their studies. Among the three, public services believe that job competency is the most important competency (Paradnikė, Endriulaitienė, & Bandzeviciene, 2016; Salleh, Sulaiman, Latiff, & Ahmad, 2016) and train public servants through career intervention based on organizational and job competencies solely instead of enhancing the employee's career competency which is contributing toward career success (Akkermans, Veerle, Wilmar, & Roland, 2015).

There were only one study in the review employed career competencies which in public university staff (Chen et al., 2014) even though it is not a new concept. Career competencies is the competencies central to career self-management and development where employees bring information, knowledge and attitude from their experience (working and learning) into work and contribute towards their required job competencies (Arthur, Claman, & Defillippi, 1995; Chen et al., 2014; Defillippi & Arthur, 1994; Kuijpers, Schyns, & Scheerens, 2006). Career competencies has always been misinterpreted as job competency or core competency but researchers have distinguished career competencies as a different competency which focuses on (i) self-reflection on motivation and value, (ii) awareness of the presence on the importance of networking and communication and (iii) way in taking action proactively on the career related process.

Chartered Institute of Personnel and Development (CIPD) commented that public services mainly focused on their organization's readily existing competency framework without keeping them up-to-date with the rapidly-changing environment (Chartered Institute of Personnel and Development, 2019). OECD (2017) commented that public servants were unable to meet the public's expectation (OECD, 2017) and the efficiency of the public services has stagnated (World Bank Group, 2019). Therefore the current practice of focusing on the readily existing competencies framework which was believed to be able to enhance public servants' effectiveness is questionable. Public services should review their current competencies framework and update them with new and appropriate competencies that suit the current environment and demand for the long run.

#### 4.0 PROPOSED COMPETENCIES FRAMEWORK

This systematic review proposes the competencies framework below for public services. This framework comprises three main competencies, namely (i) Operational Competency (Job Competency and Support Competency), (ii) Managerial Competency (Leadership Competency and Organizational Competency) and (iii) Behavioral towards Career Self-Management Competency (Career Competencies) (Figure 2).

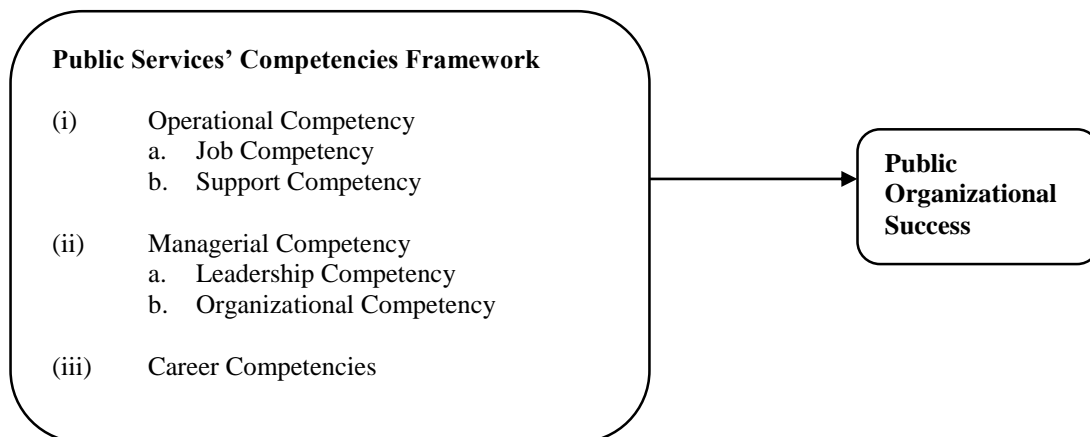


Figure 2: Public Services' Competencies Framework

##### (i) Operational competency

Operational competency is the competency required by public servants to perform their daily tasks effectively and efficiently. Operational competency is the combination of job competency and support

competency. Job competency is the skillset and knowledge required to deliver their daily desk or operational work effectively (Brown et al., 2018; Kwakye et al., 2015). This is different for each job position as it is directly related to the society and stakeholders that they serve. Support competency, also known as soft competency, although not compulsory, is highly important as it serves as a support tool to supplement their respective job competency. A public servant with the right operational competency (job and support competencies) will be able to enhance the delivery of their work effectively and eventually lead to career and organizational success. As support competency is interrelated with career competency, employees should navigate and discuss their current needs with their supervisor and co-develop and define their suitable support competencies required in their respective jobs.

#### (ii) Managerial Competency is needed by Public Services Managers

The public services managers must equip themselves with the right managerial competencies. Managerial competency is the combination of leadership competency and organizational competency. Leadership competency is management skills required by the management when leading, motivating and rewarding their employees to deliver the organizational goals and foster trust among the organization's members. Managerial competency should include (i) organization management competency, (ii) internal alignment competency, (iii) organizational focused competency, (iv) awareness of change competency, (v) continuous innovation competency and (vi) leadership competency. Organizational competency is a set of core competency for all employees or class of employees (e.g. managers) which is in line with the organization's vision, mission, values and key strategies determined by a leader with client-centered focus (Chan, 2006). Since leadership competency is interrelated with organizational competency, a great public service manager with good leadership skills and organizational competency will be able to lead their public servants in the right path and steer them to achieve organizational success.

#### (iii) Career competencies

Finally, the systematic review has found that career competencies is a new approach for public sector and should be applied in public services to produce high performance public servants who proactive in their career development (Akkermans, Brenninkmeijer, Schaufeli, & Blonk, 2014; Arthur et al., 1995; Defillippi & Arthur, 1994; Srikanth, 2012). Developing high performance staff will eventually lead to organizational success. This provides a positive contrast towards the current practice of public servants who only focus on their existing job competencies without keeping up with environmental and society changes (OECD, 2017), where they should be encouraged to review and update their competencies within their organization to grow organically, adapting and suiting the demand of the rapidly evolving environment.

## **5.0 CONCLUSION**

This systematic review proposed a public services' competencies framework as shown in Figure 2 above, which comprises of (i) operational competency, (ii) managerial competency and (iii) career competency. This review further proposed public servants to equip themselves with the abovementioned competencies in order to strive for an organization's success. There are no fix operational competencies which can be adopted and used by everyone (Carley Blixt, 2017) as the function of the organization is different in every setup, environment, culture and employee. Therefore, public services manager with good managerial competencies should equip the public servants with the right and specific competencies which are in line with the organization's direction and lead them to deliver organizational goals and strive for organizational success (Brown et al., 2018). Finally, public servants must also equip themselves with career competency to keep themselves and their organization's competencies framework up-to-date to suit the needs of the rapidly evolving demand from the environment and society.

## **REFERENCE**

Ahsan, K. (2013). Recruiting Project Managers : Competencies and Recruitment, (October).  
<https://doi.org/10.1002/pmj>

- Aitken, K., & Treuer, K. Von. (2014). Organisational and leadership competencies for successful service integration. *Leadership in Health Services*. <https://doi.org/10.1108/LHS-08-2012-0028>
- Akkermans, J., Brenninkmeijer, V., Schaufeli, W. B., & Blonk, R. W. B. (2014). IT'S ALL ABOUT CAREERSKILLS: EFFECTIVENESS OF A CAREER DEVELOPMENT INTERVENTION FOR YOUNG EMPLOYEES. <https://doi.org/10.1002/hrm>
- Akkermans, J., Schaufeli, W. B., Brenninkmeijer, V., & Blonk, R. W. B. (2013). The role of career competencies in the Job Demands - Resources model. *Journal of Vocational Behavior*, 83(3), 356–366. <https://doi.org/10.1016/j.jvb.2013.06.011>
- Akkermans, J., Veerle, B., Wilmar, B. S., & Roland, W. B. B. (2015). It's All about Career Skills: Effectiveness of A Career Development Intervention for Young Employees. *Human Resource Management*, 54. <https://doi.org/10.1002/hrm>
- Ali, A. A. (2016). Strategic planning – organizational performance relationship : Perspectives of previous studies and literature review Strategic planning – organizational performance relationship : Perspectives of previous studies and literature review. *International Journal of Healthcare Management ISSN: 9700*(September). <https://doi.org/10.1179/2047971915Y.0000000017>
- Arthur, M. B., Claman, P. H., & Defillippi, R. J. (1995). Intelligent enterprise , intelligent careers, 9(4).
- Azmi, I. A. G. (2010). Competency-based human resource practices in Malaysian public sector organizations. *African Journal of Business Management*, 4(2), 235–241.
- Azril, H., Shaffril, M., Eric, S., & Farid, S. (2018). Science of the Total Environment A systematic review on Asian ' s farmers ' adaptation practices towards climate change. *Science of the Total Environment*, 644, 683–695. <https://doi.org/10.1016/j.scitotenv.2018.06.349>
- Baakeel, O. A. (2019). Using a Systematic Review to Explain the Association between Training and Job Performance. *Indian Journal of Science and Technology*, 12(May). <https://doi.org/10.17485/ijst/2019/v12i18/144592>
- Bagdadli, S., & Gianecchini, M. (2018). Organizational career management practices and objective career success : A systematic review and framework. *Human Resource Management Review*, (July), 0–1. <https://doi.org/10.1016/j.hrmr.2018.08.001>
- Barbosa, L. R., & Pereira, L. L. (2015). Nursing Education in a Curriculum Oriented of Competence : A Systematic Review. *Creative Education*, (October), 1860–1866.
- Beheshtifar, M., & Zare, E. (2013). Relationship between competencies career and organizational success. *Interdisciplinary Journal of Contemporary Research in Bussiness*, 5(1), 834–843.
- Brown, L., George, B., & Mehaffey-kultgen, C. (2018). The development of a competency model and its implementation in a power utility cooperative : an action research study. *Industrial and Commercial Training*. <https://doi.org/10.1108/ICT-11-2017-0087>
- Bucur, I. (2013). Managerial Core Competencies as Predictors of Managerial Performance , on Different Levels of Management. *Procedia - Social and Behavioral Sciences*, 78, 365–369. <https://doi.org/10.1016/j.sbspro.2013.04.312>
- Carley Blixt, K. K. (2017). Challenges and competencies for project management in the Australian Public Service.
- Chan, D. C. (2006). Core competencies and performance management in Canadian public libraries. <https://doi.org/10.1108/01435120610652897>
- Charles, S. S., & Richard, D. N. (2015). Computer Competencies for Marketing: Are Universities Doing Their Job ? *Journal of Marketing Education*.
- Chartered Institute of Personnel and Development. (2019). Competence and competency frameworks.
- Chen, F., Svetlana, N. K., & Paul, G. W. J. (2014). Effects of employees' career competencies development on their organizations: Does satisfaction matter? *Career Development International*, 19(6), 700–717. <https://doi.org/10.1108/EL-01-2014-0022>
- Corcoran, R., & Tormey, R. (2010). Teacher education , emotional competencies and development education, 2, 2448–2457. <https://doi.org/10.1016/j.sbspro.2010.03.352>
- Dam, K. Van, Schipper, M., & Runhaar, P. (2010). Developing a competency-based framework for teachers ' entrepreneurial behaviour. *Teaching and Teacher Education*, 26(4), 965–971. <https://doi.org/10.1016/j.tate.2009.10.038>
- De Vos, A., & Soens, N. (2008). Protean attitude and career success: The mediating role of self-management. *Journal of Vocational Behavior*, 73(3), 449–456. <https://doi.org/10.1016/j.jvb.2008.08.007>

- Defillippi, R. J., & Arthur, M. B. (1994). The Boundaryless Career : A Competency-Based. *Journal of Organizational Behavior*, 15(4), 307–324.
- Dusi, P., Rodorigo, M., & Andus, P. (2016). What Intercultural Competencies do Italian Primary Teachers Need ?, 217, 576–584. <https://doi.org/10.1016/j.sbspro.2016.02.051>
- Ebba, O. (2015). Comparison between Western and Middle Eastern Cultures : Research on Why American Expatriates Struggle in the Middle East Ebba Ourfali. *Otago Management Graduate Review*, 13(2015).
- Fang, Y., & Gopinathan, S. (2009). Teachers and Teaching in Eastern and Western Schools: A Critical Review of Cross-Cultural Comparative Studies. *International Handbook of Research on Teachers and Teaching*, 557–572.
- Fourie, D., & Poggenpoel, W. (2017). Public sector inefficiencies: Are we addressing the root causes? *South African Journal of Accounting Research*, 31(3), 169–180. <https://doi.org/10.1080/10291954.2016.1160197>
- Gassert, C. A. (2008). Technology and Informatics Competencies. *Nursing Clinics of NA*, 43(4), 507–521. <https://doi.org/10.1016/j.cnur.2008.06.005>
- Getha-taylor, H., Blackmar, J., & Borry, E. L. (2016). Are Competencies Universal or Situational ? A State-Level Investigation of Collaborative Competencies Exploring the Competency Debate : Situational or. <https://doi.org/10.1177/0734371X15624132>
- Gile, P. P., Buljac-samardzic, M., & Klundert, J. Van De. (2018). The effect of human resource management on performance in hospitals in Sub-Saharan Africa : a systematic literature review. *Human Resources for Health*, 1–21.
- Hall, D. T. (1996). Careers Protean Century of the. *Academy of Management Executive*, 10(4), 8–16. <https://doi.org/10.5465/AME.1996.314531>
- Hall, S., & Kelly, M. E. (2009). Social Cognitive Career Theory as Applied to the School-To-Work Transition.
- Heather, B., Hackbarth, D., Russell, N. O., & Denise, M. (2018). Creation of a competency-based professional development program steps in the process. *AJIC: American Journal of Infection Control*. <https://doi.org/10.1016/j.ajic.2018.04.225>
- Ho, H. H., Foo, C. N., & Baki, R. (2019). Training but no Training. *International Journal of Academic Research in Business & Social Sciences*, 9(7), 77–87. <https://doi.org/10.6007/IJARBSS/v9-i7/6093>
- Hofstede Insights. (2019). Hofstede Insights. Retrieved from <https://www.hofstede-insights.com/>
- Hussain, M. U. F. A. U. M. I. A. (2016). Current and required competencies of university librarians in Pakistan.
- Kathryn, A., Rugen, W., Harada, N., Harrington, F., Mary, A., Bowen, J. L., & Haven, W. (2018). Nurse practitioner residents' perceptions of competency development during a year-long immersion in veterans affairs primary care: A qualitative study. *Nursing Outlook*. <https://doi.org/10.1016/j.outlook.2018.05.002>
- Kim, N. (2005). Organizational interventions influencing employee career development preferred by different career success orientations. *International Journal of Training and Development*, 9(1), 47–61. <https://doi.org/10.1111/j.1360-3736.2005.00221.x>
- Krongdai Unhasuta RN, E., Marylou, V. R., & Kathy, M. (2010). Research plan for developing trauma core competencies for nurses in Thailand PhD Program Director ) b. *International Emergency Nursing*, 18(1), 3–7. <https://doi.org/10.1016/j.ienj.2009.08.001>
- Kuijpers, M. A. C. T., Schyns, B., & Scheerens, J. (2006). Career Competencies for Career Success Career Competencies for Career Success. *Career Development Quarterly*, 55(2), 168–178.
- Kwakye, G., Chen, X. P., Havens, J. M., Irani, J. L., Yule, S., & Smink, D. S. (2015). An Apprenticeship Rotation Teaches Chief Residents Nontechnical Skills and ACGME. *Journal of Surgical Education*, (617), 1–7. <https://doi.org/10.1016/j.jsurg.2015.07.003>
- Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., & John, P. A. (2009). & reporting The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions : explanation and elaboration. *The BMJ*. <https://doi.org/10.1136/bmj.b2700>
- Lima, S., Dip, G., Nsg, A., Cert, P. N., Cert, C., Jordan, H. L., ... Hons, B. N. (2013). How competent are they ? Graduate nurses self-assessment of competence at the start. *Collegian*, 1–6.

- <https://doi.org/10.1016/j.colegn.2013.09.001>
- Lindsay, P. R., & Stuart, R. (1997). Reconstruing competence. *Journal of European Industrial Training*, 326–332.
- Marler, J. H., & Boudreau, J. W. (2017). An evidence-based review of HR Analytics An evidence-based review of HR Analytics. *The International Journal of Human Resource Management*, 5192, 1–24. <https://doi.org/10.1080/09585192.2016.1244699>
- McClelland, D. C. (1973). Testing for Competence Rather Than for " Intelligence ", (January).
- McKevitt, D., Davis, P., Woldring, R., Smith, K., Flynn, A., & Mcevoy, E. (2012). An exploration of management competencies in public sector procurement.
- OECD. (2017). *Skills for a High Performing Civil Service*. <https://doi.org/10.1787/9789264280724-en>
- Okun, A. H., Guerin, R. J., & Schulte, P. A. (2016). Foundational workplace safety and health competencies for the emerging workforce. *Journal of Safety Research*. <https://doi.org/10.1016/j.jsr.2016.09.004>
- Paradnikė, K., Endriulaitienė, A., & Bandzeviciene, R. (2016). Career self-management resources in contemporary career frameworks : a literature review. *Management of Organizations: Systematic Research*, 1142(76), 91–106. <https://doi.org/http://dx.doi.org/10.7220/MOSR.2335.8750.2016.76.6>
- Parker-gore, S. (1996). Perception is reality : using 360-degree appraisal against behavioural competences to effect organizational change and improve management performance. *Career Development International*, 24–27.
- Prahalad, C. K., & Hamel, G. (1990). The Core Competence of the Corporation.
- Pratama, A. P., Ghazali, A., Putranto, N. A. R., Iswari, K. R., Wisesa, A., & Febriansyah, H. (2015). Civil Servants' Competence in Indonesia: Suggestions for Future Research in the Context of Business. *Procedia - Social and Behavioral Sciences*, 169(August 2014), 371–377. <https://doi.org/10.1016/j.sbspro.2015.01.322>
- Rice, M. F. (2007). A post-modern cultural competency framework for public administration and public service delivery. <https://doi.org/10.1108/09513550710823524>
- Sabella, R. A., Poynton, T. A., & Isaacs, M. L. (2010). Computers in Human Behavior School counselors perceived importance of counseling technology competencies. *Computers in Human Behavior*, 26(4), 609–617. <https://doi.org/10.1016/j.chb.2009.12.014>
- Salleh, K. M., Sulaiman, N. L., Latiff, A. A., & Ahmad, M. (2016). the Development of Human Resource Competency Model in Public Sector Organizations in Malaysia, 14(14), 10221–10234.
- Sean, D., Darling, J., & Barton, C. (2016). Underlying values and competencies of public and private sector managers Introduction. *Asian Education and Development Studies*.
- Shah, M. N., & Prakash, A. (2018). Developing generic competencies for infrastructure managers in India. <https://doi.org/10.1108/IJMPB-03-2017-0030>
- Sierra-Correa, P. C., & Cantera Kintz, J. R. (2015). Ecosystem-based adaptation for improving coastal planning for sea-level rise: A systematic review for mangrove coasts. *Marine Policy*, 51, 385–393. <https://doi.org/10.1016/j.marpol.2014.09.013>
- Skorková, Z. (2016). Competency Models in Public Sector. *Procedia - Social and Behavioral Sciences*, 230(May), 226–234. <https://doi.org/10.1016/j.sbspro.2016.09.029>
- Srikanth, A. P. B. (2012). Self Efficacy & Career Self Management : Moderating Role of Proactive Personality Published by : Shri Ram Centre for Industrial Relations and Human Resources Stable URL : <http://www.jstor.org/stable/23509838> Self Efficacy & Career Self Management : Modera, 48(2), 274–289.
- Wooten, L. P. (2008). Linking Crisis Management and Leadership Competencies: The Role of Human Resource Development. *Advances in Developing Human Resources*, 10(3). <https://doi.org/10.1177/1523422308316450>
- World Bank Group. (2019). *ECONOMIC MONITOR Re-energizing the Public Service*.
- Wright, K. B. (2011). A Communication Competence Approach to Healthcare Worker Conflict , Job Stress , Job Burnout , and Job Satisfaction, 33(2), 7–14.



## Inculcating Knowledge Sharing Behavior in Organization: Roles of Intrinsic and Extrinsic Motivations

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### ABSTRACT

*Despite the importance of knowledge sharing practice, studies indicated that some employees are still reluctant to share knowledge with other colleagues. This have led to inefficiency and fragmentation of services and at times to the extent of service breakdown in organization. Past studies revealed that the major enablers of employee's knowledge sharing behavior were associated to motivational factors. However, few researches have examined the effect of motivational factors especially intrinsic motivation factors on knowledge sharing. Thus, this study aims to investigate the influence of motivational factors (intrinsic and extrinsic) on employees' knowledge sharing behavior. Surveys were designed based on established instruments and yielded 231 response from administrators of various managerial grades. The study found that intrinsic motivation factor is an important factor to encourage the development of affective commitment. Administrators who are motivated and committed were most likely to influence knowledge sharing behavior in organization. The conclusion and implications for research and practice are highlighted.*

**KEYWORDS:** Knowledge sharing behavior, intrinsic motivation, extrinsic motivation, organizational commitment

### 1.0 INTRODUCTION

Knowledge sharing has been associated with positive outcomes in the past such as increase in organization innovation capability (Kumar & Che Rose, 2012), better productivity (Yusof, Ismail, Ahmad & Yusof, 2012), increase in organization effectiveness (Yang, 2007), team task performances (Cheng & Li, 2011), as well as individual performances (van Woerkom & Sanders, 2010). Overall, knowledge sharing enhances organizational performance and therefore, it plays a major role in organizational development, a core component of HRD. Besides that, knowledge sharing also is able to improve the quality of public service delivery system and enhance the productivity level of public service employees (Yusof et al., 2012). As such, knowledge sharing is regarded as one of the building blocks for organization's success (Witherspoon, Bergner, Cockrell & Stone, 2013).

In line with that, firms and organizations are taking various measures to inculcate KSB among their employees and some of the initiatives taken are such as establishing communities of practice, investing on knowledge networks, rewards for knowledge sharing, linkage with performance appraisal and organizing training (Ling, Sandhu & Jain, 2009). However, fostering knowledge sharing in organization is not an easy task (Yusof et al., 2012; Kuo, 2013). Despite all the incredible benefits and importance of knowledge sharing, studies have proven that some employees are still reluctant to share knowledge with other colleagues (Ling et al., 2009; Welschen, Todorova & Mills, 2012). Employee's reluctance to share knowledge can lead to inefficiency and fragmentation of services and at times to the extent of service breakdown in organization (Konstantinou & Fincham, 2010).

Therefore, organizations have to undergo a lot of challenges in order to foster KSB among employees especially when comes to dealing with employees' retirement, transfer or resignation which could lead to knowledge being lost (Amayah, 2013).

An analysis of relevant literatures from the past divulged that the major enablers of employee's KSB were associated to soft factors such as the intrinsic motivational factors (Kumar & Che Rose, 2012; Olatokun & Nwafor, 2012, Akhavan, Rahimi & Mehralian, 2013). Among the intrinsic motivational factors, knowledge self-efficacy and enjoyment in helping others have been consistently highlighted as the pertinent determinants of employee's KSB (Olatokun & Nwafor, 2012). Nevertheless, extrinsic motivational factor

such as reciprocity was also found as an important determinant of knowledge sharing attitude in the past (Tohidinia & Mosakhani, 2010).

Literature also provides evidences that only few researches have examined empirically the effect of motivational factors (Olatokun & Nwafor, 2012) especially intrinsic motivation factors on knowledge sharing (Welschen et al., 2012; Akhavan et al., 2013). Intrinsic motivational factor and knowledge sharing is still an emerging area which need to be investigated further in other context (Welschen et al., 2012). Thus, this study aims to investigate the influence of both intrinsic and extrinsic factors on employees' knowledge sharing behaviour (KSB).

The present research may shed lights on the appropriate human resource development (HRD) intervention programmes or strategies development to promote as well as foster KSB in organizations. Top management of public service organizations can get insights by examining the factors, their relative importance as well as how interdependent the factors are. The paper starts with the background issues related to knowledge sharing behaviors in organizations, followed by a theoretical explanation, methods, findings and discussion. Finally, the study's conclusion and implication for practice and research are put forth.

## **2.0 THEORIZING KNOWLEDGE SHARING BEHAVIOR**

This study employed The General Workplace Commitment Model (Meyer & Herscovitch, 2001) as the underpinning theory. The commitment model unveils employees' discretionary target-relevant behavior/on- the-job behavior at workplace via commitment. The 'target' identified in this study is the organization; therefore, committed employees shall exhibit discretionary organizational-relevant behavior / on-the-job behavior which ultimately translate into better individual's and organization's performance.

The model consists of three dimensions of workplace commitment namely affective, normative and continuance. The major factor that differentiates these three main dimensions is the mind-set of the employee. The mind-set can be defined as a frame of mind or psychological state that compels an individual toward a course of action.

The model further stresses that any personal/situational variable that can contribute to the likelihood that an individual will (a) become involved in a course of action for example intrinsic motivations, (b) recognise the value-relevance of association with an entity or pursuit of a course of action; and (c) derive his/her identity from association with an entity, or from working toward an objective will contribute to the development of affective commitment. As such, for affective commitment, three main bases were found to generate mind-set of 'desire' i.e. (a) identity-relevance; (b) shared values; and (c) personal involvement.

Continuance commitment is characterized by the perception that it would be costly to discontinue a course of action or to discontinue from an entity. Two bases were highlighted to generate the perceived cost associated to discontinuing the bound to a course of action or an entity, namely (a) investments; and (b) lack of alternatives (no choice). Finally, normative commitment is characterized by the mind-set that one has the obligation to pursue a course of action relevance to the target. Three main bases were found to generate a sense of obligation toward a target namely (a) internalization of norms; (b) benefits and reciprocity norm; and (c) psychological contract obligation.

The model was used to logically deduce the intrinsic and extrinsic motivations that influence organizational commitment (mediator) and organizational commitment gives direction to KSB. Employees who are committed toward their organization, will also work toward accomplishing the organizational goal and engage in organizational related behaviors (Meyer & Herscovitch, 2001) such as KSB. Meyer and Herscovitch (2001) indicated that intrinsic motivational factors will get employees personally involved in a course of action. In this present study, three intrinsic motivational factors which were identified based on previous works, namely knowledge self-efficacy, enjoyment in helping others and public service motivation (PSM).

For knowledge self-efficacy, when public service administrators have confidence in their ability to provide knowledge to other colleagues, there is a strong likelihood that their personal involvement will increase toward KSB. Having high confidence in their competency level to produce desired effects in an organization will lead to higher affective commitment toward organization (Meyer & Allen, 1991), which then will influence organizational related extra-role behaviors such as KSB.

Next, enjoyment in helping others was identified as another intrinsic motivational factor that will also give rise to affective commitment toward organization and finally lead to organizational related extra-

role behavior such as KSB. Public service administrators who derive pleasure through helping other co-members with their knowledge needs will personally get more involved in extra-role behaviors such as KSB. The higher the public service administrators enjoy helping others in the organization, the higher will be their personal involvement and subsequently, the higher will be their affective commitment toward the organization. Finally, affective organizational commitment will lead them to engage in KSB (Meyer & Herscovitch, 2001).

Finally, the third intrinsic motivational factor, PSM, can be explained using two bases of affective organizational commitment i.e. personal involvement as well as shared values. Firstly, public service administrators who are inclined to motives grounded in public service, to serve the community and public interest will get personally more involved in related behaviors. Next, in this study's context (i.e., public service organizations), the key role of public sector organizations is to provide service to the public at large. As public service administrators who are motivated to serve the public share similar values with the public sector organizations, as such, there is higher likelihood that they will be highly committed affectively toward the public sector organization and this will lead to organizational related extra role behaviors such as KSB.

Next, Meyer and Herscovitch (2001) stressed that when an employee is the recipient of some kind of benefits, therefore, it becomes an obligation to reciprocate through some sort of organizational related behavior. The model further posits that benefits and reciprocity norm are some form of bases to develop normative organizational commitment which in turn, gives direction to organizational related behaviors. In the present study, recognition practices and reciprocity are included as two extrinsic motivational factors which will influence KSB via organizational (normative) commitment. Reciprocity is defined in the present study as the degree to which public service administrator feels a personal obligation to contribute knowledge and expects others to help (Cho, Chen & Chung, 2010). Public service administrators who have received knowledge from other co-workers will be more obliged to reciprocate the action by contributing knowledge to other members of the organization. As members of organization are part of the organization itself, as such, they will be normatively committed toward the organization and will engage in KSB.

Recognition practices on the other hand, refer to the non-monetary rewards the public service administrator receives due to quality knowledge sharing efforts. It is non-monetary reward because it helps to enhance employee's reputation in the organization. As such, it can be regarded as a form of benefit received by employees due to their positive sharing behavior. 'Benefit' is one of the bases in Meyer and Herscovitch's (2001) model which generates mind-set of obligation and leads to employee's normative commitment towards the organization. Based on the above discussion, we illustrate the conceptual framework as in Figure 1.

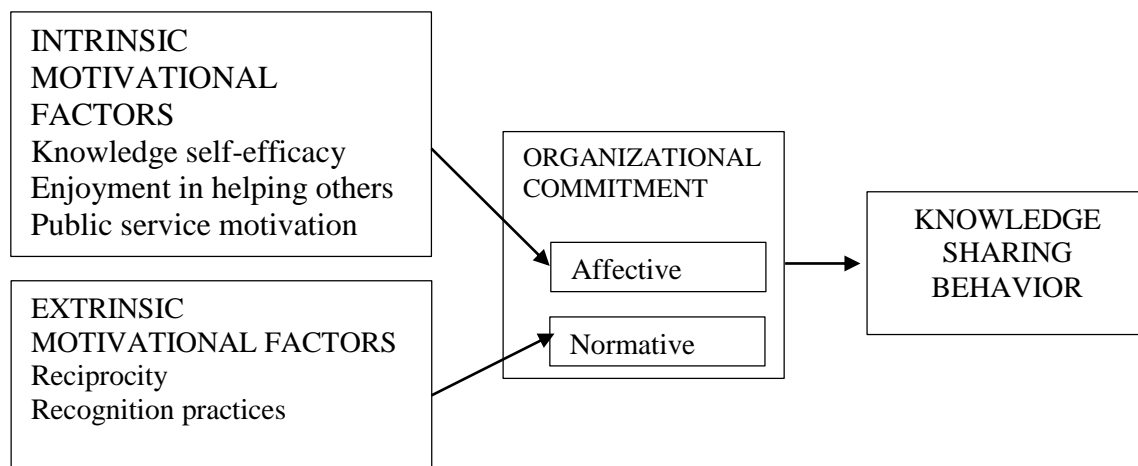


Figure 1: The conceptual framework

### 3.0 METHODS

This correlational cross-sectional study employed samples from the Malaysian public service administrators from 12 Malaysian Ministries. They were chosen using two-stage of simple random sampling. We adopted and adapted all instruments used in this study; and they were tested to be valid and

reliable. Upon the research consent, we distributed 432 questionnaires which were equally divided to the 12 organizations (with 36 questionnaires for each of the organizations). All questionnaires were self-administered and overall data collection yielded a response rate of 62.7%, i.e. 271 respondents completed the questionnaires. However, upon checking on the usability of the questionnaires, only 231 questionnaires were preceded for PLS-SEM data analyses.

Prior to descriptive analysis and structural model analysis, the measurement model analysis was carried out to ensure reliability and validity of the instruments. The measurement model revealed that the composite reliability of all the constructs were in the range of 0.882 and 0.979 indicating high internal consistency reliability. The AVEs for all the reflective constructs were within the recommended cut-off point i.e. above 0.5 indicating convergent validity was met in this study. The discriminant validity was tested using cross loadings and the latest HTMT procedure and it was also found that the constructs did not violate the discriminant validity criteria.

### 3.1 Respondents' Demographic Profile

The respondents of the study consists of 60% female and 40% male ( $n=231$ ). Their age ranged between 25 and 59 years with mean age of 37.99 ( $SD=6.224$ ). Majority (65.8%) of the respondents had a Bachelor's degree as their highest qualification and this is followed by Master's degree (30.7%) and PhD degree (3.5%). With regards to employment grades, more than half of the respondents (67.5%) were from the middle management level, and 32.5% of the respondents were from the high management level. The tenure ranged from 7 to 12 years of working experience with a mean of 11.81 ( $SD =5.921$ ).

## 4.0 FINDINGS AND DISCUSSION

The significance of the path coefficients was examined using either  $t$ -values or  $p$ -values and findings were reported in Table 1. As for mediation testing, the findings are presented in Table 2.

Table 1: Direct Relationships Testing

Relationship	Std Beta	Std Error	$p$ -value	$t$ -value	R <sup>2</sup>	$f^2$ (effect size)
KSE→AC	0.412	0.062	0.000	6.621	0.717	0.261 (m~l)
EHO→AC	0.123	0.056	0.028	2.207		0.026 (s)
PSM→AC	0.261	0.061	0.000	4.299		0.118 (m)
R→NC	-0.100	0.062	0.109	1.606	0.604	NS
RP→NC	0.076	0.055	0.169	1.378		NS

### 4.1 The Influence of Intrinsic Motivational Factors on Affective Organizational Commitment

Table 1 shows that the three intrinsic motivational factors {knowledge self-efficacy ( $\beta=.412$ ,  $p<.01$ ); enjoyment in helping others ( $\beta=.123$ ,  $p<.05$ ); PSM ( $\beta=.261$ ,  $p<.01$ )} have positively influenced the affective commitment of the employees. It was also found that knowledge self-efficacy reported the highest value of standardised beta (0.412) and highest  $t$ -value (6.621).

Consistent with past studies, the findings of this study found that intrinsic motivational factors (i.e., knowledge self-efficacy, enjoyment in helping others and PSM) had influenced administrators' affective commitment towards the organization. According to Meyer and Herscovitch (2001), the development of affective commitment is generated by the mind-set of desire. When organization serves as a platform to fulfil employees' desires, employees' affective commitment will be developed. Given this situation, intrinsic motivational factors act as stimulators to employees' personal involvement in a course of action such as knowledge sharing.

### 4.2 The Influence of Extrinsic Motivational Factors on Normative Organizational Commitment

Surprisingly, we found that both extrinsic motivational factors {i.e., reciprocity ( $\beta=-.100$ ,  $p>.05$ ) and recognition practices ( $\beta=.076$ ,  $p>.05$ )} did not significantly influence the normative commitment of the administrators. Reciprocity in this study was measured based on what was expected (i.e., the degree to which public service administrator feels a personal obligation to contribute knowledge and expects others

to help). This could explain the insignificant influence of reciprocity on normative commitment of administrators. Hence, whether it really translates into real actions is doubtful and could not be assured.

As for the recognition practices, Gar (2012) found that recognition practices are sometimes not effective and thus, fail to bring changes in organization. Therefore, in implementing or defining recognition practices, pertinent issues such as how the recognition occurs, what is recognised, what the recognition provides, recognition types and recognition environment should be considered by the organization.

#### **4.3 The influence of affective and normative organizational commitment on KSB**

The findings of the study revealed that both affective ( $\beta=.416$ ,  $p<.01$ ) and normative commitment ( $\beta=.222$ ,  $p<.01$ ) were positively influenced KSB of the administrators. We found that affective commitment was dominant compared to normative commitment in influencing factor on KSB ( $\beta=.416$ ;  $t$ -values=5.251).

In agreement with the above findings, Howell's (2012) study involving 302 engineers and engineering administrators revealed that both affective and normative commitments were significant and positively influenced the respondents' KSB. Similarly, the affective commitment was found to have higher influence as compared with normative commitment. We believed that emotional attachment towards an organization is more pertinent than employee's sense of obligations towards the organization to promote KSB among employees. As such, KSB is most likely to occur especially when employees are more emotionally attached to the organization.

#### **4.4 The mediation effect of affective organizational commitment on the relationships between intrinsic motivational factors and KSB**

To test for the mediation effect in PLS-SEM, we employed Preacher and Hayes's (2008) method of bootstrapping the indirect effect. In this study, affective commitment was found to mediate the individual relationships between the intrinsic motivational factors (knowledge self-efficacy, enjoyment in helping others and PSM) and KSB among the administrators. The bootstrapping analysis shows that the indirect effect was significant for all relationships i.e. knowledge self-efficacy-affective commitment-KSB ( $\beta=0.171$ ;  $t$ -value=4.072), enjoyment in helping others-affective commitment-KSB ( $\beta=0.051$ ;  $t$ -value=1.986), PSM-affective commitment-KSB ( $\beta=0.109$ ;  $t$ -value=3.292) and also the indirect effects did not straddle a '0' in between the UL and LL when bootstrapped at 95% indicating a mediation effect. In this study, the highest  $t$  value was reported for the relationships between knowledge self-efficacy-affective commitment-KSB ( $\beta=0.171$ ;  $t$ -value=4.072) indicating stronger mediation effect. Table 2 presents the results of the mediation test.

The findings of the study indicated that affective commitment towards the organization need to be developed prior to inculcating KSB among the administrators. Affective commitment towards the organization plays a pivotal role in enabling high knowledge self-efficacious administrators to engage in KSB. Administrators with high knowledge self-efficacy will be highly affectionate towards the organization since organization serve as a platform to permit administrators to acquire knowledge. Affection towards organization will then, influence the administrators to engage in organizational discretionary behavior such as KSB. In addition, the results show that the presence of affective commitment is a must for the intrinsically motivated administrators to engage in KSB within the organizations.

Likewise, enjoyment in helping others reflects administrators' affection towards the organization. Organization is seen as a platform to fulfil their desire by helping others with their knowledge needs. With regards to PSM, administrators' motivation to serve public are emotionally attached to the organizations, have identification with the organization and highly involve in the organization.

#### **4.5 The Mediation Effect of Normative Organizational Commitment on the Relationships between Extrinsic Motivational Factors and KSB**

We found that normative commitment did not mediate the individual relationships between the extrinsic motivational factors (reciprocity and recognition practices) and administrators' KSB. The bootstrapping analysis shows that the indirect effects were insignificant for both relationships in this study i.e. reciprocity normative commitment-KSB ( $\beta=0.022$ ;  $t$ -value=1.323) and recognition practices normative commitment-KSB ( $\beta=0.017$ ;  $t$ -value=1.161). Further, the indirect effects did straddle a '0' in between the UL and LL when bootstrapped at 95% indicating insignificant mediation effect.

We explain these insignificant findings based on measurement used, whereby reciprocity was measured based on what the administrators' expected and not actual reciprocity. With regards to the

recognition practices, Noviello (2000) argued that sometimes recognition practices in organizations fail to bring changes because it was not carried out immediately. Time is a factor to ensure effective implementation of recognition practices.

Table 2: Mediation Testing

Relationship	Std Beta	Std Error	t-value	LL (2.5%)	UL (97.5%)
KSE→AC→KSB	0.171	0.042	4.072	0.095	0.250
EHO→AC→KSB	0.051	0.027	1.986	0.005	0.109
PSM→AC→KSB	0.109	0.033	3.292	0.051	0.179
R→NC→KSB	-0.022	0.017	1.323	-0.050	0.080
RP→NC→KSB	0.017	0.014	1.161	-0.010	0.046

## 5.0 CONCLUSION AND IMPLICATIONS FOR PRACTICE AND RESEARCH

This study aims to examine the influence of both intrinsic and extrinsic factors on employees' KSB. We conclude that intrinsic motivational factors are key factors in inculcating administrators' KSB. In addition, intrinsic motivational factors trigger administrators' affective commitment, and influence them to engage in KSB.

Based on the findings of the study, HRD personnel may use intrinsic motivational factors as selection criterion in recruiting the right ADS officers into the civil service as their recruitment strategies. Besides, intrinsically motivated employees also are highly self-efficacious, and these employees could be established by screening, selecting and recruiting candidates who are proactive, have high self-esteem as well as high cognitive aptitude (Olatokun & Nwafor, 2012).

The study limits itself in its causality inferences and generalizations. Hence future studies can replicate this study and utilize different approach such as longitudinal study in order to obtain more comprehensive findings. It is also recommended to consider other cohort of samples such as academics, doctors and engineers since these professions are highly dedicated to efficient implementation of KSB in organizations.

## REFERENCES

- Akhavan, P., Rahimi, A., & Mehralian, G. (2013). Developing a model for knowledge sharing in research centers. *The Journal of Information and Knowledge Management Systems*, 43(3), 357–393. doi:10.1108/VINE-06-2012-0020
- Amayah, A. T. (2013). Determinants of knowledge sharing in a public sector organization. *Journal of Knowledge Management*, 17(3), 454–471. doi:10.1108/JKM-11-2012-0369
- Cheng, Z., & Li, C. (2011). Research on relationship between knowledge sharing and team performance in R & D team. In *CCIS 209* (pp. 474–481).
- Cho, H., Chen, M., & Chung, S. (2010). Testing an integrative theoretical model of knowledge-sharing behavior in the context of wikipedia. *Journal of the American Society for Information Science and Technology*, 61(6), 1198– 1212. doi:10.1002/asi
- Gar, S. S. (2012). Making recognition and rewards matter: Five practices to drive better business results. *Bersin & Associates Research Report*, (8), 1, 1–50.
- Howell, D. A. (2012). *A Relationship Study of the Knowledge Sharing Behavior and Organizational Commitment of Engineers*. PhD dissertation. The University of Alabama in Huntsville, United States.
- Kumar, N., & Che Rose, R. (2012). The impact of knowledge sharing and Islamic work ethic on innovation capability. *Cross Cultural Management*, 19(2), 142–165. doi:10.1108/13527601211219847
- Konstantinou, E., & Fincham, R. (2010). Not sharing but trading: Applying a Maussian exchange framework to knowledge management. *Human Relations*, 64(6), 823–842. doi:10.1177/0018726710388676

- Kuo, T. H. (2013). How expected benefit and trust influence knowledge sharing. *Industrial Management & Data Systems*, 113(4), 506–522. doi:10.1108/02635571311322766
- Ling, C. W., Sandhu, M. S., & Jain, K. K. (2009). Knowledge sharing in an American multinational company based in Malaysia. *Journal of Workplace Learning*, 21(2), 125–142. doi:10.1108/13665620910934825
- Meyer, J. P., & Allen, N. J. (1991). A three-component conceptualisation of organisational commitment. *Human Resource Management Review*, 1(1), 61–89.
- Meyer, J. P., & Herscovitch, L. (2001). Commitment in the workplace: Toward a general model. *Human Resource Management Review*, 11(3), 299–326.
- Noviello, R. J. (2000). *Productivity and Employee Recognition Programs: A Program Evaluation in the Aerospace Manufacturing Sector*. PhD dissertation. University of La Verne, California, USA.
- Olatokun, W., & Nwafor, C. I. (2012). The effect of extrinsic and intrinsic motivation on knowledge sharing intentions of civil servants in Ebonyi State, Nigeria. *Information Development*, 28(3), 216–234. doi:10.1177/0266666912438567
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in simple and multiple mediator models. *Behavior Research Methods*, 40, 879–891.
- Tohidinia, Z., & Mosakhani, M. (2010). Knowledge sharing behaviour and its predictors. *Industrial Management & Data Systems*, 110(4), 611–631. doi:10.1108/02635571011039052
- van Woerkom, M., & Sanders, K. (2010). The romance of learning from disagreement. The effect of cohesiveness and disagreement on knowledge sharing behavior and individual performance within teams. *Journal of Business and Psychology*, 25(1), 139–149. doi:10.1007/s10869-009-9136-y
- Welschen, J., Todorova, N., & Mills, A. (2012). An investigation of the impact of intrinsic motivation on organizational knowledge sharing. *International Journal of Knowledge Management*, 8(2), 23–42. doi:10.4018/jkm.2012040102
- Witherspoon, C. L., Bergner, J., Cockrell, C., & Stone, D. N. (2013). Antecedents of organizational knowledge sharing: A meta-analysis and critique. *Journal of Knowledge Management*, 17(2), 250–277. doi:10.1108/13673271311315204
- Yusof, Z. M., Ismail, M. B., Ahmad, K., & Yusof, M. M. (2012). Knowledge sharing in the public sector in Malaysia: A proposed holistic model. *Information Development*, 28(1), 43–54. doi:10.1177/0266666911431475
- Yang, J. (2007). The impact of knowledge sharing on organizational learning and effectiveness. *Journal of Knowledge Management*, 11(2), 83–90. doi:10.1108/13673270710738933

## Quality of Working Life and Career Engagement among Young Cancer Survivors in Malaysia

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### ABSTRACT

*Careers today increasingly require engagement in proactive career behaviors; however, there is a lack of validated measures assessing among young adults cancer survivors in Malaysia. The purpose of this study was to investigate the relationship between quality of work life and career engagement among young adult cancer survivors in Malaysia. A cross sectional study was conducted among 400 young adults cancer survivors in Malaysia, between July 2019 until September 2018 with the young adult cancer survivors aged 18 – 40 years old, Malaysian citizens and having follow-up session at Hospital Kuala Lumpur and National Cancer Institute Malaysia. Qualities of work life and career engagement variables were determined from surveys and validated instruments. Correlation methods were performed to investigate the relationships among the variables. More than half of young adults cancer survivors were female 227 (56.8%) and male 173 (43.3%). They are Malays 292 (73%), Chinese 71 (17.8%) and India 37 (9.3%). The study found that the level of quality of work life ( $M=4.26$ ,  $SD=0.532$ ) and career engagement ( $M=4.23$ ,  $SD=0.607$ ) were high on a scale of 5 among young adult cancer survivors in Malaysia. Statistically significant and positive associations were found between career engagement ( $r = .746$ ,  $p=.000$ ) with the quality of work life among them. Next, the R-squared of 0.557 implies that the career engagement explain about 56% of the variance in the quality of work life. The results of the present study indicate that the career engagement associated with quality of work life. High quality of work life can give a result in better organizational performance. It is likely that tailored interventions targeting on these factors may support greater employment quality for young cancer survivors.*

**KEYWORDS:** cancer survivors, career engagement, young cancer survivors, quality of working life

### 1.0 INTRODUCTION

The number of people living beyond a cancer diagnosis reached nearly 15.5 million in 2014 and is expected to rise to almost 19 million by 2024 (Miller et al., 2016). Malaysia national cancer registry reported 72884 cancer survivors in Malaysia in 2018. A comprehensive survey on all cancer survivors never been reported but study by Pathy et al (2011) among breast cancer survivors between 1990-2007 showed 82.5% still undergoing normal daily living. For cancer survivors of working age, inability to return to work or continue working is one of the late effects that can negatively impact their quality of life (Duijts, Kieffer, van Muijen & van der Beek 2017). However, few studies have addressed the experienced and perception of cancer in work environment, namely their quality of working life (de jong, Tamminga, de Boer & Frings-Dresen, 2016).

### 2.0 BACKGROUND AND CONTEXT OF THE STUDY

According to World Health Organization (WHO) statistics in 2015, the number of cancer patients worldwide has increased significantly in recent years and cancer is one of the second causes of global causes of death. WHO estimated that there were 14.1 million new cases and 8.2 million deaths annually. In Malaysia, 72,884 people have been identified as cancer patients by National Cancer Registry Department, National Cancer Institute of Malaysia in Malaysian Study on Cancer Survival 2018 (MySCan). There were 29,263 (40.2%) males and 43,621 (59.8%) were females. The five highest 5-year relative survivals were in



thyroid (82.3%), prostate (73.0%), corpus uteri (70.6%), female breast (66.8%), and colon (56.8%) cancers. The survivals age ranged between 15 to 44 years old were 21%.

There was a little report about the quality of working life of young cancer survivors. Cancer was further viewed as contributing to lost control over career engagement, career success and work choices, side effects of the treatment will interfere that quality of working life and capabilities, and interpersonal difficulties connecting within and outside of work. Young cancer survivors with more extensive cancer treatment and side effects reported greater work struggles. However, many young cancer survivors continue working throughout the treatment phase, although treatment schedules and side effects sometimes interfered with their career engagement. The systematic review revealed that the cycle of functional ability impacting work productivity on employment is a strong source of distress affecting not only acquiring and maintaining a job but also for the career engagement, financial security, access to healthcare, relationships, and quality of working life for the young cancer survivors (Stone et al., 2017).

Therefore, this study has two fold; 1) to determine the quality of working life of young cancer survivors and; 2) to examine the associations between quality of working life of young cancer survivors and career engagement.

## **2.1 Quality of Working Life**

Quality of working life is defined as an approach to improve work (Ford, 1973); is a way of thinking about people, work and organizations (Nadler & Lawler, 1983); and something different for each of individual based on age, career stage or position in an organization (Kiernan, Knutson, 1990). Therefore, the quality of working life is a commitment of any organisation to work improvement including the creation of more involving, satisfying and effective jobs and work environments for people. For the employee, quality of working life is a satisfaction with a variety of needs through resources, activities and outcomes stemming from participation of needs (Sirgy et al., 2001).

Malaysian Economy in Figures 2016, has reported the Quality of Work Life index, was increasing and decreasing by years in Malaysia. From 2007 to 2010, Quality of Work Life index was decreasing from 132.4 to 119.4, then slightly increased from the year 2011 to 2013 which from 125.7 to 128.6, then decreased from 2012 to 2014 by 125.3 to 114.4 (The Malaysian Economy Figure, 2016). In addition, based on previous studies relating with the quality of work life; assessing quality of working life among Malaysian workers (Sulaiman et al., 2015); quality work life among factory workers in Malaysia (Noor & Abdullah, 2012); The effect of quality of work life programs on quality of life among employees at multinational companies (Narehan et al., 2014); the relationship between the quality of work life of academic staff in universities and how quality of working life affects their performance (Mohammadi, & Karupiah, (2019). Most of them only focused on small group of workers such as in factory workers, employees at companies, academic staff and only covered certain components of quality of working life. This shows that the importance of this study and the need of more research to examine and improve the quality of working life among the employees in Malaysia. However, this study wants to investigate the quality of working life among young adult cancer survivors in Malaysia.

Studies have shown that the majority of cancer survivors are able to continue working. There is, however, a group of cancer survivors who suffer from impaired health as a result of their illness, and this impairment sometimes leads to a decreased ability to work, or even disability. Employment and impaired work ability has most commonly been found to be associated with cancer type, type of treatment, health status, education and physical workload. The few studies that have focused on the effects of psychosocial factors in work life suggest that social support from occupational health services, and workplace accommodations for illness affect cancer survivors' return to work. Therefore, more research is needed on the impact of social factors at work, which seem to play an important role in cancer survivors' ability to continue working.

In this study, quality of working life was assessed with the quality of working life questionnaire specifically for cancer survivors who are employed within an organization or self-employed. There are five dimensions namely; 1) meaning of work, 2) perception of the work situation, 3) atmosphere in the work environment, 4) understanding and recognition in the organisation, and 5) problems due to the health situation (de Jong et al., 2016). Quality of life has been suggested to be significantly poorer among those cancer patients who suffer from treatment-related symptoms (Spelten, et al., 2003). Previous research also mentioned that fatigue level independently predicts how soon a person with cancer is able to return to work.

Therefore, it is likely that treatment-related symptoms have impact on employment and work ability of cancer survivors.

## 2.2 Career engagement

Career engagement was defined as the degree to which somebody is proactively exhibiting different career behaviours in order to enhance the career development (Hirschi, 2014). However, the underlying dominant factors which promote career engagement are still under reported. According to Rogers, Creed and Ian Glendon (2008) they mentioned that personal (e.g., neuroticism, career decision making and self-efficacy) and environmental factors (e.g., perceived career barriers and social support) will affect an individual differences in career engagement. The important issues on career engagement are to explain why some people show higher levels of career engagement than others?

In human resource development, career engagement was based on the result of favourable person-in-context functioning that sees human as active, self-regulating and self-constructing living system (Vondracek, Ferreira, & Santos, 2010). In line with this perspective, in this study, career engagement was assessed with the career engagement scale by Hirschi et al., (2014) and the dimensions namely, care for the development of the career including career planning, career self-exploration environmental career exploration, networking, human capital, skill development and positioning behaviours.

## 2.3 Career engagement and quality of working life

The investigating of experiences and perceptions about quality of working life would be the valued contribution to the existing knowledge on young cancer survivors in career engagement. Past research reports that cancer survivors with specific health and work-related variables are higher at risk of unemployment (Mehnert & Koch, 2013). By exploring the relationship between quality of working life and career engagement, this study might identify the young adult cancer survivors who potentially experience low quality of working life. Thus the significance of this study, could contribute to support the human resource practitioner in helping to develop tailored interventions that aim to improve the return-to-work processes of young adult cancer survivors.

## 2.4 Conceptual Framework

The purpose of this study was to investigate the relationship between quality of working life and career engagement among young cancer survivors in Malaysia.

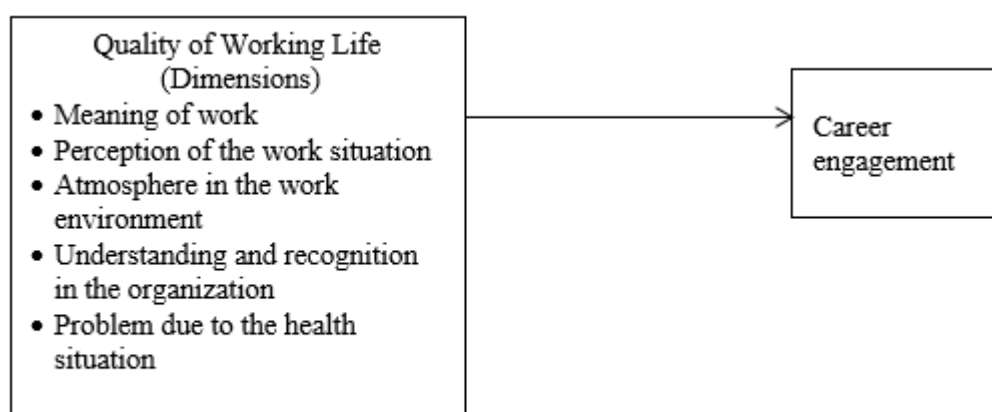


Figure 1: Framework of the study

## 3.0 METHODOLOGY

A cross sectional study was conducted among 400 cancer survivors in Malaysia. The young adult's cancer survivors are defined as aged between 18 – 40 years old. Quality of working life variable was determined from pilot test and validated instruments (de Jong et al., 2016). The respondent in this study was selected using random sampling technique. The respondent were randomly selected from the list of all eligible young cancer survivors which was obtained follow-up session from Hospital Kuala Lumpur and

Malaysian Cancer Institute. The data were collected by employing self-administered questionnaire (i.e., demographics factors, quality of working life, career engagement). Bivariate correlation methods were performed to investigate the relationships among the variables.

### 3.1 Instruments

This study focused on the quality of working life with the constructs; meaning of work, perception of the work situation, atmosphere in the work environment, understanding and recognition in the organization, problem due to the health situation. These constructs was measured using the Quality of Working Life Questionnaire for Cancer Survivors developed by Merel de Jong et al. (2016). Career engagement refers to the extent to which an individual is engaged proactively in various vocational tasks and behaviours to develop his or her career. The instrument from Hirschi, Freund & Herrmann (2014). The items were 'I actively sought to design my professional future', I undertook things to achieve my career goals, I care for my career development, I can develop plans and goals for my future career, I sincerely thought about personal values, interests, abilities, and weaknesses, I can collect information about employers, professional development opportunities, or the job market in my desired area, I can establish or maintain my contacts with people who can help me professionally, I am voluntarily participate in further education, training, or other events to support my career, and I can assume any duties or positions that will help my progress professionally.

## 4.0 FINDINGS

A total of 400 young cancer survivors participated in the study. Their ages ranged from 18 to 40 years, with a mean age of 29.1. A slightly higher percentage of female adolescents (56.8%) participated in this study than males (43.3%). Most of them were Malays (73.0%), followed by Chinese (17.8%) and Indians (9.3%) and. The level of education was PhD (0.5%), Master (31.8%), Diploma (31.5%), Higher Education Certificate of Malaysia (4.8%), Malaysian Certificate of Education (23.5%) and Certificate Low Education (2.9%). Majority of the respondents were degree and diploma holder (64.2%). The demographic profiles of the respondents are shown in Table 1.

Table 1: Demographics of the respondent (n=400)

Demographics	Category	Frequency	Percentage
Gender	Male	173	43.3
	Female	227	56.8
Ethnic	Malay	292	73.0
	Chinese	71	17.8
	Indian	37	9.3
Level of education	PhD	2	.5
	Master	21	5.3
	Bachelor	127	31.8
	Diploma	126	31.5
	Higher School Certificate	19	4.8
	Malaysian Certificate of Education	94	23.5
	Lower Certificate of Education	11	2.9
Age	15-20	50	12.5
	21-25	108	27.0
	26-30	71	17.8
	31-35	51	12.8
	36-40	120	30.0
Mean (Age) = 29.1 ; Standard deviation=7.159			

#### 4.1 Level of quality of working life and career engagement among young adult cancer survivors

Table 2 shows that the respondents displayed a high level of quality of working life ( $M=4.26$ ,  $SD=0.532$ ) and career engagement ( $M=4.23$ ,  $SD=0.607$ ).

Table 2: Level of quality of working life and career engagement among young adult cancer survivors (n=400)

Variables	Mean	Standard deviation
Quality of working life	4.26	.532
Career engagement	4.23	.607

#### 4.2 Bivariate Correlation

The relationships of quality of working life with career engagement level were analysed using the Pearson Product-Moment Correlation. Further, Cohen's (1988) categorization on effect size was used to interpret the magnitude of the correlation between the study variables. Preliminary analyses were performed to ensure that there were no violations of the assumptions of normality and linearity. Table 3 depicts a high and positive correlation between quality of working life with career engagement ( $r = 0.746$ ,  $n = 400$ ,  $p < 0.05$ ). Hence, these results suggested that the high score on the quality of working life would predict a high score on career engagement among young adult cancer survivors. Next, the R-squared of 0.557 implies that the quality of working life (with five dimension - meaning of work, perception of the work situation, atmosphere in the work environment, understanding and recognition in the organization, and problem due to the health situation) explain about 56% of the variance in the career engagement.

Table 3: The relationships of quality of working life with career engagement (n=400)

Relationship between variables	Value r	Significant	Level
Relationship between quality of working life and career engagement	.746	0.000	Strong

#### 5.0 DISCUSSION

This study provides new insights into the career engagement of young cancer survivors. The findings, quality of working life variable were found to be associated with a high career engagement score. High relationship of the quality of working life because of the young cancer survivors has a positive respond in working such as working gives them structure in life, they also think it is good to work, their consider that their work gives them a goal in life and their work is very important. Furthermore, they have the positive perception on the work situation for example, I do my work well, I am self-confident in my work, I am suited to my work, I have control over the work I do and I feel empowered in my work. In addition, the young cancer survivors claim atmosphere in their work environment was very positive conditions. They confessed they have a feeling, which they are taken seriously by people in their working environment, they have good relations and feel value with their colleagues and they feel there is a positive atmosphere in their working environment. Besides, they belief their organizations understanding and recognized them in the organization by mentioned that they are content with the fringe benefits provided by their employer and have a good relation with their immediate supervisor. They also claim that their immediate supervisor understands their health situation and possible health problems.

## 6.0 CONCLUSION AND IMPLICATION

Quality of working life among young cancer survivors depend on the career engagement. It is likely that tailored interventions targeting on these factors may support greater employment quality for young cancer survivors.

**Implication for practice:** This study shows the importance of measuring quality of working life and determining the career engagement among young cancer survivors. Finding of this study can be used as a fundamental research for developing further program to improve quality of working life among young cancer survivors. Also, Malaysia has a big number of younger populations and about 14.6 million aged between 15-39 or 45.4 percent of the population (National Statistic Department, 2018). Based on the findings of this study, the information found regarding the relationship between quality of working life and career engagement could help the employee and employers in planning of career development strategies to improving quality of working life their employee especially the young cancer survivors in Malaysia. Given the importance of employment for cancer survivorship and quality of working life, it is necessary to provide employed cancer survivors with programs to support the return-to-work process, work retention, and other outcomes.

Future research should further explore the relationships among these variables and potentially target benefit finding or other factors promoting quality of working life among young cancer survivors such as the role of care givers and other social support to the quality of working life.

## CONFLICT OF INTEREST

The authors declare that they have no competing interests

## ACKNOWLEDGEMENT

The authors gratefully acknowledge the funding support provided by the Universiti Putra Malaysia (9597500) under the Research Management Centre, Ministry of Education Malaysia (2018–2020).

## REFERENCES

- Cohen, J. 1988. *Statistical power analysis for the behavioral sciences (2nd ed.)*. Hillsdale, NJ: Erlbaum.
- de Jong, M., Tamminga, S. J., de Boer, A. G., & Frings-Dresen, M. H. (2016). Quality of working life of cancer survivors: development of a cancer-specific questionnaire. *Journal of Cancer Survivorship*, 10(2), 394-405.
- Duijts, S. F., Kieffer, J. M., van Muijen, P., & van der Beek, A. J. (2017). Sustained employability and health-related quality of life in cancer survivors up to four years after diagnosis. *Acta Oncologica*, 56(2), 174-182.
- Hirschi, A., Freund, P.A., & Herrmann, A. 2014. The career engagement scale: Development and validation of a measure of proactive career behaviors. *Journal of Career Assessment* 22(4), 575-594. doi:10.1177/1069072713514813
- Ford, R. (1973). Job enrichment lessons from AT and T. *Harvard Business Review* 51(1), 96-106.
- Kiernan, W. E., & Knutson, K. (1990). Quality of work life. *Quality of life: Perspectives and issues*, 101-114.
- Mehnert, A., & Koch, U. (2013). Predictors of employment among cancer survivors after medical rehabilitation-a prospective study. *Scandinavian Journal of Work, Environment & Health*, 39(1), 76-87.
- Miller, K. D., Siegel, R. L., Lin, C. C., Mariotto, A. B., Kramer, J. L., Rowland, J. H., ... & Jemal, A. (2016). Cancer treatment and survivorship statistics, 2016. *CA: A cancer journal for clinicians*, 66(4), 271-289.

- Mohammadi, S., & Karupiah, P. (2019). *Quality of work life and academic staff performance: a comparative study in public and private universities in Malaysia*. *Studies in Higher Education*, 1–15. doi:10.1080/03075079.2019.1652808
- National Statistic Department, 2018. Retrieved on 2 September 2019 from <https://www.dosm.gov.my/v1/index.php?r=column/pdfPrev&id=c1pqTnFjb29HSnNYNUpiTmNWZHArdz09>
- Nadler, D. A., & Lawler, E. E. (1993). Quality of Work Life, Perspective and Direction. *Organisational Dynamics*, II(3) , 20-30.
- Narehan, H., Hairunnisa, M., Norfadzillah, R. A., & Freziamella, L. (2014). The effect of quality of work life (QWL) programs on quality of life (QOL) among employees at multinational companies in Malaysia. *Procedia-Social and Behavioral Sciences*, 112, 24-34.
- Noor, S. M., & Abdullah, M. A. (2012). Quality work life among factory workers in Malaysia. *Procedia-Social and Behavioral Sciences*, 35, 739-745.
- Pathy, N. B., Yip, C. H., Taib, N. A., Hartman, M., Saxena, N., Iau, P., ... & Verkooijen, H. M. (2011). Breast cancer in a multi-ethnic Asian setting: results from the Singapore–Malaysia hospital-based breast cancer registry. *The Breast*, 20, S75-S80.
- Rogers, M. E., Creed, P. A., & Glendon, A. I. (2008). The role of personality in adolescent career planning and exploration: A social cognitive perspective. *Journal of Vocational Behavior*, 73(1), 132-142.
- Sirgy, M. J., Efraty, D., Siegel, P., & Lee, D. J. (2001). A new measure of quality of work life (QWL) based on need satisfaction and spillover theories. *Social indicators research*, 55(3), 241-302.
- Spelten, E. R., Verbeek, J. H. A. M., Uitterhoeve, A. L. J., Ansink, A. C., Van Der Lelie, J., De Reijke, T. M., ... & Sprangers, M. A. G. (2003). Cancer, fatigue and the return of patients to work—a prospective cohort study. *European journal of cancer*, 39(11), 1562-1567.
- Stone, D. S., Ganz, P. A., Pavlish, C., & Robbins, W. A. (2017). Young adult cancer survivors and work: a systematic review. *Journal of Cancer Survivorship*, 11(6), 765-781.
- Sulaiman, N. S., Choo, W. Y., Mat Yassim, A. R., Van Laar, D., Chinna, K., & Majid, H. A. (2015). Assessing quality of working life among Malaysian workers. *Asia Pacific Journal of Public*
- The Malaysian Economy in Figure 2016. Economic Planning Unit, Prime Minister's Department. Retrieved from: <http://maddruid.com/wp/wpcontent/uploads/2017/03/MEIF-2016.pdf>
- Vondracek, F., Ferreira, J., & Santos, E. (2010). Vocational behavior and development in times of social change: new perspectives for theory and practice. *International Journal for Educational and Vocational Guidance*, 10(2), 125-138. doi: 10.1007/s10775-010-9176-x
- World Health Organization. (2017). World health statistics 2017: Monitoring health for the SDGs, sustainable development goals. World Health Organization. Retrieved from <https://apps.who.int/iris/handle/10665/255336>

## Career Transition to Become a Social Entrepreneur: The Challenges Faced by Youth Social Entrepreneur in Malaysia

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### ABSTRACT

*The practice of social entrepreneurship activities has grown rapidly around the world and as well as in Malaysia; although in Malaysia it is still considered to be in the early stage period. Nevertheless, little is known about the challenges faced among youth that chooses their career as a social entrepreneur. The main goal of this study is to explore what are the challenges faced by youth social entrepreneur that runs a social enterprise in the Malaysian context. This study was conducted using a qualitative approach, where interviewing methods were used for four youth social entrepreneurs who were voluntarily engaged in this study. Findings of this study have shown career transition to become a social entrepreneur such as i) acclimating to life and career as a social entrepreneur and ii) not getting the support from family are the challenges faced by them. This finding has shown that informants have faced challenges that then became a valuable learning process for them in developing their career as a social entrepreneur. In this regard, the researcher has seen that the process of their career development as a social entrepreneur has given meaning to the informants. And despite the many challenges they have faced, social entrepreneurship activity has reinforced the role of youth social entrepreneur especially when it comes to social responsibility.*

**KEYWORDS:** Youth, Social Entrepreneur, Career, Challenges, Social Entrepreneurship Activity

### 1.0 INTRODUCTION

A career as a social entrepreneur has a positive outlook in terms of the involvement among youth in Malaysia. Despite, social entrepreneurship activity is still in its early stages (Farok, 2011; Sarif, Sarwar & Ismail, 2013; Othman & Abd. Wahid, 2014; MAGIC, 2015, 2016). Yet, participant among youth in social entrepreneurship activities in Malaysia is quite encouraging which made up of 64% of youth under 40 years of age. Out of the fraction of 64%, youth between the ages of 21 - 30 has the highest involvement in social entrepreneurship activities which made up of 37% (MaGIC, 2016). As compared to other countries, for example, the United Kingdom, the majority of social entrepreneurs are aged between 44 - 65 years old (Villeneuve-Smith & Chung, 2013).

Social entrepreneurs are individuals that have two roles. First, running social entrepreneurship activities, where social entrepreneurs need to overcome social problems and secondly at the same time running a business using the medium and this organisation is called a social enterprise (Nur Raihan, 2018).

In the future, entrepreneurship may be considered as a career. An individual who is passionate about entrepreneurship may start because of the experience and the knowledge based on their previous careers (Midlane, 2007; Unger, Rauch, Frese & Rosenbusch, 2011; Eesley & Roberts, 2012; Burton, Sorensen &

Dobrev, 2016). His career as an entrepreneur has been described as a new career opportunity (Inkson, Ganesh, Roper & Gunz & 2010). An individual's decision to become an entrepreneur can be seen as career options (Mohamad, Lim, Yusof, Kassim & Abdullah, 2014). A career in entrepreneurship involves individuals who make decisions to work on their own as a source of income and they also started their own business (Coetzee, Schreuder & Tladinyane, 2014). And the main contribution why an individual decide to become an entrepreneur is related to their intention (Shaver, 1985; Renko, Carsrud & Brannback, 2009; Krueger, 2009; Fayolle, Linan & Moriano, 2014). In the role as social entrepreneur, his or her need to overcome social problems has become their intention to choose this career.

Nowadays, careers are just not focused on the hierarchy of promotions in a hierarchy organisation only. There has been a breakthrough in the field of career where post-modernity career has been introduced. This gives post-modernity career opportunity to be applied within an organisation. Post-modern work here refers to greater career flexibility. For example, protean careers (Peiperi & Barukh, 1997; Arthur & Rousseau, 2001). Protean career involves an individual who wants a career that is not tied to organisational structure and wants to find meaning that can fulfil their life.

Entrepreneurial activity is a process of finding new opportunities or opportunities in alternative careers (Lee & Venkataraman, 2006; Mohamad et al., 2014). Thus, social entrepreneurs act just like commercial entrepreneurs. What distinguishes them are the profit motive they generate, where social entrepreneurs are more focused on creating social values (Bacq & Janssen, 2011). Creating social values refers to generating or creating for mutual good (Murphy & Coombes, 2009; Narangajavana, Gonzalez-Cruz, Garrigos-Simon, & Cruz-Ros, 2016). Although social entrepreneurs act like commercial entrepreneurs, there is still a lack of research and discussion on the experience of youth involvement in social entrepreneurship career.

Individuals who choose a career as a social entrepreneur will have two rather heavy roles, they are responsible for solving problems and also empowering social enterprises. According to MaGIC (2016) developing a social enterprise is twice as difficult as to start a commercial business. This is because social entrepreneurs are assigned the heavy responsibility to develop and sustain the organisation and also in creating an impact on economic development and social value.

A career as a social entrepreneur is generally viewed as a high-risk career, but this has become a career of choice among the youth in Malaysia (MaGIC, 2015). In this regard, this study intends to explore the experience of social entrepreneurship involvement among youth in the Klang Valley area. This is an important aspect because according to a report by MaGIC (2016), social entrepreneurs in Malaysia are facing the problem of balancing the two main roles which are the sustainability of the business as well as the social impact without any prior business knowledge.

Therefore, the purpose of this study is to explore what are the challenges faced by youth social entrepreneur that runs a social enterprise in the Malaysian context. This study would be able to provide empirical evidence in the field of human resource development as well as in social entrepreneurship activities in Malaysia.

## 2.0 LITERATURE REVIEW

### *Social entrepreneur as a career*

There are positive developments in social entrepreneurship in Malaysia, where youth social entrepreneurs have made the switched and moved from the corporate sector, the sector social or commercial business to social enterprises (MaGIC, 2015). As a result, a career as a social entrepreneur has drawn the attention of youth. According to MaGIC (2016), 61% individuals with backgrounds in the corporate sector choose their careers as social entrepreneurs, while 36% are individuals from the social sector and only 3% individuals are fresh graduates. To become a social entrepreneur, those who are interested should have a foundation in entrepreneurial skills to develop their social enterprises so that the social entrepreneurship activities can be successful. According to Hessels, Van Gelderen and Thurik (2008), every entrepreneur needs to have entrepreneurial skills if they want to change the world.

The characteristics of social entrepreneurs are similar to commercial entrepreneurs, the difference is in terms of profit motive (Dees, 1998; 2001). Thus, entrepreneurship can be regarded as a career (Mohamad et al., 2014). Currently, careers are not only focused on the hierarchy of promotions in a hierarchy organisation but also post-modern careers which are more flexible. Such as career protean



(Peiperi & Barukh, 1997; Arthur & Rousseau, 2001). Career protean is characterised by individuals that are looking for a personal meaning that can fit in their lives. It is optional and is also based on previous career experience, education level, and environment.

### ***Motivation to be a social entrepreneur***

Personal experience is an important factor in choosing a career as a social entrepreneur. In a study conducted by Bailey (2012), informants shared how their personal experiences provide the opportunities in identifying, understanding and developing a commitment to specific issues relating to their social enterprise. Education, the nature of careers, life experiences and social networks are also identified as factors that pushed individuals to become a social entrepreneur.

Austin et al., (2006), compared social entrepreneurship and commercial entrepreneurship by discussing how social entrepreneurs observe their environmental context in identifying opportunities. Baron (2006) argues that information value gained through extensive and varied experience is a priority in identifying profitable opportunities. Tang, Kacmar and Busenitz (2009) cite Kirzner's (1999) about alertness that spurts on scanning the horizon which refers to identifying opportunities in entrepreneurship. While Shane (2000) discusses the process of becoming an entrepreneur, the results of this study have shown that prior knowledge can contribute to choosing a career as an entrepreneur. Caution of the mind (Kirzner, 1997) refers to an attitude in accepting missed available opportunities.

Haugh (2007) describes identifying opportunities in the community as an early stage when one or more individuals consider opportunities arising from personal experience, implicit knowledge, intuition, environmental forces, social change, or market failure. Guclu, Dees and Anderson (2002), on the other hand, states the process of creating opportunities for social entrepreneurs, is a personal experience that can provide motivation, inspiration or provide a source of dissatisfaction in establishing new approach. The results of their study found that relevant experience was not often useful in new fields, such as social entrepreneurship activities.

In a study conducted by Bailey (2012), life experiences or specific events that occur to an individual are seen as an important career choice as a social entrepreneur. Prabhu (1999) says that background, the backbone of social entrepreneurship leaders are different. It is based on events in their previous or current careers that trigger change which transform them into the field of social entrepreneurship activities as well as the impact of various things. Roberts and Woods (2005) conducted a case study of a social entrepreneur that turns to social change who has had a bad experience in their past business. Braun (2011) identified the three main theme of social entrepreneurs in their research which are, 1) crisis or event that triggers change, 2) self-confidence, and 3) parents' influence during childhood. From the study of Dhesi (2010), however, states the cause of one's becoming a social entrepreneur, maybe coming from a manifestation from the influence of early socialisation among family members, peers and even associations. According to Yitshaki and Kropp (2015), the main factor of an individual becoming a social entrepreneur is based on experience. Events which driven them into social entrepreneurs so that they can reduce or prevented the same experience from happening to others (Yitshaki & Kropp, 2015; Humphris, 2017).

### ***Family and friends support***

A study conducted by Rajani and Sarada (2008) highlighted that women entrepreneurs in their study received family, relative and other support which made their endeavour in carrying out their enterprises successful. While a study conducted by Omoredede (2014) on the motivation of social entrepreneurs in Nigeria has identified four main categories, one of it is support from social networks. Social network support refers to friends and family providing emotional and physical support for social entrepreneurs. As has been mentions before, career as social entrepreneur is a high-risk career (MaGIC, 2015) due to the heavy responsibility to develop and sustain the organisation, (which is social enterprise) and also to overcome social problems. Thus, to make sure that social mission is accomplish, social entrepreneurs need emotional dan physical support from their family and friends. According to Prabhu (1999) also said that close friend is important in providing emotional support that social entrepreneurs require when they need emotional and problem-solving support as they engage in social entrepreneurial activities.

### 3.0 METHODOLOGY

#### *Research Design*

This study was conducted using a basic qualitative approach to collect and analyse data to answer the research questions. A basic qualitative approach is interested in; 1) how people interpret their experiences, 2) how they contrast their world, and 3) the meaning they attribute to their experiences (Merriam & Tisdell, 2015). In qualitative research, the researcher is the main instrument for collecting and analysing data. Researcher creates interview guide purposely for conducting the interview. The researcher uses the interview as a chance to explore the challenges faced among youth social entrepreneur as best as possible. The in-depth interview was recorded using a voice recorder, which will help in ensuring that rich data was recorded. The data were then transcribed, verbatim and analysed for grouping to identify the theme found by the researcher.

#### *Sampling*

The researcher has selected informants among youth that has participated in social enterprise and social business, who work as social entrepreneurs. Researchers obtain informants' information through a website provided by the Malaysia Global Innovation and Creativity Centre (MaGIC), through the internet search, program participation and snowballing technique. The informants were selected from different social impact sector of social entrepreneurship activities, such as economic access & poverty eradication, education, youth development, women's issues & health, and health & nutrition care.

In this study, the researcher uses purposive sampling where specific criteria were identified. The criteria of selecting informant includes 1) youth who runs social enterprise for at least a minimum of 2 years as social entrepreneur; 2) ages in the range of between 20 to 30 years old, 3) easy to be contacted; and 4) willing to take part in this study. The researcher has contacted informants using email, Facebook, telephone and WhatsApp application. Upon receiving their consent to become an informant, the researcher then set up a time, date and venue for the data collection purposes. Before the interview begins, the researcher will briefly explain the purpose of the study, the procedure in the data collecting and the needs for informants to sign a consent form as an agreement to take part in the study.

To answer the research question of this study, four informant's data has reached the point of data saturation where repetition of data happened and there are also no new information. According to Merriam & Tisdell (2015), reach saturation refers to the point at which researcher realise there are no new information, insights, or understandings are forthcoming.

#### *Data Collection and Analysis*

In conducting the study, researchers have taken steps to collect data to obtain information for the research questions. Firstly, the researchers contact the informant via email, phone calls, and through WhatsApp applications. The informant was also contacted on social media platforms such as Instagram and Facebook to procure the consent of the informants in the study. Afterwards, the researchers and informants then agreed to a set of date, time, and venue for the interview session to take place.

The second step in data collecting is that before the actual interview session, the researchers have met with the informants to introduce themselves as well as to build a relationship so that researchers can get some information about social entrepreneurship activities conducted by the informant (Patton, 2015; Merriam & Tisdell, 2015). This is done to build a sense of familiarity or rapport between the researchers and the informant as to make it easier and comfortable for the informant to share information on the actual interview sessions.

The third step taken is by having the informants come to an agreed place for an interview. The researchers then explain the goals of the study, and how the interviews will be conducted with the informants. The researchers then started the interview session by asking the informant about their background information as a social entrepreneur based on the interview's guide. The interview uses the semi-structured questions that are prepared by the researchers in a more in-depth interview session.

Each interview session was transcribed verbatim. Then, the researchers used Nvivo to analyse the data. After using the software, the researcher concluded that this software act as just an assisting tool in managing the data, whereas the idea of determining the code, category and theme is based on the researcher idea and not the software. However, this software does help the researchers in managing the data more

systematically and also help in time-saving during the process of analysing the data compared when having to do it manually.

## 4.0 FINDINGS & DISCUSSIONS

### *Profile of Youth Social Entrepreneur*

In this study, four informants were actively involved in social enterprises or social businesses; they are aged between 28 to 30 years old. There is only one informant that have four years of social entrepreneurship experience, while the rest have between two and three years of experience. For the study, the researcher used a pseudonym for the identity of the informants. The informants involved in the study come from various social impact sectors, such as economic access & poverty eradication, education, and youth development. Table 1 shows a summary of four informants in this study.

**Table 1: Informant Profile**

Pseudonym	Age	Years as Social Entrepreneur	Social Impact Sector
Ariana	30	3	Economic access & poverty eradication
Laura	30	3	Education
Khadeeja	28	4	Education
Cempaka	29	2	Youth Development

### **What are the challenges faced as a youth social entrepreneurs?**

Based on the interview session, the researcher has formed that career transition to become a social entrepreneur is a challenge faced by youth social entrepreneurs which consist of i) acclimating to life and career as a social entrepreneur and ii) not getting the support from family.

### **Career transition to become a social entrepreneur**

#### *a) Acclimating to life and career as a social entrepreneur*

Acclimating to life and career as a social entrepreneur after leaving their previous career can be seen as a challenge for the informants that are developing their current careers. Ariana, who was willing to let go of the luxurious life that she has previously chosen to become a social entrepreneur who is driven by her own personal reason. According to Ariana,

"... I make the decision myself to strip everything, that I have. I sell my house, I used the existing car that I have, I stopped working. I did not wait for the bonus ever. Your position, whatever I put aside. This is adjustment, its humanity. We cannot, you cannot live luxuriously...".

The same predicament was also faced by Cempaka who was reluctant to leave a comfortable position and the chance to go abroad for work. According to her,

"To release the position not easy decision, because I was in the comfort zone. And I got the opportunity to go travel worldwide, because international company and they always have meeting overseas. To let go this position was a very big decision to make. ...".

Meanwhile for Laura, who used to work in an environment with a lot people such as a school, experience the shift of the working environments when she started to be involved in social entrepreneurship activity, mentioned that, "Yes, you know when you work, because I always work with people, work with students. And then suddenly I'm like all alone. ...".

The career transition that happened to Ariana, Cempaka and Laura who chooses social entrepreneurs as a profession can be categorised as a subjective career. Subjective career refers to a career that is driven by personal desire. Despite facing the challenges in acclimating to life and career as social entrepreneurs, Ariana, Cempaka and Laura have overcome this in the way that they have now acquired personal meaning and satisfaction in carrying out social entrepreneurship activities.

Self-adjustment in life and the environment while doing social entrepreneurship activities can be seen as a challenge for the youth social entrepreneurs in this study. But as they are passionate about achieving their social mission, they did not give up but continue to adapt and adjust to their new environment. According to Ariana and Cempaka, they are willing to let go of the position and the luxury that they once owned to choose social entrepreneur as a career.

### ***b) Not Getting the Support from Family***

Not getting the support from families when they choose to become a social entrepreneur is a challenge that is also experienced by informants in this study. Ariana, who was a former human resource manager from the banking sector didn't receive the support from her parents when she chose to become a social entrepreneur. Ariana said,

"Like that, my parents have a successful daughter. So, they've seen me, in the corporate world. When they compare with the two life, different right? She asked, "How long do you want to work with the Islamic Bonding, why not go somewhere, you do not want to migrate to?". So, here's what it means we have a role to educate, because of the other generation gap. To educate, that success does not measure by materials. Success does not measure by numbers. So, I always constantly remind them. Success does not measure by any of quantitative and so on. ...".

Khadeeja also faced a similar situation whereby her parents who have perceptions about her education status when she mentions about wanting to leave her career as an analyst. She said "... I think they were a lil 'bit sceptical at the beginning, you know when you've gone abroad, then coming back why you just want to be a teacher. ...".

Challenges such as not getting the support from families may impact the informant motivation in this study, which is when they are developing a career as a social entrepreneur. This is because social entrepreneurs need emotional support from family members (Prabhu, 1999; Rajani & Sarada, 2008; Omorede, 2014). The researcher argues that Ariana and Khadeeja have the intention and passion when choosing a career in the social entrepreneurship field. Although at first, they did not receive the support from their family members, they received strong support and encouragement from either their friends or employers and this has carried them to be a social entrepreneur up until now.

## **5.0 CONCLUSION**

The findings of this study that shown career transition to become a social entrepreneur such as i) acclimating to life and career as a social entrepreneur and ii) not getting the support from family are new discoveries on the challenges faced by them. This finding has shown that informants have faced challenges that then became a valuable learning process for them in developing their career. In this regard, the researcher has seen that the process of their career development as a social entrepreneur has given meaning to the informants. As for the implication of the findings for future social entrepreneurs, they must make an earlier consciousness to be prepared in terms of the career transition if they were to make a transition coming from a different background into social entrepreneurship. And that they must be mentally and physically prepared. For as mentioned before, this career is a high-risk career. However, despite the many challenges entrepreneurs have faced, social entrepreneurship activity has reinforced the role of youth social entrepreneur especially when it comes to social responsibility. Based on the finding, authorities such as the Ministry of Youth and Sports and other social entrepreneur regulatory agencies in Malaysia like MaGIC, myHarapan, Malaysian Innovation Foundation, British Council, my Hope, iM4U, Scope Group, Tandemic, Social Enterprise Alliance and others will open their eyes to empower social entrepreneurs in Malaysia by taking the approach to overcome the problem youth social entrepreneur have faced in term of career transition.

## **REFERENCES**

Arthur, M. B., & Rousseau, D. M. (Eds.). (2001). *The boundaryless career: A new employment principle for a new organizational era*. New York: Oxford University Press on Demand.

- Arthur, M. B., Khapova, S. N., & Wilderom, C. P. (2006). Career success in a boundaryless career world. *Journal of organizational behavior*, 26 (2), 177-202.
- Bacq, S., & Janssen, F. (2011). The multiple faces of social entrepreneurship: A review of definitional issues based on geographical and thematic criteria. *Entrepreneurship & Regional Development*, 23(5-6), 373-403.
- Bailey, J. M. (2012). *Committed to entrepreneurial activity and social mission: What is the experience of social entrepreneurship?* (Doctoral dissertation, University Of Minnesota, Minneapolis, USA). Retrieved from <http://conservancy.umn.edu/handle/11299/164692>
- Baron, R. A. (2006). Opportunity recognition as pattern recognition: How entrepreneurs “connect the dots” to identify new business opportunities. *The Academy of Management Perspectives*, 20(1), 104-119.
- Burton, M. D., Sørensen, J. B., & Dobrev, S. D. (2016). A careers perspective on entrepreneurship. *Entrepreneurship Theory and Practice*, 40(2), 237-247.
- Coetzee, M., Schreuder, D., & Tladinyane, R. (2007). Organisational commitment and its relation to career anchors. *Southern African Business Review*, 11(1), 65-86.
- Dees, J. G. (1998). Enterprising nonprofits. *Harvard business review*, 76, 54-69.
- Dees, J. G. (2001). *The meaning of social entrepreneurship*. Retrieved from <http://entrepreneurship.duke.edu/news-item/the-meaning-of-socialentrepreneurship/>
- Dhesi, A. S. (2010). Diaspora, social entrepreneurs and community development. *International Journal of Social Economics*, 37(9), 703-716.
- Eesley, C. E., & Roberts, E. B. (2012). Are you experienced or are you talented?: When does innate talent versus experience explain entrepreneurial performance?. *Strategic Entrepreneurship Journal*, 6(3), 207-219.
- Farok, Z. (2011). *Social enterprise in Malaysia: The UMK experience*. Paper presented at the Asian Solidarity Economy Forum, Seri Cempaka Suites (Menara PGRM), Kuala Lumpur.
- Fayolle, A., Liñán, F., & Moriano, J. A. (2014). Beyond entrepreneurial intentions: Values and motivations in entrepreneurship. *International Entrepreneurship and Management Journal*, 10(4), 679-689.
- Guclu, A., Dees, J. G., & Anderson, B. B. (2002). The process of social entrepreneurship: Creating opportunities worthy of serious pursuit. *Center for the advancement of Social Entrepreneurship*, 1-15.
- Haugh, H. (2007). Community-led social venture creation. *Entrepreneurship Theory and Practice*, 31(2), 161-182.
- Hessels, J., Van Gelderen, M., & Thurik, R. (2008). Entrepreneurial aspirations, motivations, and their drivers. *Small Business Economics*, 31(3), 323-339
- Humphris, G. K. (2017). Motivations of social entrepreneurs. *Fields: journal of Huddersfield student research*, 3(1), 1-15.
- Inkson, K., Ganesh, S., Roper, J., & Gunz, H. (2010). The boundaryless career: A productive concept that may have outlived its usefulness. *Academy of Management Proceedings*, 2010(1), 1-6.
- Kirzner, I. M. (1997). Entrepreneurial discovery and the competitive market process: An Austrian approach. *Journal of economic Literature*, 35(1), 60-85.
- Kirzner, I. M. (1999). Creativity and or alertness: A reconsideration of the Schumpeterian entrepreneur. *The Review of Austrian Economics*, 11(1-2), 5-17.
- Krueger, N. (2009). Entrepreneurial intentions are dead: Long live entrepreneurial intentions. In M. Brannback & A. Carsrud (Eds.), *Revisting the entrepreneursial mind: Inside the black box* (pp. 13-34). New York: Springer.
- Lee, J. H., & Venkataraman, S. (2006). Aspirations, market offerings, and the pursuit of entrepreneurial opportunities. *Journal of Business Venturing*, 21(1), 107-123.

- Malaysian Global Innovation & Creativity (MaGIC, 2015). Malaysian Social Entrepreneurship Blueprint 2015 – 2018. Unleashing the power of social entrepreneurship.
- Malaysian Global Innovation & Creativity (MaGIC, 2016). State Of Social Enterprise In Malaysia 2014/2015.
- Merriam, S. B., & Tisdell, E. J. (2015). *Qualitative research: A guide to design and implementation*. San Francisco: Jossey-Bass.
- Midlane, R. (2007). *Mid-career management transition: from corporate manager to entrepreneur* (Doctoral dissertation, University of Pretoria, Pretoria, South Africa).
- Mohamad, N., Lim, H. E., Yusof, N., Kassim, M., & Abdullah, H. (2014). Estimating the choice of entrepreneurship as a career: The case of Universiti Utara Malaysia. *International Journal of Business and Society*, 15(1), 65-80.
- Murphy, P. J., & Coombes, S. M. (2009). A model of social entrepreneurial discovery. *Journal of business ethics*, 87(3), 325-336.
- National Youth Development Policy (1985). Ministry of Youth and Sports.
- Narangajavana, Y., Gonzalez-Cruz, T., Garrigos-Simon, F. J., & Cruz-Ros, S. (2016). Measuring social entrepreneurship and social value with leakage. Definition, analysis and policies for the hospitality industry. *International Entrepreneurship and Management Journal*, 12(3), 911-934.
- Nur Raihan Che Nawi (2018). *Meneroka pengalaman keterlibatan belia dalam kerjaya usahawan sosial di Lembah Klang, Malaysia*. (Doctoral dissertation, Universiti Putra Malaysia, Serdang, Malaysia).
- Omoredede, A. (2014). Exploration of motivational drivers towards social entrepreneurship. *Social Enterprise Journal*, 10(3), 239-267.
- Othman, L. (2015). *Penyelidikan kualitatif: Pengenalan kepada teori dan metode*. Tanjong Malim Perak:Universiti Pendidikan Sultan Idris (UPSI).
- Patton, M. Q. (2014). *Qualitative evaluation and research methods: Integrating theory and practice*. Thousand Oaks, CA: Sage Publications.
- Peiperl, M., & Baruch, Y. (1997). Back to square zero: The post-corporate career. *Organizational dynamics*, 25(4), 7-22.
- Prabhu, G. N. (1999). Social entrepreneurial leadership. *Career development international*, 4(3), 140-145.
- Rajani, N., & Sarada, D. (2008). Women entrepreneurship and support systems. *Studies on Home and Community Science*, 2(2), 107-112.
- Renko, M., Carsrud, A., & Brännback, M. (2009). The effect of a market orientation, entrepreneurial orientation, and technological capability on innovativeness: A study of young biotechnology ventures in the United States and in Scandinavia. *Journal of Small Business Management*, 47(3), 331-369.
- Roberts, D., & Woods, C. (2005). Changing the world on a shoestring: The concept of social entrepreneurship. *University of Auckland Business Review*, 7(1), 45-51.
- Sarif, S. M., Sarwar, A., & Ismail, Y. (2013). Practice of social entrepreneurship among the Muslim entrepreneurs in Malaysia. *Middle East Journal of Scientific Research*, 14(11), 1463-1470.
- Shaver, K.G., (1985). *The attribution of blame: causality, responsibility, and blameworthiness*. New York. Springer-Verlag.
- Shane, S. (2000). Prior knowledge and the discovery of entrepreneurial opportunities. *Organization science*, 11(4), 448-469.
- Tang, J., Kacmar, K. M., & Busenitz, L. (2009). A social cognition view of alertness in the discovery process of entrepreneurial opportunities. *Academy of Management Proceedings 2009*(1), 1-6
- Unger, J. M., Rauch, A., Frese, M., & Rosenbusch, N. (2011). Human capital and entrepreneurial success: A meta-analytical review. *Journal of business venturing*, 26(3), 341-358.

- Villeneuve-Smith, F & Chung, C (2013). *Social enterprise UK: The people's business*. Social Enterprise UK, London.
- Yitshaki, R., & Kropp, F. (2015). Entrepreneurial passions and identities among HighTech and social entrepreneurs. *Academy of Management Proceedings 2015*(1), 17305-17328.

## Developing Undergraduate Students Employability through Career Development Learning

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### ABSTRACT

*Increasing unemployment due to lack of proper career guidance, career choices and decreasing employability skills among undergraduate students has hampered the effectiveness of career development learning among university students in Nigeria. This inadequate career guidance programmes in the universities has led to many students graduating with careers different from the needs of the employers. This study is based on an extensive review of past research on employability and career development learning. Literature review was conducted alongside DOTS Model. John Holland's theory on career choice and development further added more support to the paper. In order to develop undergraduate students employability upon graduation, Nigerian universities should therefore strengthen their efforts in developing appropriate strategies so as to engage undergraduate students with the domains of career development as portrayed in the DOTS model. More so, the study will call for adequate provision of career development programmes in the universities, as that will provide an avenue for potential graduates to possessed skills, work experience, interview techniques, job search skills and networking which will consequently provide employment generation in the country.*

**KEYWORDS:** Career Development Learning, Employability, Human Resource Development, Undergraduates.

### 1.0 INTRODUCTION

Career can usually be thought to be as one of the multi-faceted, complex, personal process that changes over a person's life-span, and is influenced by dynamic interactions amongst personal, interpersonal, societal, and environmental factors (Patton and McMahon, 2006). Within the core of career development is personal growth, and whenever it is actively included in the programme of study of university education, it can additionally contributes to life-long learning and employability (Jackson and Wilton, 2016) However, preparing potential graduates in Nigeria for the world of work is one of the most difficult task (McKenzie, Coldwell-Neilson, and Palmer, 2018). Employability talents are the skills, knowledge, attributes and attitudes that will enable students to obtain, maintain and change jobs (or generate self-employment) in which they can be fulfilled and successful (Dacre Pool and Sewell, 2007); (Oluyomibo Susan Pitan, 2016). Since employability, being one of their central objectives (Finch, Hamilton, Baldwin, and Zehner, 2013), Nigerian universities are usually expected to help students to prepare better for transition to the labour market by putting in place structures that will enhance students' employability and flexibility in the world of work (Oluyomi Susan Pitan and Atiku, 2017). Career development is well-thought-out to be one of the third components of human resource development. In order to regain career development relevance, HRD must merge the career needs of employees especially undergraduate students who are potential graduates and employers, encouraging "individuals and organizations to create a partnership that enhances employees' (students) knowledge, skills, competencies, and attitudes required for their current and future job assignments" (Plakhotnik and Rocco, 2013).



#### **1.4 Why has Employability become an issue**

Watts (2006) and Bridgstock (2009) as well argue that career development learning is very essential to employability for as it equips students with the knowledge of how, when and where to develop, display and use the full range of their other skills. In a nutshell, career development learning, which is a subset of employability, enables students to utilise their academic and generic skills effectively. However, studies have shown that many students do not actively think about their future careers nor seek assistance until after graduation when it is too late (Bridgstock, 2009; Pitan, 2010; Pitan and Adedeji, 2014; Kinash et al., 2015). For the purpose of that, universities need to put in place more policies which will ensure students engagement with career development from the early days of their university experience. Considering the Nigerian universities, a first-hand study by Adebowale (2011) shows that most institutions lack guidance and counselling units, and where they exist, they are underutilised (Pitan, 2016).

More so, Career development learning, which has a significant relationship with students' enhanced employability. Notably, the model for this study and almost all employability models (Hillage and Pollard, 1998; Watts, 2006; Dacre-Pool and Sewell, 2007; Bridgstock, 2009) illustrate the importance of career development learning in relation to employability. This empirical finding, which supports earlier models, has two implications for universities for them to be fully involved in student employability programs. First is the need for the establishment of institutionalised functional careers service units, which will assist in producing better-informed and self-reliant students who are able to plan and manage their own careers (Watts, 2006; Bridgstock, 2009). Second, since it has been established that many undergraduates do not recognise the need for career services until it is too late, a careful incorporation of career development learning into courses from first-year level is necessary, (Bridgstock, 2009; Pitan, 2010; Pitan and Adedeji, 2014; Kinash et al., 2015).

#### **1.5 Concept of Employability defined**

There is pressure on higher education institutions to design curricula and learning experiences that provide the greatest chance of employment for graduates (McKenzie, Coldwell-Neilson, and Palmer, 2017); (McKenzie et al., 2018) In recent years, providers of higher education have focused on the best ways in which courses can develop graduates with skills for employability. Employability skills can be defined as a set of generic and discipline-specific skills or capabilities developed through education and work experience that contribute towards opportunities to secure a relevant job (Van der Heijde, 2014). (Bridgstock, 2009) asserted that employability is not about employment, but rather the willingness of an individual to maintain and learn new skills regularly. Bennett et al. (2016) argued that employability should have an individual focus, allowing students to determine the requisite skills needed for their chosen career. Model of employability appear in the literature (Dacre Pool and Sewell, 2007; Álvarez-González, López-Miguens, and Caballero, 2017; Jollands, 2015); van der Heijde, 2014), however an agreed definition across the disciplines is lacking (Bennett, Sunderland, Bartleet, and Power, 2016). By developing employability skills, students are contributing towards building effective career competencies, which are a collection of skills that relate to a chosen profession. As individuals progress through life they build competencies composed of skills learnt from previous experiences or learning activities. To be successful at constructing career-related competencies, interests and goals, an individual needs to reflect upon and self-regulate their activities towards further skill development.

#### **1.6 Problem Statement and Purpose of the Study**

A research into developing an undergraduate student's employability framework career development learning in Nigeria has been an issue and that's the only means through which undergraduate students in Nigerian universities will improve their career. So therefore, Durosaro and Nuhu (2012) noted that most undergraduates' students have problems in the course of their studies because they were not properly guided in the choice of subject combinations while in the universities. Students who are not well guided may find themselves in courses for which they have no talent and may equally end up in jobs that do not fit their personality type. Bojuwoye and

Mbanjwa (2006) further added that students who come from institutions that lack infrastructural facilities are adversely influenced due to lack of career information, resources and inadequate career counselling services. Salami and Salami (2013) opined that most school students are always concerned about their future as regards to job availability and occupation mobility. They further explained that how the young people of today meet the problem of tomorrow will depend upon the amount of success they make in planning for the tomorrow (Okojide, Adekeye and Bakare, 2018).

Choice of career among undergraduate's students in Nigeria in this ever-evolving economic and technological advancing society has been a major issue that needs to be carefully addressed. A good number of undergraduates' students are studying certain courses not because they were chosen willingly or carefully guided but due to certain influences beyond their control, consequently, they end up doing a job totally different from what they studied in the universities. Furthermore, Waudo (2008) noted that there were students who insisted on studying courses that were obvious that they do not have what it takes to study them in terms of academic abilities and aptitude. They end up changing course, dropping out of school and most of the time frustrated. Therefore, this is the ultimate idea that calls for a research on developing an undergraduate student's employability framework through career development learning, (Okojide, Adekeye and Bakare, 2018) as that's the means through career related matters should be developed among undergraduate students in Nigerian universities.

### **1.7 Conceptual Issues on Career Development Learning**

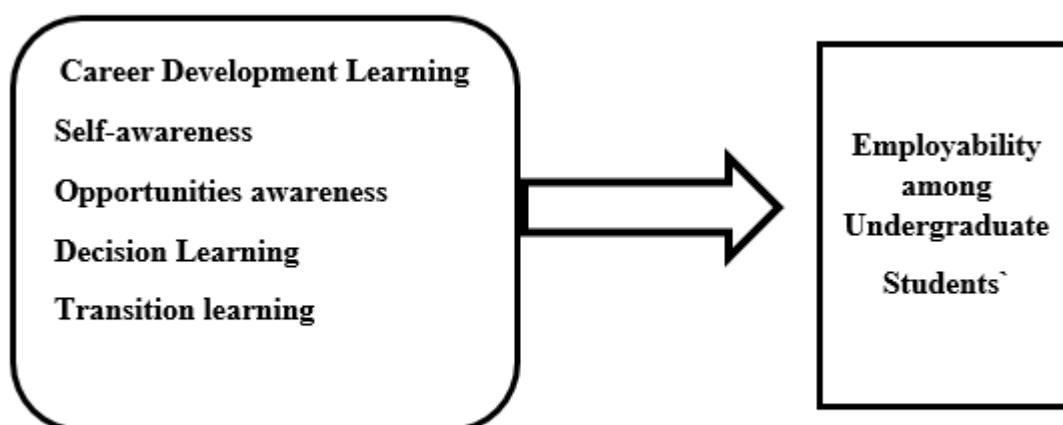
Career development learning is also an essential components of human resource development which is vital for employability among potential graduate. It usually has to do with activities include training on CV preparation, job searching, job applications and interview preparation, self-presentation and communications skills which will in one way or the other enhances the level of employment of potential graduates in Nigeria (Pitan and Atiku, 2017).

Consequently, since career development learning involves skills, knowledge and attributes vital for employment. It is vital for undergraduate students to receive some education in career development learning (Dacre Pool and Sewell, 2007). Understanding the demands of the labour market will also be an added advantage to the undergraduates in order for them to stay competitive (Dacre Pool, Qualter, and Sewell, 2014). According to (Hillage and Pollard, 1998), presentation of the potential graduates plays an important role in securing occupations. Without knowing what to expect in the career world, students would not have ideas on how to create a CV, how to search for jobs and so on. In the historical study conducted by (Law and Watts, 1977), career development learning helps individuals develop their self-awareness, opportunity awareness and career management skills which is essential components of employability (Small, Shacklock, and Marchant, 2018); (McIlveen et al., 2011).

### **1.8 The Conceptual Framework**

The study describes emergent work from one of the skills research initiative portfolio of research models known as the DOT Model (2006) account of employability. The framework guided the review and evaluation of the literature, especially it summarizes the ideas, variables and relationships explored in the previous sections.

The most commonly recognised model of CDL is known as the DOTS model (Law and Watts 1977). A student may gain an excellent degree classification and develop many of the required generic skills, but if they are unable to decide what type of occupation they would find satisfying, or be unaware of how to articulate their knowledge and skills to a prospective employer, they are unlikely to achieve their full career potential (Lorraine Dacre Pool, 2016). The DOTS model as shown in the diagram below:



**Figure: 2 Conceptual Framework**

**Source: Lorraine Dacre Pool, 2016**

While DOTS is a useful model to illustrate the steps in working with someone who is preparing for other transitions. For example, a client about to transition into retirement also must consider their personality, to explore their abilities, aptitude, skills, aspirations, interests and values. The DOTS model has a relatively pan-career approach (McIlveen et. al, 2011).

This is the components of DOTS model which enhance the chances of employability of students upon graduation from the universities (Watts, 2006).

1. **Self-awareness:** students need career assistance so they can sense themselves clearly, knowing their similarities and differences to others; understanding their personality and how that may affect their opportunities; exploring actual and potential qualifications, abilities, aptitudes, skills, qualities, and physical strengths, and the limitations of these; exploring personal needs, aspirations, satisfiers, interests and values. In some areas of the world, understanding how family views may impact and intersect with self-awareness (McIlveen et. al, 2011).
2. **Opportunity awareness:** students need career assistance to experience and gain understanding of the world of work, their potential range of opportunities, what requirements and responsibilities they will need to meet, and what satisfaction and rewards they are likely to achieve.
3. **Decision learning:** students need access to career assistance to understand the many ways decisions can be made including pressures, expectations and cues; methods of decision-making; developing skills in prioritisation, curation of information and self-knowledge; learning to balance risk against likely reward; and taking responsibility for the impact and outcomes for themselves.
4. **Transition learning:** Ultimately, students must progress from the worlds-of-learning to the worlds-of-work, and back again over their lifetimes. The DOTS model requires students not only to understand their direction, but also to make effective transitions from learning to work. More so, students need career assistance so as to grow self-awareness and skills, manage the transitions into adulthood and into adult decisions, such as 'knowing' the reality of the differences between school and work; applying and linking learning to the workplace; building soft skills to help them join and navigate the world of work, such as negotiation, communication, representation, rights and responsibilities.

## **1.9 Theory on Career Choice and Development**

John Holland's Career choice and development theory will be discussed, as it provide additional support for developing an undergraduate student's employability taking into cognisance career development learning. This includes:

According to the theory by Holland (1997), individual personality may influence someone to choose a particular career. The reasons for using this is because, Watts, (2006), has this to say, career learning involves activities that help students to become self-aware of the occupation they want to do, so as to be able to give real considerations to the things they enjoy doing, this will go a long way to motivating them and also suit their personalities. Individuals especially students search for working environment that best suits their interest and capacity. In relation to this theory, people either have low or high identity. The one with low identity normally often select mismatched career and are characterized with moving from one profession to another unlike the one with high identity. The theory further explained that human being is accompanied with several personality traits specifically: Realistic, Investigative, Artistic, Social, Enterprising and Conventional. These traits vary with the type of task assigned to individuals who depend on ability and competence to accomplish a particular activity. Furthermore, understanding the students' personalities and then matching them with a well suited career type can improve satisfaction in the career. Thus, awareness of their own personality is vital for student to make the right choice of their career. It has been documented that personality is a core construct for valuable career choice that determine future success. Self-confidence of the students determines their future plan by them self-selecting the right path towards their future goals. Studies indicate that students who have investigative personality normally prefer to join with sciences studies while the one with artistic personality often decide to select social science studies (Porter and Umbach, 2006); (Gwelo, 2019); Okojide, Adekeye and Bakare, 2018). From the above, the theory presented has made a good references to this study and indicate that career development is a reality, a process, fostered by several influences and changes continuously for life (Okojide, Adekeye and Bakare, 2018).

## **2.0 CONCLUSION**

Career development learning is an essential exercise that which can never be overlooked. The present technological innovation and globalization, with prevailing competitions among corporate organizations have made the world of work excessively active, requiring up-to-date attitudes, knowledge, and skills. Therefore, this study, concludes that opportunity awareness and self-awareness, decision-making, and transition learning skills are all constituents of students' enhanced employability as proposed in the DOTS model. A major inference that can be drawn from the study is that students in Nigeria now recognise the necessity to take responsibility for developing and managing their employability as a result of talents their acquired through career related activities. This notwithstanding, universities need to ensure the adequate provision of career guidance activities as identified in DOTS model for students' enhanced employability and should ensure that students are aware of these opportunities. The study finally conclude with a call for adequate provision of career development programmes in the universities, as that will provide an avenue for potential graduates to possessed skills, interview techniques, job search skills and networking which will consequently provide employment generation in the country.

## **3.0 RECOMMENDATIONS**

There is the need for an effective functioning career service units in all the Nigerian universities. More so, the university authorities and the National Universities Commission (NUC) should ensure the establishment (especially in the areas where they do not already exist), then proper staffing and close monitoring of career services units. Since such units will be responsible for providing career development services to students and creating contact with employers and alumni. Also, there should be a strong university industry relationship. Universities and their various departments should maintain ongoing communication with the industry, especially in areas of career development, inviting employers to speak to students about employment opportunities and requirements and internship programmes in the industries. There is also the need for an adequate provisions of teaching and learning environment, particularly in areas of well trained and qualified academic staffs, conducive learning environment, functional library's, as well

as adequate provision of classroom and other facilities. The adequate provisions of afore-mentioned infrastructures will in no small measure ameliorate the lingering nightmare experience by potential graduates particularly in the aspect of employability and career development.

## REFERENCES

- Ahmed, K. A., Sharif, N., & Ahmad, N. (2017). Factors influencing students' career choices: empirical evidence from business students. *Journal of Southeast Asian Research*, 2017, 1-15.
- Álvarez-González, P., López-Miguens, M. J., & Caballero, G. (2017). Perceived employability in university students: developing an integrated model. *Career Development International*, 22(3), 280-299.
- Bennett, D., Sunderland, N., Bartleet, B.-L., & Power, A. (2016). Implementing and sustaining higher education service-learning initiatives: Revisiting Young et al.'s organizational tactics. *Journal of Experiential Education*, 39(2), 145-163.
- Bojuwoye, O., & Mbanjwa, S. (2006). Factors impacting on career choices of Technikon students from previously disadvantaged high schools. *Journal of Psychology in Africa*, 16(1), 3-16.
- Bridgstock, R. (2009). The graduate attributes we've overlooked: Enhancing graduate employability through career management skills. *Higher Education Research & Development*, 28(1), 31-44.
- Crane, L., Kinash, S., Bannatyne, A., Judd, M.-M., Eckersley, W., Hamlin, G., . . . Stark, A. (2016). *Engaging postgraduate students and supporting higher education to enhance the 21st century student experience. Final Report 2016*: Department of Education and Training.
- Dacre Pool, L., Qualter, P., & J. Sewell, P. (2014). Exploring the factor structure of the CareerEDGE employability development profile. *Education+ Training*, 56(4), 303-313.
- Dacre Pool, L., & Sewell, P. (2007). The key to employability: developing a practical model of graduate employability. *Education+ Training*, 49(4), 277-289.
- Durosaro, I., & Nuhu, M. A. (2012). Gender as a Factor in the Career Choice Readiness of Senior Secondary School Students in Ilorin Metropolis of Kwara State, Nigeria. *International Journal of Humanities and Social Science*, 2(14), 109-113.
- Finch, D. J., Hamilton, L. K., Baldwin, R., & Zehner, M. (2013). An exploratory study of factors affecting undergraduate employability. *Education+ Training*, 55(7), 681-704.
- Gwelo, A. S. (2019). Determinants of Career Chice Among Univwersity Students . *MOJEM: Malaysian Online Journal of Educational Management*, 7(1), 1-19.
- Hewitt, J. (2010). Factors influencing career choice. *Cited from www. ehow. com on*, 15(02), 2020.
- Hillage, J., & Pollard, E. (1998). *Employability: developing a framework for policy analysis*: DfEE London.
- Holland, J. L. (1997). *Making vocational choices: A theory of vocational personalities and work environments*. Psychological Assessment Resources.
- Jackson, D., & Wilton, N. (2016). Developing career management competencies among undergraduates and the role of work-integrated learning. *Teaching in Higher education*, 21(3), 266-286.
- Jollands, M. (2015). *A framework for graduate employability adapted for discipline differences*. Paper presented at the Learning for Life and Work in a Complex World: 38th Higher Education Research and Development Society of Australasia (HERDSA) Annual International Conference.
- Koech, J., Bitok, J., Rutto, D., Koech, S., Okoth, J. O., Korir, B., & Ngala, H. (2016). Factors influencing career choices among undergraduate students in public universities in Kenya: A case study of university of Eldoret. *International Journal of Contemporary Applied Sciences*, 3(2), 50-63.
- Law, B., & Watts, A. (2003). The dots analysis. *National Institute for Careers Education and Counselling, The Career-Learning NETWORK*.
- Law, B., & Watts, A. G. (1977). Schools, careers and community. In: London: Church Information Office.
- McIlveen, P., Brooks, S., Lichtenberg, A., Smith, M., Torjul, P., & Tyler, J. (2011). Career development learning frameworks for work-integrated learning. In *Developing Learning Professionals* (pp. 149-165): Springer.
- McKenzie, S., Coldwell-Neilson, J., & Palmer, S. (2017). *Career aspirations and skills expectations of undergraduate IT students: are they realistic?* Paper presented at the HERDSA 2017: Research and development in higher education: curriculum transformation: Proceedings of the 40th HERDSA Annual International Conference.

- McKenzie, S., Coldwell-Neilson, J., & Palmer, S. (2018). Understanding the career development and employability of information technology students. *Journal of Applied Research in Higher Education*, 10(4), 456-468.
- McQuaid, R., & Bond, S. (2003). Gender stereotyping of career choice. method in Kenyan Secondary school. *Nairobi: SMASSE project*.
- Nugent, G., Barker, B., & Welch, G. (2014). *A model of STEM learning and career orientation based on social cognitive theory*. Paper presented at the Society for Information Technology & Teacher Education International Conference.
- Okojide, A., Adekeye, O. A., & Bakare, E. (2018). Factors Influencing Career Choice Among Undergraduate in Covenant University, Nigeria.
- Patton, W., & McMahon, M. (2006). The systems theory framework of career development and counseling: Connecting theory and practice. *International Journal for the Advancement of Counselling*, 28(2), 153-166.
- Pitan, O. S. (2010). *Assessment of skills mismatch among employed university graduates in Nigeria labour market* (Doctoral dissertation, PhD dissertation. Ibadan, Nigeria: University of Ibadan).
- Pitan, O. S., & Olugbenga Adededeji, S. (2014). Students' choice of courses: Determining factors, sources of information, and relationship with the labour market demands in Nigeria. *Africa Education Review*, 11(3), 445-458.
- Pitan, O. S. (2016). Towards enhancing university graduate employability in Nigeria. *Journal of Sociology and Social Anthropology*, 7(1), 1-11.
- Pitan, O. S., & Atiku, S. O. (2017). Structural determinants of students' employability: Influence of career guidance activities. *South African Journal of Education*, 37(4).
- Pool, L. D. (2017). Developing graduate employability: The CareerEDGE Model and the importance of emotional intelligence. In *Graduate employability in context* (pp. 317-338). Palgrave Macmillan, London.
- Plakhotnik, M. S., & Rocco, T. S. (2013). Organizational culture: A literature review of the AHRD 1994-2005 Proceedings.
- Shahzad, M. N., Zahra, S. T., & Ahmed, M. A. (2014). Determinants and influences on students' career choice. *Universal Journal of Management and Social Sciences*, 4(3), 9-30.
- Small, L., Shacklock, K., & Marchant, T. (2018). Employability: a contemporary review for higher education stakeholders. *Journal of Vocational Education & Training*, 70(1), 148-166.
- Van der Heijde, C. M. (2014). Employability and self-regulation in contemporary careers. In *Psycho-social career meta-capacities* (pp. 7-17): Springer.
- Wallace, P. (2009). Career stories of women professional accountants: Examining the personal narratives of career using Simone de Beauvoir's feminist existentialist philosophy as a theoretical framework. *Qualitative Research in Organizations and Management: An International Journal*, 4(1), 62-84.
- Wambu, G., Hutchison, B., & Pietrantoni, Z. (2017). Career Decision-Making and College and Career Access Among Recent African Immigrant Students. *Journal of College Access*, 3(2), 6.
- Watts, A. G. (2006). *Career development learning and employability*: Higher Education Academy York.

## Kelestarian Program Pembangunan Organisasi dalam Badan Bukan Kerajaan di Malaysia

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### ABSTRAK

*Organisasi memerlukan program pembangunan organisasi untuk menambahbaik matlamat organisasi bagi meningkatkan keberkesanan sesebuah organisasi. Keberkesanan dalam sesebuah organisasi ini akan menjadikan organisasi tersebut sebagai organisasi yang lebih berkualiti serta peningkatan produktiviti sumber manusia yang tinggi dengan secara berterusan. Sehubungan itu, setiap organisasi perlu melalui program pembangunan organisasi yang akan menilai dari aspek sistem, struktur, proses dan strategi. Melalui program pembangunan organisasi ini akan meningkatkan kecemerlangan sumber manusia dalam organisasi tersebut menjadi lebih baik. Program pembangunan organisasi mempunyai kepentingan untuk membantu organisasi secara langsung dan tidak langsung untuk menilai kemampuan organisasi dan persekitaran serta menilai semula strategi, struktur dan proses dalam organisasi. Selain itu, program pembangunan organisasi mempunyai kepentingan dalam setiap organisasi kerana wujudnya perubahan terhadap persekitaran. Perubahan dalam pembangunan organisasi perlu dijalankan dengan lebih terancang bagi memastikan sumber manusia boleh beradaptasi dengan persekitaran. Oleh itu, dalam memastikan pembangunan organisasi yang konsisten, agen penggerak memainkan peranan penting untuk mengurus perubahan dengan baik bagi memastikan kelestarian organisasi dapat bertahan dalam jangka masa yang panjang. Walau bagaimanapun, kajian lepas menunjukkan bahawa organisasi berdepan dengan permasalahan untuk mengekalkan terutamanya badan bukan kerajaan. Hal ini kerana, setiap badan bukan kerajaan mempunyai misi, strategi dan matlamat yang berbeza. Oleh itu, dalam mengekalkan kelestarian dalam sesebuah organisasi, Model Pembangunan Organisasi dari Mclean (2006) dijadikan panduan untuk melihat keseluruhan proses dalam organisasi tersebut. Artikel ini memberi fokus terhadap kajian lepas yang membincangkan mengenai kelestarian program pembangunan organisasi dalam badan bukan kerajaan. Hasil perbincangan bagi artikel ini dapat memberi sumbangan yang positif terhadap pembangunan organisasi dari aspek kelestarian organisasi dalam badan bukan kerajaan di Malaysia.*

**KATA KUNCI:** Pembangunan sumber manusia, Pembangunan organisasi, Kelestarian organisasi, Model Pembangunan Organisasi, Badan bukan kerajaan.

### 1.0 PENGENALAN

Organisasi merupakan unit sosial atau kumpulan manusia yang distrukturkan untuk mencapai matlamat yang spesifik (Nadler & Thusman, 1988). Setiap organisasi perlu memberi fokus terhadap program pembangunan organisasi. Ini kerana dengan merancang program pembangunan organisasi yang berkesan ianya akan membantu organisasi untuk mencapai visi dan matlamat organisasi. Matlamat organisasi akan dicapai setelah organisasi melalui sasaran yang telah ditetapkan dalam program pembangunan organisasi. Program pembangunan organisasi ini adalah untuk menambahbaik sebuah organisasi dari peringkat sistem, struktur, proses, strategi dan teknologi untuk meningkatkan keberkesanan dan kecekapan organisasi serta pembangunan individu (McLean, 2006; Cummings & Worley, 2009). Sehubungan itu, setiap organisasi perlu berusaha untuk mencapai matlamat yang telah ditetapkan (Senior, 1997). Ianya perlu bagi membantu dalam meningkatkan kemahiran dan pengetahuan dalam melaksanakan aktiviti-aktiviti dalam organisasi melalui program pembangunan organisasi.

Program pembangunan organisasi memerlukan perancangan yang teliti kerana ianya melibatkan kemajuan dari sudut individu dan kumpulan (Cumming & Worley, 2005). Menurut Blake dan Mouton (1969) menyatakan bahawa pembangunan organisasi mestilah dirancang dan diuruskan dari peringkat atas hingga ke bawah. Hal ini kerana ianya melibatkan keseluruhan sistem dalam organisasi tersebut. Sehubungan itu, Model Proses Pembangunan Organisasi (McLean, 2006) telah dijadikan panduan untuk melihat proses diagnosis dalam sesebuah organisasi. Model Proses Pembangunan Organisasi ini mengandungi lapan fasa yang terdiri daripada keperluan dan tujuan tersendiri. Setiap fasa adalah pendek tetapi memerlukan keperluan sumber yang tinggi (McLean, 2006). Selain daripada itu, Model Proses Pembangunan Organisasi ini disifatkan sebagai model yang dapat mengubah kepada perubahan organisasi.

Perubahan dalam organisasi diperlukan untuk memperbaiki prestasi ke arah pencapaian yang lebih baik. Hal ini disebabkan oleh, persekitaran di sekitar organisasi bersifat dinamik dan cepat berubah (Adeniji, 2013; McLean, 2006). Ini kerana persekitaran organisasi sentiasa berubah yang memberi kesan terhadap organisasi dari aspek strategi, struktur, operasi dan sumber manusia. Dalam organisasi terdiri daripada sebuah sistem yang mempunyai subsistem yang saling berkaitan (Burke & Litwin, 1992). Faktor-faktor yang saling berkaitan yang terdiri daripada struktur, kepimpinan, budaya ini merupakan keperluan yang menyokong kepada program pembangunan organisasi. Keperluan ini akan menyokong kepada prestasi yang berterusan terhadap organisasi agar berkembang dan maju (Burke & Litwin, 1992).

Dalam mencapai prestasi secara berterusan dalam sesebuah organisasi, sumber manusia yang efektif diperlukan dalam sesebuah organisasi bagi meningkatkan keupayaan dalam menguasai teknologi, daya saing dan produktiviti (Dyer, 1984). Walau bagaimanapun, dengan peningkatan sumber manusia setiap tahun turut menggambarkan peningkatan kepada keperluan tenaga kerja terutama dalam sektor ketiga iaitu sektor badan bukan kerajaan.

Badan bukan kerajaan merupakan sektor ketiga yang menjalankan kebajikan, sosial, pengecualian, amal dan badan sosial. Badan bukan kerajaan merupakan badan yang tidak berasaskan kepada keuntungan kerana badan ini dikategorikan sebagai sesuatu yang formal, peribadi, bebas, tidak mengagihkan keuntungan kepada pemilik atau pemegang saham kerana ianya melibatkan sumbangan secara sukarela yang berbentuk masa dalam sesebuah badan tersebut (Salamon & Anhier, 1997). Walau bagaimanapun, badan bukan kerajaan berdepan dengan menghadapi cabaran untuk mengekalkan dan melestarikan badan bukan kerajaan (Letts et al., 1999). Ini turut dibuktikan dalam kajian yang dijalankan yang menunjukkan bahawa badan bukan kerajaan menghadapi cabaran dan halangan dalam memastikan kelestarian organisasi tersebut diteruskan (Frumkin & Andre-Clark, 2000; Gassler, 1998; Jegers, 2003; Kipley et al., 2008).

Kaplan dan Norton (2001) menyatakan badan bukan kerajaan dinilai atas pencapaian matlamat berbanding kelestarian kewangan. Hal ini disebabkan, kelestarian organisasi turut dipengaruhi oleh pencapaian ekonomi dan prinsip ekonomi (Shafritz et al., 2005). Ini juga menunjukkan bahawa badan bukan kerajaan di luar negara turut menghadapi permasalahan sama di mana pasaran semasa menunjukkan peningkatan dari segi kelestarian dalam badan bukan kerajaan (Hansmann, 1980; McDonald, 2007; Pestoff, 1992). Menurut Weerawardena, McDonald dan Mort (2010), masih kurang kajian berkaitan dengan kelestarian organisasi terutamanya dalam badan bukan kerajaan. Dengan jurang yang dinyatakan oleh Weerawardena, McDonald dan Mort (2010) ini telah membawa kepada pengkaji untuk menjalankan kajian terhadap kelestarian program pembangunan organisasi dalam badan bukan kerajaan.

## 2.0 SOROTAN LITERATUR

### 2.1 Pembangunan Organisasi

Pembangunan organisasi merupakan sebuah perancangan yang memberi tumpuan terhadap hubungan yang sihat dalam membantu kumpulan dalam organisasi melakukan perubahan terhadap organisasi. Pembangunan organisasi memberi tumpuan terhadap proses hubungan di antara individu dan kumpulan. Hubungan ini akan memberi impak terhadap organisasi yang turut dikenali sebagai sebuah sistem (McLagan, 1989). Sistem organisasi merujuk kepada pihak pengurusan hingga kepada kumpulan pekerja. Organisasi juga bertindak sebagai sebuah sistem yang menerima *input* daripada persekitaran serta mengeluarkan *output* ke sistem persekitarannya.

Pembangunan organisasi mula terkenal daripada Douglas McGregor dan Richard Bechard pada pertengahan tahun 1950 (Weisboard, 1987). Ianya merupakan pengetahuan dan amalan sains tingkahlaku di mana perubahan dalam organisasi mempunyai kecenderungan untuk menyesuaikan diri terhadap kehendak semulajadi sumber manusia yang merangsang serta memotivasikan pekerja untuk menjadi yang lebih baik (Hall & Goodale, 1986; Cumming & Worley, 2009).

Pembangunan organisasi terdiri daripada strategi, struktur dan proses perubahan di mana perubahan yang berlaku adalah untuk memberi tumpuan kepada strategi dalam mengubah sesebuah organisasi (McLagan, 1989). Selain itu juga, fokus turut memberi tumpuan kepada bagaimana sesebuah organisasi bertindakbalas dengan persekitaran yang luas. Pembangunan organisasi juga memberi tumpuan kepada bagaimana sesebuah hubungan tersebut mempunyai tindakbalas dengan persekitaran yang luas. Persekitaran yang dimaksudkan itu adalah politik, ekonomi, teknologi dan sosial. Persekitaran ini juga akan mempengaruhi oleh pelanggan, pembekal, pilihan sedia ada, pesaing dan pendatang baru dalam saingan (Dalton et al., 1980). Persekitaran juga dipengaruhi oleh faktor-faktor yang terdiri daripada institusi,



kumpulan, individu, peristiwa-peristiwa dan perkara yang di luar organisasi yang akan memberi kesan terhadap organisasi (Nadler & Thusman, 1988).

Pembangunan organisasi juga merupakan salah satu usaha untuk menjalankan perubahan dalam jangka masa yang panjang. Ianya perlu dipastikan bahawa perubahan-perubahan yang dilakukan itu dapat memantapkan organisasi (Hall & Goodale, 1986). Hal ini diperlukan bagi memastikan situasi yang wujud dalam organisasi tidak berbalik kepada situasi asal (Cumming & Worley, 2005). Oleh sebab itu, ianya perlu dirancang dalam tempoh jangka masa yang panjang bagi memastikan perubahan-perubahan yang dilakukan itu dapat meningkatkan keberkesanan organisasi.

Pembangunan organisasi juga membantu pihak pengurusan untuk menjadi lebih efektif yang turut memberi fokus kepada interaksi dan proses penyelesaian masalah di dalam sesebuah organisasi (McLean, 2006). Selain itu juga, fokus ini juga akan memberi peningkatan dalam kebolehan pihak pengurusan atasan dalam menyelesaikan sesebuah masalah organisasi. Perubahan dalam program pembangunan organisasi perlu lebih terancang dan tersusun kerana perubahan dalam tersebut hendaklah bersifat adaptasi terhadap persekitaran. Ianya menunjukkan kesan tindak balas terhadap perubahan persekitaran yang berkesan (Cumming & Worley, 2005). Perubahan terancang yang lebih berkesan perlu dimulakan dengan diagnosis dan mengenalpasti masalah organisasi, memahami isu serta masalah yang dihadapi oleh organisasi sebelum melakukan sebarang perubahan (McLean, 2006).

Pembangunan organisasi juga memerlukan perancangan yang melibatkan dan penyertaan oleh semua pihak agar strategi yang dirancang akan membawa kepada perubahan terhadap organisasi. Setiap usaha-usaha perubahan memberi tumpuan terhadap objektif-objektif yang berdasarkan kepada permasalahan yang telah dikenalpasti dalam organisasi tersebut (McLean, 2006). Oleh yang demikian, strategi dalam perancangan pembangunan organisasi yang teliti akan mempengaruhi perubahan organisasi yang akan kekal dalam tempoh masa yang panjang. Perancangan strategi ini turut diletakkan sebagai teras utama bagi mencapai matlamat organisasi. Strategi yang berkesan akan memberi kesan yang positif terhadap organisasi yang akan membawa kepada kelestarian organisasi.

## **2.2 Kelestarian Organisasi dalam Badan Bukan Kerajaan**

Kelestarian organisasi merupakan satu proses yang melibatkan semua aspek dalam program pembangunan organisasi. Proses ini turut melibatkan pengurusan dan keputusan individu dalam organisasi. Kelestarian organisasi merupakan satu bentuk pembangunan untuk mencapai matlamat organisasi. Matlamat organisasi ini akan memberi impilaksi terhadap sosiekonomi sekiranya ianya dapat diuruskan dengan baik. Dalam mencapai matlamat sesebuah organisasi diperlukan dalam tempoh masa yang panjang (Ghemawat, 2010).

Kelestarian organisasi juga ditakrifkan sebagai kebolehan dan keupayaan dalam sesuatu untuk dikekalkan dan setiap pengkalan itu sendiri. Ianya merupakan sebuah prinsip yang diperlukan untuk menjamin kesejahteraan hidup secara langsung dan tidak langsung. Oleh itu, kelestarian organisasi ini tercipta daripada persekitaran yang produktif dan harmoni bagi memenuhi keperluan sosial dan ekonomi negara (Hasna, 2007). Kelestarian organisasi merupakan sebuah proses untuk memperbaiki organisasi secara kekal. Kelestarian organisasi merujuk kepada perancangan, reka bentuk dan strategi untuk melaksanakan dan menguruskan proses dalam mencari keseimbangan dalam matlamat dan nilai ekonomi, sosial dan persekitaran (Sueldo, 2016). Ianya juga merupakan proses yang memerlukan usaha secara berterusan untuk mengekalkan kestabilan kewangan (Jegers & Verschueren, 2006), untuk mengekalkan operasi dalam sesebuah pengurusan (Pfeffer & Salancik, 2005) dan strategi dalam sesebuah organisasi (Germak & Singh, 2010). Kelestarian organisasi juga ditakrifkan sebagai kebolehan dan keupayaan dalam sesuatu untuk dikekalkan.

Menurut, Analoui dan Samour (2012) menyatakan bahawa kejayaan dalam sesebuah badan bukan kerajaan adalah bergantung kepada strategi yang dirangka yang bersesuaian dengan persekitaran yang mempunyai persaingan yang tinggi. Persaingan yang tinggi ini akan memberi kesan terhadap kualiti hidup masyarakat. Selain itu juga, Analoui dan Samour (2007) turut menjalankan kajian terhadap strategi dalam proses pengurusan dalam badan bukan kerajaan mendapati bahawa strategi yang baik berkait dengan keperluan. Oleh itu, menurut Blake dan Mouton (1982), pengurusan strategi dalam organisasi yang baik menjadi sumber kekuatan dalam sesebuah organisasi yang turut memberi impak yang positif kepada masyarakat.

Perancangan strategi biasanya diletakkan dalam situasi yang penting dalam sesebuah organisasi (Mintzberg, 1994). Oleh itu, strategi tersebut meliputi setiap peringkat dalam organisasi dari peringkat

atasan hingga pihak bawahan dan sekiranya ianya berjaya strategi tersebut turut dilaksanakan di peringkat pengurusan tertinggi dalam organisasi tersebut (Flamholtz & Randle, 2015). Walau bagaimanapun, persekitaran turut berubah dari masa ke semasa yang mengubah persekitaran yang dinamik. Persekitaran yang dinamik ini menglibatkan perubahan dan semakan semula oleh pengurusan tertinggi.

Kelestarian organisasi merupakan sebuah strategi dalam perniagaan yang mempengaruhi pasaran untuk kekal dalam jangka masa yang pendek atau panjang berdasarkan kestabilan kewangan dan kejayaan sesebuah organisasi (Flamholtz & Randle, 2015; Orlitzky et al., 2003). Strategi dalam perniagaan ini dicapai melalui keputusan yang menglibatkan keputusan pihak pengurusan dalam sesebuah organisasi. Menurut Garza et al. (2014), kejayaan sesebuah organisasi merupakan hasil keputusan yang dilakukan oleh pihak pengurusan atasan. Hasil keputusan yang dicapai ini akan memberi kesan terhadap persekitaran ekonomi, sosial dan politik (Presley et al., 2007). Oleh yang demikian, hasil keputusan daripada pihak pengurusan atasan merupakan elemen terpenting untuk mendapatkan kelestarian dalam sesebuah organisasi (Flamholtz & Randle, 2015).

Sehubungan itu, hasil keputusan daripada pihak atasan dipengaruhi ketetapan matlamat organisasi tersebut. Pencapaian matlamat dalam sesebuah organisasi akan menentukan tempoh kelestarian organisasi tersebut (Ghemawat, 2010). Dalam mencapai matlamat organisasi, pihak pengurusan atasan perlu memberi fokus terhadap perancangan dan pelaksanaan strategi yang efektif. Perancangan strategi biasanya diletakkan dalam situasi yang penting dalam sesebuah organisasi (Mintzberg, 1994). Oleh itu, strategi tersebut meliputi setiap peringkat dalam organisasi dari peringkat atasan hingga pihak bawahan. Menurut Blake dan Mouton (1982), pengurusan strategi dalam organisasi perlu menjadi sumber kekuatan dalam sesebuah organisasi kerana ianya memberi kesan yang positif terhadap organisasi. Dengan itu, Jegers (2003) turut menyatakan bahawa strategi yang berkesan akan membawa kepada kelestarian organisasi.

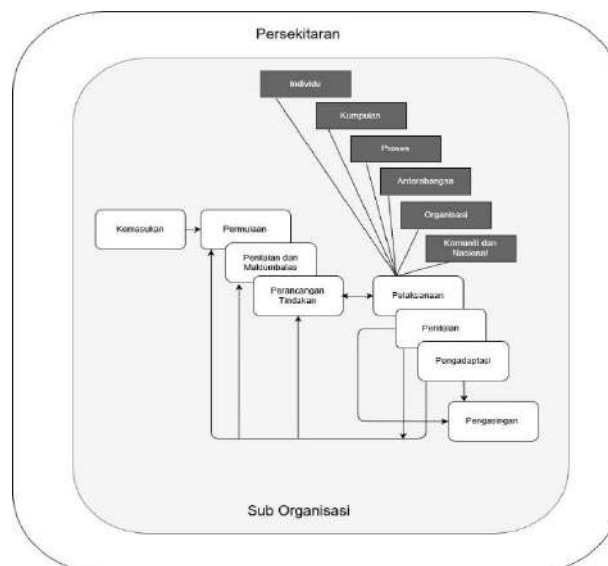
Kelestarian organisasi turut memberi kesan terhadap tahap efektif dalam sesebuah organisasi. Menurut Connolly et al., (2002) menyatakan bahawa organisasi boleh meningkatkan tahap efektif dalam organisasi dengan meningkatkan pengurusan dalam pembangunan kepemimpinan, strategi perancangan, reka bentuk program dan penilaian. Selain itu juga, kesan daripada peningkatan tahap efektif ini akan menjadikan misi dan visi organisasi tersebut menjadi kenyataan sebagai contoh dalam badan bukan kerajaan.

### **3.0 KERANGKA TEORITIKAL KAJIAN**

Model proses pembangunan organisasi ini mula diperkenalkan oleh McLean (2006). Model ini digunakan untuk menguji persekitaran dalam organisasi yang digunakan untuk menerangkan mengenai pembangunan, struktur dan teknikal dalam sumber manusia organisasi tersebut Model ini mengandungi lapan fasa yang terdiri daripada keperluan dan tujuan tersendiri. Setiap fasa adalah pendek tetapi memerlukan keperluan sumber yang tinggi (McLean, 2006).

Fasa yang pertama dikenali sebagai fasa kemasukan atau di peringkat asas. Fasa ini digunakan untuk meneroka penyesuaian perubahan yang dicadangkan. Fasa ini juga akan menggambarkan keadaan dan jangkaan yang akan berlaku dalam proses pembangunan organisasi pada masa akan datang. Seterusnya, fasa yang berikutnya dikenali sebagai fasa permulaan. Fasa ini tidak boleh dimulakan sekiranya fasa kemasukan tidak kukuh. Pada fasa permulaan, infrastruktur asas diperlukan untuk melaksanakan kerja pembangunan organisasi (McLean, 2006).

Selain itu juga, Teori Sistem akan digunakan untuk melihat keseluruhan proses yang berlaku dalam organisasi tersebut. Teori Sistem digunakan untuk menganalisis dan memahami proses yang berlaku di dalam organisasi (Miller, 2003). Selepas fasa permulaan, adalah fasa bagi proses penilaian dan maklumbalas. Pada fasa proses penilaian dan maklumbalas, pengamal pembangunan organisasi akan menjadi agen pergerakan untuk bekerja bersama dengan pemegang taruh. Pada fasa ini, kekuatan dan kelemahan budaya organisasi akan dinilai. Kepentingan minat akan diberi keutamaan kepada sumber yang baik dan efektif yang memberi kesan kepada organisasi. Bagi fasa perancangan dan tindakan akan berlakunya pelaksanaan di pelbagai peringkat individu dan kumpulan, penilaian, adaptasi dan pengasingan. Sehubungan itu, kelestarian organisasi akan berlaku pada peringkat ini sama ada organisasi tersebut akan terus kekal atau berakhir. Oleh itu, Model Proses Pembangunan Organisasi (McLean, 2006) ini dapat membantu pengkaji untuk meneliti proses yang berlaku dalam badan bukan kerajaan.



Rajah 1: Model Proses Pembangunan Organisasi (McLean, 2006)

#### 4.0 KESIMPULAN

Badan bukan kerajaan berkembang dalam persekitaran dan perubahan yang dinamik. Oleh sebab itu, setiap perubahan yang berlaku dari sudut politik, ekonomi, teknologi dan sosial akan memberi kesan terhadap prestasi organisasi baik secara langsung atau tidak langsung. Prestasi yang tinggi dalam sesebuah badan bukan kerajaan akan meningkatkan perkhidmatan yang berkualiti, produktiviti yang tinggi dan pembangunan yang berterusan. Program-program dalam pembangunan organisasi juga turut menekankan terhadap cara-cara memperbaiki dan meningkatkan prestasi dan kualiti agar setiap organisasi terus kekal berdaya saing untuk terus lestari dalam tempoh yang lama.

Oleh itu, kelestarian dalam program pembangunan organisasi dengan menekankan aspek perubahan terhadap strategi, struktur, teknologi dan sistem dalam organisasi tersebut. Program pembangunan organisasi juga merupakan elemen penting dalam badan bukan kerajaan kerana ia membantu sumber manusia dalam badan bukan kerajaan untuk menjadikan organisasi tersebut menjadi lebih efektif. Oleh itu, menjadi keperluan utama untuk merancang program pembangunan organisasi yang berkesan terhadap badan bukan kerajaan bagi memastikan penyesuaian terhadap perubahan yang berlaku di persekitaran.

#### RUJUKAN

- Adeniji, A. A. (2013). Organizational Change and Human Resource Management Interventions: An Investigation of the Nigerian Banking Industry. *Serbian Journal of Management*, 8(2), 139-154.
- Analoui, F., & Samour, A. (2012). Strategic management: the case of NGOs in Palestine. *Management Research Review*, 35(6), 473-489.
- Blake, R. R., & Mouton, J. S. (1969). *Building a Dynamic Corporation through Grid Organization Development*. Addison-Wesley.
- Burke, W.W., & Litwin, G.H. (1992). A causal model of organisational performance and change. *Journal of Management*, 8(3), 523-546.
- Cummings, T.G., & Worley, C.G. (2009). *Organisation development and change*. (8<sup>th</sup> ed.). Mason: Thomson South Western.
- Connolly, Paul & York. (2002) Evaluating Capacity-Building Efforts for Nonprofit Organizations.
- Dalton, D. R., Todor, W. D., Spendolini, M. J., Fielding, G.J. & Porter, L. W. (1980). Organization structure and performance: A critical review. *Academy of management review*, 5(1), 49-64.
- Dyer, L. (1984). Studying Human Resource Strategy: An Approach and an Agenda. *Industrial Relations*, 23(2), 156-169.

- Flamholtz, Eric G., & Randle, Y. (2015). *Growing pains: Building sustainably successful organizations*. John Wiley & Sons.
- Frumkin, P., & Andre-Clark, A. (2000). When mission, markets, and politics collide: Values and strategy in the nonprofit human services. *Nonprofit and Voluntary Sector Quarterly*, 141-163.
- Gassler, R. S. (1998). Altruism and the economics of nonprofit organizations. *Financial Accountability and Management*, 173-182.
- Garza R. L, Rocha, L. & Kumar, V. (2014). A conceptual framework for the implementation of quality management systems. *Total Quality Management & Business Excellence*, 1-13.
- Germak, A., & Singh, K.K. (2010). Social entrepreneurship: Changing the way social workers do business. *Administration in Social Work*, 34(1), 79-95.
- Ghemawat, P. (2010). *Strategy and the business landscape*, (3<sup>rd</sup> Ed.). Upper Saddle River, N.J.: Prentice Hall.
- Hall, D., & Goodale, J. (1986). *Human resource management: Strategy, design and implementation*. Glenview IL: Scott, Foresman.
- Hansmann, H. (1980). The Role of Nonprofit Enterprise. *Yale Law Journal*, 89(5), 835–901.
- Jegers, M. (2003). The sustainable growth rate of non-profit organizations: The effect of efficiency, profitability and capital structure. *Financial Accountability & Management*, 309-313.
- Kaplan, R., S., & Norton, D., P. (2001). *The strategy focused organization: How balanced scorecard companies thrive in the new business environment*. Massachusetts, Harvard Business School Press.
- Kipley, D. H., Lewis, A. O., & Helm, R. (2008). Achieving strategic advantage and organizational legitimacy for small and medium sized NPOs through the implementation of knowledge management. *Business Renaissances Quarterly*, 21-42.
- Letts, C. W., Ryan, W. P. & Grossman, A. (1999). *High performance nonprofit organizations: Managing upstream for greater impact*, Wiley, New York, NY.
- McDonald, R. E. (2007). An investigation of innovation in nonprofit organizations: The role of organizational mission. *Nonprofit and Voluntary Sector Quarterly*, 36(2), 256–281.
- McLagan, P. A. (1989). *Models for HRD practice*. American Society of Training and Development, Alexandria, VA: ASTD Press.
- McLean, G. N. (2006). *Organization Development: Principles, Processes and Performance*. California: Berrett-Kochler.
- Miller, D. (2003). An asymmetry-based view of advantage: Toward an attainable sustainability. *Strategic Management Journal*, 24, 961-976.
- Mintzberg, H. (1994). *The Rise and Fall of Strategic Planning*. Harvard Business Press.
- Nadler, D.A., & Thushman, M. L. (1988). *A model for diagnosing organizational behavior* in Porter, M. (1980). *Competitive strategy*. New York: Free Press.
- Orlitzky, M. (1999). *A Meta-analysis of the relationship between corporate social performance and firm financial performance*. Unpublished doctoral dissertation thesis, The University of Iowa, Iowa City, IA.
- Pestoff, V. A. (1992). Third sector and co-operative services: An alternative to privatization. *Journal of Consumer Policy*, 15(1), 21–45.
- Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence model*. New York, NY: Harper and Row.
- Presley A., Meade, L. & Sarkis, J. (2007). A strategic sustainability justification methodology for organizational decisions: a reverse logistics illustration. *International Journal of Production Research*. 45(18-19), 4595-4620.
- Salamon, L. M., and Anheier, H. K. (1992). In search of the non-profit sector. I: The question of definitions, 3, 125–151.
- Senior, B. (1997). *Organisational Change*. Pearson Education, Harlow.
- Shafritz, J. M., Ott, J. S., & Jang, Y. S. (2005). *Classics of Organization Theory*. (6th Ed.).
- Weerawardena, J., McDonald, R. E., & Mort, G. S. (2010) Sustainability of nonprofit organizations: An empirical investigation. *Journal World Business*, 45, 346-356.
- Weisboard, M. R. (1987). *The Jossey-Bass management series. Productive workplaces. Organizing and managing for dignity, meaning and community*. San Francisco, CA, US: Jossey-Bass.

## Learning, Adapting and Leading: A Malay Woman Experience

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### ABSTRACT

*Despite the fact that Malaysian public sector is still dominated by male counterpart, however, there are still a few “iron ladies” who manage to escape the glass ceiling, be at the top, and successfully lead the organization. Even though increasing numbers of both quantitative and qualitative studies have been conducted, however studies that exposing an individual experience from specific racial perspectives are still limited. A qualitative single-case study research approach is used in this study to examine the approaches used by one of top-level Malay woman administrator to break male-centric realm in one of Malaysian higher education government agency. Born and raised from a gender-neutral family, obtained academic degrees and work in male-dominated field, and spent few years working as an engineer shaped the way she thought and behaved at work. The findings in the study indicates that excellent work performance shown until it has been recognized by the former male leader becomes the greatest approach used by the informant to break the patriarchal monopoly. The findings also suggest the non-existence of gender discrimination issue among Malaysian government agency. Implications and recommendation towards future studies are also outlined.*

### 1.0 INTRODUCTION

Men still persist in controlling the field of leadership opportunities in higher education through gender-based rhetoric and male-dominated administrations (Peterson, 2016; Longman, Drennan, Beam, & Marble, 2019). This situation happened worldwide, including in Malaysia. However, the future of a more equal representation of women in leadership positions both in public and private sectors does look increasingly promising in Malaysia, especially given recent progress in strengthening the pipeline of women's talent due the National Women's Policy (DWN) that has been introduced in 2011.

Between 2010 and 2016, women's employment in Malaysia grew at a faster pace compared to male employment, at 4.5 percent and two percent compound annual rates respectively. The statistics also showed that the highest rate of increase in female employment was in health and hospitality services and the public sector. The government statistics in 2017 showed that there were about 50 per cent of women in the civil workforce. The other half population in public sector was men. According to former Chief Secretary to the Government, Tan Sri Dr. Ali Hamsa (2017), for managerial positions, there are 1,419 women officers, representing a total of 35.65 per cent from the total number of management posts in the government. Based on latest official announcement made by Department of Prime Minister on January 15, 2019, out of 28 top positions of Secretary General, only five women leaders are appointed to lead the ministries. However, the data on the top position of Director General in various leading agencies in Malaysia's public sector are not made visible to the public.

Meanwhile, the government's commitment towards increasing the women's leadership representation in the political ministerial positions is evidenced by the appointment of several female senior cabinet ministers in the Government of Malaysia. To date, there are only five female ministers out of 28 ministers, and four female deputy ministers out of 27 deputy ministers. Moreover, women leaders make up less than 20 percent in the House of Representatives and in the Senate respectively.

History reveals the truth that along the administration of Malaysian government in higher education, male leaders had dominated the top post namely Director General of Higher Education, which

enable them to lead the Department of Higher Education (DoHE), under Ministry of Education Malaysia. The position allows them to propose and design the future of national higher education through the policy regulated and executed under the power of ministry. It is because the department is authorised by the Government of Malaysia to govern any matters pertaining to national higher education and to guide the higher education institutions in Malaysia to the right track in accordance with the latest policy announced by the government. The patriarchal monopoly was only broken by a woman leader in year 2014 after Professor Dato' Dr. Asma Ismail took over the top leader position from the previous male Director General of Higher Education. The female legacy is continued until now.

According to Longman, Drennan, Beam, and Marble (2019), rather than looking for numerous barriers that hinder women from aspiring to leadership and advancing into senior-level roles, new streams of research in the leadership literature are highlighting on the individual motivations, approaches, adaptations, pulling and pushing factors of women's leadership aspirations. Instead of putting the blame on the external environment, it is preferable to talk about what women can do to improve their careers (Pafford & Schaefer, 2017). Women leaders usually have tendency to fall under the masculine leadership styles, even though their preferences differ. This study therefore try to answer to the question of "what are the approaches used by a woman leader to break the male-centric realm in Malaysian higher education governmental?"

## **2.0 RELATED LITERATURE**

A great leadership is critical to the organization, as the organizational members require a leader to whom they can rely on; and from whom they can learn and helps them thrive. A good leader achieves their own fullest potential, but a great leader helps other people achieve their fullest potential. Traditional definitions of leadership are challenged by the changing demographic of society with the increasing numbers of women in leadership roles, and shifting expectations in the workplace. Fallender (2015), has defined the current women leadership as continuing to advocate for and invest in changes that support advancement of women within their organizations and industries, by addressing issues of unconscious bias and enlisting the support of both women and men in developing solutions.

Simone de Beauvoir's famous idea in *The Second Sex* (1949) is "one is not born, but rather becomes a woman". This is a key idea of feminism whereby no one is born as women or men, but we build our gender in society. So that any leadership style can be developed by anyone, regardless of them being men or women. As more women develop stronger leadership qualities, more will find their way to the upper levels of management, and the world will finally have access to the leadership talent it needs to drive continued change. The shared experiences and narratives of women in upper-level leadership in a hierarchical, male-dominated environment (Easterly, 2008) serve as powerful role models to younger women starting out on the path to leadership themselves (Madsen, 2012). Today's women leadership is more concerned with practicing and embracing leadership values, in family life and personal relationships, in civic engagement and volunteerism, and in professional endeavours.

Despite significant improvement in recent decades, the predicament of female leaders has a long way to go (Cheung & Halpern, 2010; Hoyt, 2010). Although prejudice and discrimination still make it more arduous for women to advance to positions of leadership, numerous women have broken through the impediments to advancement, but still the questions remain as to why the barriers from both perceived and genuine, seem vast (Lafreniere & Longman, 2008).

Back in 2011, the government of Malaysia has approved a policy mandating that women form at least 30 per cent of senior management and board positions in companies with more than 250 employees by 2016. Commendably, this target has been met both in the civil service and top management of listed companies. In addition, at the end of 2017, women accounted for 19.2 per cent of directors of the top 100 public listed companies compared to 16.6 per cent in 2016. Further strengthened the policy implementation is the action taken by the Securities Commission Malaysia, which on 26 April 2017 released the Malaysian Code on Corporate Governance (MCCG) requiring all companies to disclose their gender diversity policies, targets and measures. During the launch, the Securities Commission Malaysia also set a target to have no all-male boards in large companies (companies on the Financial Times Stock Exchange Bursa Malaysia Top 100 Index or companies with market capitalisation of RM2 billion and above at the start of their financial year) by the end of 2018. On a positive note, it is reported that as at 17 January 2018, there are

only seven companies with all-male boards, a 65 per cent improvement from 20 companies as at 31 December 2016.

Based on The Economist's Women in Leadership in Asia 2016's research, Malaysian women were more active than ever before, in commercial and political positions and comprising 10.2 per cent of board positions on Malaysia's top 100 companies. That is been a positive shift, although not everything is rosy. In a recent report on gender gap by the World Economic Forum (WEF), Malaysia ranked 104 out of 144 countries, a slight improvement from 2016's rank of 106.

Women in Malaysia often succumb to cultural norms, sacrificing their careers to care for their families. To raise women's participation in the workforce, the government has outlined a 59 per cent target by 2020 as part of the 11th Malaysia Plan, compared to 56 per cent currently. The government of Malaysia has urged organisations to increase their effort in retaining women in the workplace by considering flexible work arrangements, longer maternity leave, as well as childcare assistance. On the other hand, changes from the ground up are important too, which require the employers to encourage the development of women leaders at every level, starting from executives to managers and directors, and by ensuring impartial advancement for women and enhancing their skillsets for advancement into senior roles.

### 3.0 STUDY DESIGN AND METHOD

This study used a single-case-study qualitative approach as the methodological framework to describe and interpret the approaches used by a women leader, the Malaysian Director General of Higher Education. The case study presents a rich and holistic account of a phenomenon embedded in real-life situations and offers significant insight (Merriam, 1998). According to Patton (1990), rich data can be collected from case studies, providing a deeper understanding of individuals, groups, problems, or situations. Yin (2003) suggested that a single-case design is best when there is a need to study a critical case or unique situation. A Malay woman, Director General of Higher Education, one of top leadership position in Malaysian government that is predominantly conquered by male, is a rare and unique occurrence. Because of such uncommon situation, it is appropriate to apply a case-study design (Stake, 1995).

#### Study Participant

The respondent of this study is accountable with big responsibility to Department of Higher Education (DoHE), a government department which is responsible for designing the appropriate development of the Malaysia's national higher education system. Therefore, the assumption is made that she is able to provide adequate information needed to answer the research questions. In addition, no comparison is needed to reach the saturation point for a study involved only single informant.

#### Data Collection

Pilot study as to examine the accuracy of interview questions and help better management of interview session and the duration of the session with the help of potential informant has been conducted with the informant. In this point, the trial interview confirms consistency in meaning and is confirmed if the question is appropriate for this research (Makewa, Role & Tuguta, 2013). Table 1 presents details of data collection sessions with the informant.

**Table 1: Important Dates of Collecting Data**

1.	No.	2.	Date	3.	Respondent's Info	4.	Type of Data Collection
5.	1	6.	16 November 2018	7.	Director General of Higher Education	8.	Personal messaging through WhatsApp application – pilot research
9.	2	10.	30 November 2018	11.	Director General of Higher Education	12.	Interview – actual research

#### 1. Primary data through In-depth Interview

In-depth interview is a qualitative research technique that involves conducting intensive individual interviews with a small number of respondents to explore their perspectives on a particular idea, program,

or situation. The technique is useful when you need to get detailed information about the informant's thoughts and behaviours or eager to explore new issues in depth. Primary data was the data collected through the interview session with the informant. The in-depth interviews provide primary advantage as the researcher is able to gain much more detailed information than what is available through other data collection methods, such as surveys. It also may provide a more relaxed atmosphere during data collection process as the respondents may feel more comfortable having a conversation with the researcher about their program as opposed to filling out a survey.

During the actual data collection, the interview takes place within an hour. The interview was digitally recorded and copied immediately after the interview session ended. After completion, the researcher re-read the transcripts to ensure the accuracy of the data. The interview was conducted face-to-face and the location was determined by the informant. The semi structured interview guide (Appendix 1: interview protocol) has been used for interviews. As this study involves individual experiences, perceptions and thoughts, the researcher needs to highlight and remember some ethical considerations.

### **Data Analysis**

The process of data analysis involves "bringing meaning and insight to the words and acts of the participants in the study" (Marshall & Rossman, 1989, p. 72). Hence the interview session with the informant was tape-recorded and later transcribe verbatim. Transcripts were proof-read against the audiotape and corrected.

Data for analysis were derived from the interview transcripts. A thematic analysis was used to uncover three distinct and dominant themes. Transcripts were coded using constant comparative analysis in which data were assigned to an emergent open-coding scheme (Strauss & Corbin, 1990). To cross-check, feedback was received from the informant to ensure the accuracy of the transcribed data.

## **4.0 DISCUSSION OF THE FINDINGS**

To aid in understanding the analysis, findings are displayed along with relevant research in this article. Therefore, they are presented in tandem. Themes that emerged from the data analysis are learn and adapt to the work behavior or male counterpart and lead the male dominated working organization. These themes provide insight on the process that Malay women leaders must go through to lead a male dominated organization.

### **Learn the Work Behavior of Male Counterpart**

The data suggest that the informant's lived experiences are consistent with other women leaders in which they have to learn the playing field. Bass, Avolio, and Atwater (1996) addressed that successful women leaders "should" learn the necessary male characteristics. Specifically, the informant started to learn about the male work culture during her bachelor degree in engineering, one of a male dominated field of study. She received formal education in civil engineering when she started her tertiary education journey with Diploma in Civil Engineering from MARA Institute of Technology in 1982. Then, she graduated with Bachelor of Civil Engineering from New England College (1984). The mother of two daughters continued her academic journey with Master of Civil Engineering from University Lowell in 1987, and Doctor of Philosophy in Civil Engineering from University Leeds in year 1994.

She has joined the department since 2009 with a position of Deputy Director General of Higher Education (Private Higher Education Institutions) until year 2012. Then, she was appointed as Deputy Director General of Higher Education (Public Universities) from 2012 until a day before her appointment as Director General of Higher Education came to effect. Prior to her position at the ministry, she was the Deputy Vice Chancellor (Academic) at Universiti Teknologi Malaysia from year 2006 to 2009. She is also a Fellow of the Institute of Engineers, Malaysia; Professional Engineer, Board of Engineers, Malaysia; an Associate Member of the American Society of Civil Engineers; and an Honorary Member of the Golden Key International Honour Society, USA. The informant commented:

"So far, I have no female bosses except Tan Sri Madinah, Tan Sri Noorul and Dato' Asma'. Before that, all of my bosses are male".



“I learned a lot from my bosses in UTM (Universiti Teknologi Malaysia). My VC (vice chancellor) at that time (which is male) was straightly following protocol. So, I learn where to be protocol. I also learned from my ex-boss that 40% should be initiative, 60% should be follow up and follow through. Without follow up and follow through, the work might not be completed. I had god bosses. All of them are men.”

The informant provided that the family culture also play a role in shaping her understanding towards becoming a good leader. According to her:

“My father always belief that son and daughter are similar. I remember, to me, it is always be my dad. There is no differences between a son and a daughter. Therefore to me, there are no differences between male and female. If you realize, there is any differences in the way I work with men. The most important is productivity. They want impactful and quantitative outcomes”.

### **Adapt to the Work Behavior of Male Counterpart**

To be accepted in the masculine world, women leader must learn to adapt to the masculine culture (Dryburgh, 1999). According to informant:

“Performance. Dato’ Idris Jusoh value my work. Sometimes, do not need to say so many words, people will see. That is why I said, you must do the right thing, you must be honest doing your work.

Over deliver – always present work beyond what is requested from your boss. So, people will see that you are doing your work. And we know about the subject matter very much. Gender bias sometimes happened because women wan to focus on their family.

### **Lead the Male Dominated Organization**

The informant attained the top position in DoHE through her excellence performance and service advancement. As a top leader in leading governmental agency, she plays very important part in leading tomorrow’s future of national higher education. Being an effective leader is critical because she carries a big responsibility to design the future. As an effective leader, her personal approaches seem to be demonstrated in her own ways.

### **Authenticity**

Leaders stay true to the things that make them unique and tirelessly move towards their goals despite outside pressures to change or conform. Hard work, dedication, and long term focus are essential to authentic leadership. She dedicatedly focus her efforts to achieve the goals set in the Higher Education Blueprint by suggesting and implementing new strategies and action plans to continuously improve the quality of national higher education.

“I need to look at the current serving and where I want to bring the education Malaysia to. In our case, it’s look like we have our blueprint, so it is about teamwork. To me, the direction has to be teamwork deliberated, but the strategies need to come from me, for example what 2u2i program and Higher Education 4.0.”

### **Get the Best from Others**

By understanding what the employees and managers really want, she helps them better perform by properly incentivizing (not only with money) their work and progress towards larger goals. To get the best from others, as a leader, she needs to understand their motivations, be positive, generous, open-minded and be able to control their attitude. Antoine de Saint-Exupéry quoted that, “if you want to build a ship, do not drum up the men to gather wood, divide the work, and give orders. Instead, teach them to yearn for the vast and endless sea.”

“When we come out with new things like that, maksudnya sekarang ni IR 4.0. jadi cara mengajar sangat berbeza, I tak boleh masuk university, dan arahkan buat macam ini dan itu. Dan cara yang saya boleh buat adalah dengan memberi award. Award kepada mereka yang come out with teaching and learning method yang cara berkumulatif and menggunakan teknologi.

People at my age are not technology savvy, kena pinjam anak untuk membantu. What we did, kita buat Educator 4.0, kita dapatkan few professors untuk bantu professor lain yang umur macam saya ni untuk guna teknologi. Sekarang ni cara mengajar pun kena berubah, sebab the roles of lecturer dah berlainan sebab student boleh dapat information daripada button 24/7 (hour/day).”

### **Coaching the Potential Leaders**

Coaching has evolved to become a critical development tool used to accelerate the growth of high-potentials and improve an organization's differentiators. A *Harvard Business Review* study indicates that more than 94 per cent of coaching engagements focus on developing the capabilities of high-potential individuals. In her current tenure as a top leader at DoHE, the informant has acknowledged and coached some high-potentials young officers (regardless of gender and race) to be groomed as future leaders in government sector. To her, the purpose of coaching is to enhance the growth of high-potentials officers through some efforts.

“I nak ambil kursus untuk jadi coach. Because I like coaching. I can identify some of those good ones that I think can do very well. Yang cannot do very well, I never say to them you are not. Because I see ramai orang can do the job, but kena polish.”

### **Follow-up and Follow-through**

She emphasized on the importance of taking follow-up and follow-through action in order to ensure that the works are delivered effectively.

“Kalau tak ada follow up and follow through, kerja tak jalan. Macam anak-anak kitalah gak la, pergi mandi!! Diaorang senyap je. Dah mandi ke belum? Hah tu follow up lah. Follow through..tengok telinga tu basuh tak? Sebab tu orang kata, orang perempuan ni very detail, cerewet. Tapi..bagus sebab dia follow up and follow through.

I rasa kerja ni 40 per cent kita punya inisiatif, but 60 per cent is follow up and follow through. Kalau tak, I come up dengan blue print, I come out dengan action plan, kalau tak follow through, tak follow up, tak tahulah ke mana pergi. Sebab follow up and follow through tu lah yang memastikan kerja dilaksanakan. Sometimes you have to be leader; sometimes you have to go down, to see the expenditure. As a manager tu kena tengok bila siap, kat mana. Why, how, two, one.”

### **Be Professional**

For her, be professional is an important element for her to keep surviving in the department. Being a professional leader, you need to understand people around you, including your superior, such as the minister. The ability to understand and manage her emotions, and those of the people around her is crucial, because she understand what her emotions mean, and how these emotions can affect other people. She understands that for leaders, this is essential for success.

“People asked me, macam mana you boleh bertahan sembilan tahun kat situ (JPT). Satu je..be professional. And learn to understand what they want, lots of listening. Setengah orang dia nak cerita apa dia, kadang-kadang orang ni nak kita dengar je, so dengar je. You kena listen, boss ni apa dia nak sebenarnya. I mula nak align apa dia nak tu, I have to think a lot. bos ni, dia ada slogan dia sendiri. So, you have to make sure our activities and our values, semua kena sama. Itu pun, I always tell the VCs, tell our staffs, kita buat kerja je.”

## **5.0 CONCLUSION**

The study finds that the suitable approaches will bring a Malay woman leader to the top leadership position in mainstream public administration of Malaysia. While the ability to adapt is a skill many successful leaders share (Kram & McCollom, 1998). According to Barack Obama, it is women's ability and willingness to ask the right questions that, in part, accounts for their capacity for success in leadership roles. This study try to understand on how high achieving woman has defied male centric assumptions, leading to a better understanding of how she has challenged the premise behind these structures. The findings provide an insight of real woman leadership practice at one of governmental agencies in Malaysia. The leadership approaches taken by a top woman leader in her response towards ensuring the smooth flow of works and efficient governance of Malaysia's national higher education system internally and externally denotes a basic foundation for an effective Malays woman leader in breaking the partriarchal monopoly in government sector. To be a success leader at the top, a woman leader must first learn the work culture of the opponent, adapt and equip herself with necessary work requirement and skills, and then lead by becoming an aunthentic leader. The fact that a woman leader is generally better organiser than men, which means that she has a stronger ability to inspire everyone to pull their weight in the same direction to achieve shared goals.

Furthermore, exploring leadership experience of high-achieving woman leader in governing the national higher education system, in this case is the informant, bring the researcher to an important point for women leadership study. Any top women leaders who dream to demonstrate success stories in their career must exercise effective leadership characteristics and excellence personalities. The informant's successful leadership story offer a tantalising glimpse of what could be possible if many more women leaders are able to participate fully in the workplace, in regards that no gender biases and gender inequality imposed on them. Therefore, the women leaders especially in government agencies will be able to spark positive difference to their working environment, thus may be able to direct the employees, organization and social system towards achieving the organizational goal.

## **6.0 LIMITATIONS OF THE STUDY**

As with any qualitative case study, this study has limited generalizability (Merriam, 1998) for several reasons. First, thematic generalizability is certainly a possibility. Second, the information was self-reported. Finally, only one Malay women leader having this experience and working as Director General of Higher Education at a predominantly male counterpart was interviewed. However, as Mintzberg (1970) pointed out, a sample of one has often proved superior and choosing this method depends on the situation being studied. In literature, there are limited studied related to Malay women leaders.

## **7.0 IMPLICATIONS FOR THE FIELD OF HUMAN RESOURCE DEVELOPMENT**

This study remarks the importance of understanding and valuing a successful role model of a Malay woman leader for future women leaders especially in higher education ecosystem (regardless of federal governmental agencies or higher education institutions) to set a milestone in their roads to leadership. It provides guidance to the women with aspiration to advance in their leadership on how right approaches may bring them to achieving the top ranks. A clearer understanding of the leadership experiences of high-achieving woman will help identify gaps in the literature, and demonstrate the tenacity and resilience required by women to persevere as leaders in higher education (Fochtman, 2011). As a result, women with the aspiration to lead will become better informed and optimistically influenced to strive for top leadership roles in their organizations.

Examining the leadership experience and styles indicative of a woman leader in top management position at a leading governmental agency different scenario contributes to the body of knowledge in understanding their journey toward leadership in public sector from different perspective. Therefore, based on findings, there is a need to further explore the gap which differentiates the women leadership in leading government agency with the leadership at higher education institutions.

## REFERENCES

- Bass, B. M., Avolio, B. J., & Atwater, L. (1996). The Transformational and Transactional Leadership of Men and Women. *Applied psychology*, 45(1), 5-34.
- Longman, K., Drennan, A., Beam, J., & Marble, A. F. (2019). The secret sauce: How developmental relationships shape the leadership journeys of women Leaders in Christian higher education. *Christian Higher Education*, 18(1-2), 54–77.
- Macfarlane, B. (2019). Women professors and the academic housework trap. *Journal of Higher Education Policy and Management*, 41(3), 262-274.
- Marshall, C., & Rossman, G. (1989). *Designing qualitative research*. Thousand Oaks: Sage.
- Merriam, S. B. (1998). *Qualitative research and case study applications in education*. San Francisco: Jossey-Bass.
- Mintzberg, H. (1970). *The nature of managerial work*. New York: Harper & Row.
- Pafford, S., & Schaefer, T. (2017). Women at work and business leadership effectiveness. *Journal of Organizational Culture, Communications and Conflict*, 21(1).
- Patton, M. Q. (1990). *Qualitative evaluation and research methods*. Newbury Park: Sage.
- Peterson, P. L. (2016). *Women as transformative leaders in higher education: An interpretive multi-case study* (Vol. Education Doctoral Dissertations in Organization Development). Minnesota: University of St. Thomas.
- Stake, R. (1995). *The art of case study research*. Thousand Oaks: Sage.
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Thousand Oaks: Sage.
- Yin, R. K. (2003). *Case study research: Design and method*. Thousand Oaks: Sage.

## Enhancing Leadership Qualities through Executive Coaching: Conceptualizing the Learning Process within Coaching Conversation in Malaysia

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### ABSTRACT

*Despite the increasing demand for executive coaching programme, there are still a lot of scepticisms around its effectiveness and limited empirical research to support evidence of effective learning through the coaching process. Practitioners are more focused on the outcome with limited understanding on the science behind its process. The aim of this research is to conceptualise the learning process within coaching conversation to understand how the process able to enhance leadership qualities within leader. This knowledge could facilitate coaches to improve their coaching practise and making impact changes in coachees' life. Using qualitative case study approach, data were collected through semi-structured in-depth interviews that involved nine informants from both coach and coachee that has participated in any executive coaching programme in Malaysia. Selection criteria for coach is that they have conducted executive coaching programme extensively as part of their service for more than five years and have reached to the highest level of professionalism as Professional Certified Coach (PCC) and coachees were individual that holds executive position in their organisations. Findings from the interviews revealed that coachee learnt in six different ways through the coaching process - indirect influence from coach as a role model, enhancing leader's strategic skills, providing positive leadership ecosystem; enhancing leader's cognitive ability; developing attitude as a leader; exposing leader's to effective communication; and supporting leader's emotional development. As conclusion, although coaching is understood as a simple developmental tool where powerful questioning is used as its main fundamental technique, it is not as straight forward as it seems and there are deeper and complex cognitive activities wired to support the changes and enhancement of leadership qualities within leaders. These changes are seen as the outcome of an effective coaching conversation where the process is still under explored and not fully understood.*

**KEYWORDS:** Executive Coaching, Leadership Development, Leadership Coaching, Learning Process in Coaching, Coaching Conversation

### INTRODUCTION

According to International Coaching Federation (ICF), coaching is defined as "partnering with clients in a thought-provoking quote and creative process that inspires them to maximize their personal and professional potential". Based on facilitative learning theory by Carl Rogers (1951), a coach only acts as a facilitator in a coaching process to facilitate the learnings holding to a basic principle that a coachee has the humanistic nature to find answers to their own problem. In practical, the word coaching triggers association to a person that is able to assist and help others to understand about themselves which they have not realized (Zenger & Stinnett, 2010), where individuals will take a step back and analyse themselves objectively from a third-party lenses (Gloss, 2012). Effective coaches have the ability to reinforce and stimulate new positive belief system.

Coaching can be integrated into multiple strategic areas of human resource processes including senior leadership development, talent management, skill development and transition (Rock & Donde, 2008). Some leading firms around the world deployed internal and external coaching program customised to each leader's needs and at the same time to facilitate problem solving based on specific issues and challenges that leaders faced along the way through action learning (Fulmer, Stumpf, & Bleak, 2009).

Through the powerful questioning, coach challenge the old belief system that limit coachee full potential and encourage coachee to take action (Gloss, 2012; Barlow, 2005). Learning is a result of coachee's interaction to actions performed by coach. Thus, it is important to understand how coachee learn from the coaching process to ensure that coach responds to their learning needs and able to deliver the value that is expected from the process (Anderson & Anderson, 2011).

Most organisations are willing to invest on high potential leaders and selected individuals that potentially will bring a lot of value to the organisations (Barner & Higgins, 2007). This trend has created demand for coaching practise to emerge (Bougae, 2005) and grown rapidly over the past years. However,

the investment needs to be supported by clear understanding on how coaching works in developing leaders through its processes as a mean to an end, to realise the value of investment that companies are making.

For the past five years, the increasing popularity of using executive coaching as an effective tool in helping executive leaders to support leader's ongoing self-development to support professional and organizational goals (Terence et al, 2014; Kaufman, 2006) is often based the outcomes of coaching. However, the fundamental understanding of what happens in the space between coach and coachee has not been extensively explored and supported by empirical research (Feldman & Lankau, 2005).

This study is hoped to provide some insights to answer an important research question on how coachee learn in the coaching within the coaching conversation. The views are taken from both coach and coachee as the main players of an executive coaching process. It is noteworthy that limited empirical research has addressed on learning process within executive coaching conversation and this research will be able to provide holistic foundation to guide practitioners and human resources for future research and also practise.

## **LITERATURE REVIEW**

This study supported the motion that leaders are developed and not born. Experiences will enrich leaders' skills; however, it needs additional seasoning to make sure leaders have the right skills to carry out different task at hands at different level; individual, team and organizational level. The demanding and continuous change of today's business environment drives demand and pressure for more effective leadership development in every organisation especially in private organisation. Sustainability of learning increases at higher level due to increased accountability and broader impact.

Investing in leadership development is regarded as the most productive way (Killian, 2010; Cacioppe, 1998) in supporting individual development and increasing organisational effectiveness (Barner & Higgins, 2007; Bougae, 2005) in achieving organisation's targets and improve its resilient and performance in a long run (Jonsen, 2012; Zenger & Stinnett, 2010; Killian, 2010; Barner & Higgins, 2007; Richards, 2006). Continuous leadership development is required to prepare leader to adapt to the complex and evolving challenges in the global business environment. The kind of challenges that leaders face today are different from before and leaders need to evolve and learn to understand how to manage it differently (Smith & Sandstrom, 1999). Executive coaching provides a learning platform for leaders. This is vital in contributing to sustain organizational success.

In relation to this, coaching has emerged in the human resource development practise as a powerful development tool in improving leadership skills of executive leaders to optimise and capitalise their people to drive an organisation towards success and better performance (McComb, 2012). It has been proven that an effective leadership development strategy can be translated into better organisation's performance (Barner & Higgins, 2007) and becoming a stimulant of change in an organisation (Bougae, 2005; Verlander, 1999). Organisations being led by highest quality leaders are likely to achieve financial performance 13 times better than their competitor (Development Dimensions International, 2015).

## **METHODOLOGY**

The study was conducted using qualitative approach informed by the case study paradigm. Case study is chosen as the research method for this study due to its nature to investigate a process in great depth on how coachee learn in a coaching engagement as an effective leadership development tool. Although there is overlap between leadership development tool, this study only focus on executive coaching process without The context for data collection is coaching programmes that was conducted by certified coaches under International Coaching Federation (ICF) Malaysia. Data were collected through semi-structured in-depth interviews gathering views from both coaches and coachees. A total of three coaches and five coachees were selected as informants for this study. Apart from the in-depth interview, data were supported by other relevant information gathered from participant observation, document analysis and field notes.

## **PURPOSIVE SAMPLING**

Perspective of both coach and coachee has an equivalent importance to this study. Informants consist of coachee that should have completed a mid to long term coaching engagement or currently in engage in a coaching program for at least after 3 sessions. To get rich data, coaching outcome is best

evaluated over a period of time as it requires building of trust, rapport and chemistry before entering a safe space for coachee to start having quality and open engagement with the coach (Bozer, Sarros & Santora, 2014). All coachees were senior officials holding executive position in their respective organisation and have participated in an executive coaching programme.

For coaches, they must have conducted executive coaching programme extensively as part of their service for more than five years and being at level Professional Certified Coach (PCC) which is the highest level of professionalism under the International Coaching Federation (ICF). Snowballing sampling was also carried out when coach introduced their coachee that was willing to participate as informant in the study.

## DATA COLLECTION AND ANALYSIS

A total of three PCCs and five coachees were selected for this study. Data were collected through semi-structured in-depth interview until saturation point or data redundancy is achieved. Initial data analysis was done immediately after the first interview by analysing and building categories and theme before conducting next interview.

## FINDINGS AND DISCUSSIONS

Findings from the in-depth interviews that was conducted with views from coach and coachee identified seven themes related to how coachee learn within the coaching space between coach and coachee. The paper acts as an exploratory prompt to question the coaching practice and the build understanding on its learning process. Themes were developed based on the categorization of ideas from informants collected during interviews based on their coaching experience. The themes capture the basis of the experience from coachee and reorganised it into meaningful inputs. Coach and coachee described the following area of indirect learnings methods from the coaching process; indirect influence from coach as a role model; enhancing leader's strategic skills, providing positive leadership ecosystem and continuous support for change.

### 1. Indirect influence from coach as a role model

Coaching is recognised as being a facilitative process rather than instructional (Creasy & Patterson, 2005; Hanbury, 2006). As such, learnings were triggered indirectly from coachee's observation, what they hear and internal realisation that shape leader's new leadership preferences.

The first learning attribute observed was that coachee idolised the coach and expressed interest and appreciation towards their non-judgemental attitudes, supportive nature and try to emulate the positive attributes that coach display during the coaching session. According to Coach 1:

*...ohhhh the coach is doing this...I want to do that...even in a workshop, people said, hey I found that you always accept people's idea, and I think I want to follow that as well...the thing is that a coach become a role model, it is important that the coach is a role model*

Based on the interview, it is found out that, it is not just the strategic questioning part that contributed to coachee's learning but the positive encouragement and moral support plays significant part of facilitating changes in coachee. Coachee are more motivated to change when feel supported and encouraged by the coach. This is witnessed clearly by the coach which can be seen in the level of effectiveness during the learning process. According to Coach 2:

*so it is not only the questions that I may asked during coaching that will help but it is also the coaching assignments that I gave in between, it is also the action plan that the person will take ownership, it is also that the word of encouragement that I may be saying here and there, it will make a huge difference in the learning process...*

Coaching relationship create feeling of connectedness between coach and coachee which is mere just comfortable feeling of being heard and being understood during the coaching session. It is not necessarily that coach has to has a similar background in order to conduct a coaching programme. This feeling of connectedness creates an element of bonding within executive which heighten the human values within

them where they become a people leader.

*so, again because she came from an industry from a place that very familiar to where I wanted to be, she came from the regulatory in Luxemborg CSSF and her husband used to work with there. She understands my predicament, she understand my background, she understand what I am looking at .. And apparently, I don't know then, only recently, after I knew her that the husband used to work with me in the organisation. It is just a coincidence but it is a perfect coincidence. When I told her this is what I want to replicate in Malaysia, she can see that immediately.*

## **2. Enhancing leader's strategic skills**

Effective leadership is important in sustaining a company as good leaders will have the ability to plan for the company's future, setting goals, managing the resources and nurturing its people (Reinersten et al., 2005; McCauley & Douglas, 2004; Johnson, 2000). The strategic leadership skills are built on a foundation of cognitive, socio-emotional and behavioural skills and the absence of these skills will have impact on the companies' growth and development.

Coachee claimed that the coaching process facilitate them to adapt and grow their leadership skills to suits the challenges at hands because they are trained to listen more and ask questions as part of the process which allows them to become a coaching leader themselves.

*Being a boss, you don't have the solutions all the times but by asking questions or giving a scenario, throwing little bit challenges to your staff, sometimes it gets you where you want to be....(Coachee 3)*

Coaching process shaped executive to realised that effective leadership style is no longer a one-way approach but more towards collaborating and engaging with staffs and people surrounding them. The process makes them realized that the autocratic and controlling approach are less effective compared to the coaching leader approach that able to empower not only the leader to learn and grow but also empower the staffs. According to Coachee 4:

*but sometimes in the old leadership style...where we are being a bit autocratic...a bit more controlling, we may curb this growth from the inside...by adapting ourselves to be a coach to ourselves encourages the growth mindset.. that people are able to perform their best...*

Coaching can work well in various areas to support leadership development process. The main advantage of coaching is that the programme can be customised to suit the executive's learning needs. This is acknowledged by Coach 2:

*it helps on, in term of leadership about listening skills, about defining a direction, keeping people engaged, prioritizing, putting some limits...a lot more...*

## **3. Providing positive leadership ecosystem**

The relationship between coach and coachee is lateral and is often performance based (Marcia et al., 2017). The third category emerged illustrate that the executive coaching environment allow the coachee to seek help and support related to their personal and professional development. This trusted relationship allows coachee to open up and engage in developmental inquiry which is key in the coachee learning process (Marcia et al., 2017). According to Coachee 2:

*I don't have any issue opening up with her, I am fully entrusting her but maybe because I clustered the issue only on my career*

Most of the time, coachee felt comfortable in the coaching process as the objectives for the coaching activity is set at individual level, which is personalised and tailored to individual needs (CIPD, 2008).

*It was a one to one session and the programme were designed only for me. I have attended so many trainings in the past but once you walk out of that training, you only use 10 or 20% of it and you forget everything else...But having the session, individual coaching session, it kinda very*



*personal...and it was targeted for me...personally and the problem that I am having...(Coachee 4)*

Receiving unconditional acceptance and respect from the coach not only provide a facilitative condition for coachee to open up, but also directly responsible for change (Billet, 2010). According to Coach 5:

*he sort of giving me a breakthrough ...because he make me realise that I need to talk about things...about issues...when there is any issues, its okey to talk about issues....but within certain principles and parameters..*

Desmond, B & Jowitt, A, 2012 highlighted that it may be difficult for Executive to accept, or change their existing belief and behaviours but the dialogical relationship that happens within the coaching conversation allows to be open to it and reflect on the experience and construct meaning of the experience and learn from it.

Change requires time to be embedded within individual and requires practise. Coaching process allows the practise to be implemented and perfected over time with the help of a coach that will monitor the progress throughout the coaching duration. According to Coach 1:

*We can enforce a practise during the 6 sesssions but not after that. Right. So that is really what we feel that the coachee should do because if they don't practise they will just learn the knowledge...without practise, they will never not remember*

With enough practise, over time executive will be more familiar and conscious of the new changes and knowledge and learn to adapt it permanently before moving to other areas of their task

Confidentiality is the key determinant in the executive decision to open up. They have access to high level of sensitive information and huge responsibilities where their actions would have implication and repercussion to their strategic role.

*And at the same time, they get the assurance that the sensitive information is not shared outside (Coach 3)*

Mutual trust between the coach and the coachee is a basis for greater disclosure and self-exploration by the coachee, and thereby fosters a more effective coaching conversation (Billet, 2010) that are able to help to articulate their problem better, building deeper understanding around their issue and finding the most suitable solution. This approach supports the intellectual and emotional development in a leader (Lancer, N., Clutterbuck, D., Megginson, D., 2016).

#### **4. Continuous support for change**

The findings from the interview indicated that mutual trust between the coach and the coachee is a basis for greater disclosure and self-exploration by the coachee, and thereby fosters a more effective coaching conversation (Billet, 2010) that are able to help to articulate their problem better, building deeper understanding around their issue and finding the most suitable solution. This approach supports the intellectual and emotional development in a leader (Lancer, N., Clutterbuck, D., Megginson, D., 2016).

*Coach is a neutral party whom doesn't have any biases on you, whom don't have any judgement, who don't have any pre-conceived idea about you to give you a very authentic feedback....(Coach 1)*

Coach attributed the effectiveness of the coaching session to the supportive relationship they had with their coachee which encourage the positive changes in coachee. According to Coach 2:

*....then encouraging, supporting, praising and acknowledging and even if no one notice, I would have....and that they knew that they are good at that and they are moving forward even if that is very symbolic and I think it is also my strong believe in them that it is worth it and they feel they can*

Coaching provides balance between downloading a problem to a coach and putting an action plan on how to move forward and finding the best solution to a problem. Coaching is very different from therapy where coaching is future focus. Quoted from Coach 3:

*Talking about how bad is your marriage is doesn't make your marriage getting better right? Talking about what that person did to you doesn't solve anything. You only talk about what need to change? ...tell me more about what you want to change? How you want to change? How you are going to effect the change? Who will you talk to? What tools that you are going to use? How often? ....Only by talking about the moving forward, then you move forward. Not talking about the past. Why it happened? When it happened? How often it happened? (Coach 3)*

## CONCLUSION

Executive coaching is considered as higher-level thinking because each executive has preconceived knowledge based on their previous experience (Olsson. A, Bjoorn.U & Jonson. G, 2008). Cunliffe (2004) highlighted that learning from daily actions takes place inside the head and mind of the individual. Thus, coaching provides a unique environment where reflection is given chance to work its magic which emphasises on deep thinking that demand mental focus and broadest exploration space leveraging on the existing experience (Blackman-Sheppard, G, 2004).

Coach presence in a coaching session works as “detached companionship” where coach is not part of executive social streams and has no other personal agenda than to serve the coachee well. This made coachee feel safe to share their inner secrets and share their experience with the coach. According to Cunliffe (2004), the process of questioning via critical inquiry and reflection facilitate knowledge creation in all related areas which lead to higher awareness and learning of new knowledge.

Understanding how coachee learn in the coaching conversation could help in managing the scepticism around how effective is coaching process in facilitating executives to improve their leadership skills. Coaching is a fluid yet powerful process that leverage on executive's strength and improve on their weaknesses which each programme is customised according to individual preferences.

## BIBLIOGRAPHY

- Argyris, C (1997), “Learning and teaching: a theory of action perspective”, Journal of Management Education, Vol. 21 No. 1, pp. 9-26
- Barlow, L. (2005). "Effective structuring of coaching: using five questions". Development and Learning in Organizations: An International Journal, 11-12.
- Barner, R., & Higgins, J. (2007). Understanding the implicit models that guide the coaching process. Journal of Management Development, 148-158.
- Billett. S (ed.), Learning Through Practice, Professional and Practice-based Learning, DOI 10.1007/978-90-481-3939-2\_14, © Springer Science Business Media B.V. 2010
- Bougae, C. (2005). A descriptive study of the impact of executive coaching from the perspective of the executive leader. Capella University.
- Bluckert, P (2005), "Critical factors in executive coaching – the coaching relationship", Industrial and Commercial Training, Vol. 37 Iss 7 pp. 336 - 340
- Cacioppe, R. (1998). "Leaders developing leaders: an effective way to enhance leadership development programs". Leadership & Organization Development Journal, 194-198
- Clutterbuck, D., & Megginson, D. (2009). Techniques for coaching and mentoring (Vol. 2). Oxford, UK: Butterworth Heinemann.
- Creasy, J., & Patterson, F. (2005). Leading personalised learning. Nottingham: National College for Teaching and Leadership (NCTL).
- Cunliffe, A. L. (2004). On becoming a critically reflexive practitioner. Journal of management education, 28(4), 407-426.
- CIPD 2008. ‘Talent management: design, implementation and evaluation’ CIPD online practical tool. London: CIPD.

- Desmond, B & Jowitt, A (2012), "Stepping into the unknown: dialogical experiential learning", *Journal of Management development*, Vol.31 Issue:3, pp.221-230, <https://doi.org/10.1108/02621711211208853>
- Gloss, (2012). A Hint of this and a pinch of that: Theories that inform coaching and consulting. *Graduate Studies Journal of Organizational Dynamics*.
- Johnson, C. M. (2001). A survey of current research on online communities of practice. *The internet and higher education*, 4(1), 45-60.
- Johnson, C. M. (2001). A survey of current research on online communities of practice. *The internet and higher education*, 4(1), 45-60.
- Jonsen, S. (2012). Coaching executive teams to reach better decisions. *Journal of Management Development*, 711 - 723.
- Killian, S. (2010). Designing Leadership Development Initiatives: Clarifying The Why, Who, What, How and When. *Development and Learning in Organizations: An International Journal*, 15-18
- Lancer, N., Clutterbuck, D & Megginson, D. (2016). *Techniques for Coaching and Mentoring*. London: Routledge, <https://doi.org/10.4324/9781315691251>
- McCauley, C. D., & Douglas, C. A. (2004). Developmental relationships. *Handbook of Leadership Development*, Jossey-Bass, San Francisco, 85-115.
- Olsson, A., Bjoorn, U & Jonson, G (2008), "Experiential learning in retrospect: a future organizational challenge?", *Journal of Workplace Learning*, Vol.20 Issue: 6, pp. 431-442, <https://doi.org/10.1108/1366562081892094>
- Richards, C. (2006). *Action Learning, Leadership and Organizational development in Public Services*. New York: Routledge.
- Reinertsen, J. L., Pugh, M. D., & Bisognano, M. (2005). *Seven Leadership Leverage Points: For Organization-level Improvement in Health Care*. Institute for Healthcare Improvement.
- Smith, L & Sandstrom, J, (1999) "Executive leader coaching as a strategic activity", *Strategy & Leadership*, Vol. 27 Issue: 6, pp.33-36, <https://doi.org/10.1108/eb054652>
- Wilson, C, (2011), *Developing a coaching culture*, Emerald Group Publishing Limited, Industrial and Commercial Training
- Zenger, J & Stinnett, K (2010); *The Extraordinary Coach : How the Best Leaders Help Others Grow*. United States of America: McGraw-Hill.

# **CONTINUING EDUCATION AND LIFELONG LEARNING**

## Urban Farming for Community Well-Being in Klang Valley, Malaysia

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### ABSTRACT

*By 2030, 60-85% of human beings will be living in urban areas. Increasing human populations are causing social, environmental, economic and political problems worldwide and well-being benefits. Urban farming (UF) is one approach for sustainable development that has the potential to provide food within or on the edges of urban areas. UF has gained popularity in cities all over the world and one of the approaches used is through community farming. Community farming are green spaces that practiced on public land with the full authority of the local authorities that provide food, community, and economic benefits. Thus, investigating their significance and benefit across urban regions is critical for research and policy alike. This study explores the contribution of community farming in providing economic well-being of the urban farmers in the Klang Valley, Malaysia. A qualitative approach, via in-depth interviews and observations was used to collect detailed information from eight informants. Data were analyzed and coded to categories and sub-themes. The findings revealed that urban farmers perceived that community farming enhance their economic well-being by reduce cost of living, household food insecurity, create job opportunities and generate income. Community farming is lauded as an urban planning tool to enhance local food systems while improving degraded urban economic. Community farming are therefore important for supporting many well-being benefits. However, since urban agriculture is profitable, more urban farmers should be encouraged to engage in this activity.*

**KEYWORDS:** Urban Farming, Community Farming, Well-Being, Urban Farmer

### 1.0 INTRODUCTION

Today, more than half of the world's population live in urban areas (UNDESA, 2013). It's expected that the pace of urbanization will accelerate (Padgham et al., 2015). As the world population increases, the urbanization process moves in tandem, where more people are expected to live in cities (Tilman et al., 2001). In 2017, approximately 75 percent of Malaysia's population lived in urban areas and cities. This puts Malaysia as one of Southeast Asia's most urbanized countries. The metropolitan area of Greater Kuala Lumpur had a population of more than seven million in that year, making it Malaysia's biggest urban area. However, about twice as many Malaysians lived in cities with half a million inhabitants or less (Statista, 2019). Its urban land area expanded from 3,900 square kilometers in 2000 to 4,600 in 2010 (World Bank, 2015). In 2018, the urban population in Malaysia was approximately 24.4 million. In the years since 2005, the urban population in Malaysia had been steadily increasing, and as is in line with global trends, it is projected to increase further in the future (Statista, 2019). By 2025, it is estimated that 60 to 85 % of humans will be city dwellers (Tilman et al., 2001). Such an increase in population is often accompanied by challenges, such as poverty, poor health, and the wellbeing of the population. As a newly industrializing economy, Malaysia's urban poverty trends have been declining over the years; however, it is imperative to explore more programmes, policies, and practices to tackle the complex nature of urban poverty in the country (Siwar et al, 2016). The population in big cities in Malaysia is increasing. The Klang Valley is one of the main economic zones in Malaysia. It consists of Kuala Lumpur, Putrajaya, and adjoining cities and

towns in the State of Selangor, such as Petaling Jaya, Shah Alam, Klang, Gombak, Hulu Langat and Sepang, which had a population of around 3.98 million in the year of 2000. The rapid transformation of the Klang Valley into a wide urban region during the last decade of the twentieth century has contributed too many of the environmental issues, particularly air pollution.

This phenomenon is the result of continuous urbanization and migration of rural youth and foreign workers to urban areas. This has brought about several challenges, such as unemployment, urban poverty, shortage of food supplies, and transportation and environmental pollution. In response to some of these urban challenges, urban dwellers have adopted UF as a coping strategy within and around city limits. Even though agriculture has been the mainstay of the rural populace in Malaysia, UF can be viewed as an innovative, novel solution for urban challenges. For this reason, even big cities, like Kuala Lumpur, need to be ready to adopt and integrate UF into urban center's to help mitigate the urban challenges. There is some evidence that the main functions of UF in Malaysia are related to concerns about food security as a result of the increasing urban population and constant fluctuations in food prices in big cities (Tiraieyari and McLean, 2017). The allocation of community farming signaled the beginning of local government supported urban agriculture in Malaysia. The purpose of this paper is to examine the contribution of the community farming that have been running in Klang Valley against urban farmer's well-being.

## **2.0 LITERITURE REVIEW**

### **2.1. Urban Farming**

Urban Farming (UF) is receiving increased attention among researchers and academicians in Malaysia (Tiraieyari & McLean, 2017). Maxwell and Devereux (2001) gave the following as some of the reasons for the emergence and prevalence of urban farming... "Rapid urbanization, agricultural policies, crippled domestic food systems, constrained public spending and subsidies, wage cuts, soaring inflation, rising unemployment, lax land use regulations enforcement". Mbiba (1995), Maxwell and Devereux (2001), Maxwell and Zziwa (1992), Djurfelds (2005) saw a lot of benefits from the practice of urban farming to include expanding the economic base through production, processing packaging and marketing of food, creation of jobs, and increasing entrepreneurial activities, reducing the cost of food and making available better quality food products. Hence the need to examine the contribution of farming in urban setups by examining the Klang Valley community farming of Malaysia. Smit et al (2010), defined urban faming as an industry that produces, processes and markets food and fuel, largely in response to the daily demand of consumers within a town, city or metropolis, on land and water dispersed throughout the urban and peri-urban areas, applying intensive product methods, using and reusing natural resources and urban wastes, to yield diversity of crops and livestock. Kekana (2005) saw urban agriculture as an informal set of activities focusing on farm production in an urban setting. According to Bailkey and Nasr (2000), urban farming involves processing and distribution of food, livestock breeding, horticulture and aquaculture. Mougeot (1999) defined UF as an industry located within (intra urban) or on the fringe (peri-urban) of a town, a city or a metropolis, which grow s and raises, processes and distributes a diversity of food and non-food products, (re) using largely human and material resources, products and services found in and around urban areas, and in turn supplying human and material resources, products and services largely to that urban area. Others defined urban farming as the growing, processing, and distribution of food and other products through plant cultivation and raising livestock in and around cities for feeding their own populations (Goldstein, 2011; Hendrickson & forth, 2012). Urban farming can be categorized into three scales: Micro, Meso and Macro. Examples for micro scale initiatives are green roofs, walls, courtyards, backyards and street verges. Urban farming at the meso level are community garden and urban parks, while commercial-scale farms are considered to be urban farming at the macro level (Tiraieyari & McLean., 2017). The different types of urban farming allow for a diverse set of ecosystem structures to contribute to the edible landscape in a range of community types and provide a broad array of services based on community desires (McLain et al. 2012). Urban farming systems are highly heterogeneous in size, form and function and can be found in different types of urban green spaces (Lin et al., 2017). The community farming in Malaysia will therefore be seen as a form of urban farming that is taking place or practiced on public land with the full authority of Malaysia city council. This paper can explore whether the community farming in Klang

Valley can be considered a sustainable project that contributes to the economic well-being of urban farmers’.

## Production system in Urban Farming

Table 1: The form and systems of Urban Farming

Types of System	Description
Household Gardens	Cultivation of a small portion of land around or in backyard of houses are mainly intended to grow and produce food items for family consumption. Vegetables and spices are major features of household gardens, in addition, ornamental plants and backyard poultry apiculture and aquaculture. The key benefits of home gardening are to improve food security and nutritional intake.
Community Garden	A community garden is any piece of land gardened by a group of people. In some cities, reserved public spaces are cultivated communally for the production of food and neighborhood beautification purposes. Members of the neighborhood take part in their green initiative on weekends, in the evenings, and on off days.
Commercial Production	Large-scale establishments are found occasionally, depending on city planning regulations. Such profit-seeking enterprises produce mainly for the local market. In some peri-urban areas, production includes livestock, such as small ruminants, dairy, and poultry production and fisheries.
Office Gardening	This production system is a recent development as many institutions and industries are becoming more environmentally conscious. Corporations are now cultivating food on rooftops (also known as green roofs) or vertical gardens. In many developed countries, greening initiatives have turned offices into more environmentally-friendly workplaces.
School Farm/Garden	Many schools in urban areas maintain agricultural plots within their premises for educational purposes.

(Source: Norsida et al., 2017)

## 2.2. Community Farming

There are various approaches to implementation of urban farming (UF) available in urban areas around the world. One of the forms of urban farming in this context of study is through community farming or community garden. In recent years, the concept of community farming or community garden in the city has received more attention. A community garden plays a huge role in changing the way of life in the capital cities where members from diverse socio-economic backgrounds come together to grow food, which also influences on changing cities’ landscape, changing individuals’ attitude and perspective towards the environment and nature (Trendov 2018). The term community farming or community garden refer to a piece of public land gardened collectively with food crop by a group of people (community) living in the urban neighborhood for daily use (Baldwin et al., 2009; Kearney, 2009; Smith & Kurtz, 2010; JPBDSM & KPKT , 2012; Okvat & Zautra, 2011; Rateike, 2015). The term “community garden” is such a broad term that it can be applied to many situations and locations. In England and China, community farming is practiced in diverse settings of spaces and times, and the findings show that farmers make strong connections with the land, the farmers and other members regardless of their situations (Liu et al. 2017). Community gardens play a significant role in serving as spaces of alternative food production and community development activities in marginalized neighborhoods (Ghose & Pettygrove 2014). In the shape of community gardens, it is estimated that around 15-20% of the world’s food is produced in urban areas (Armar-Klemesu 2000). In recent years, the concept of community farming or community garden in the city has received more attention. A community garden plays a huge role in changing the way of life in the capital cities where members from diverse socio-economic backgrounds come together to grow food, which

also influences on changing cities' landscape, changing individuals' attitude and perspective towards the environment and nature (Trendov, 2018).

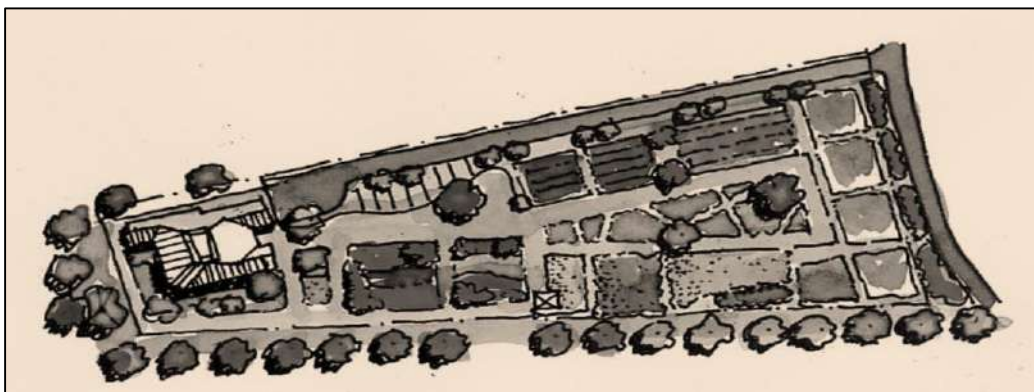


Figure 2.1: Example of Community Garden Layout in Neighborhood  
(Source: JPBD Peninsular Malaysia, 2012)

### 2.3. Well-being Concept

Improving the wellbeing of citizens is the government's stated priority (Bache and Reardon 2013, Austin 2016). There is no singular definition of individual wellbeing (La Placa *et al.* 2013) and it is multidimensional concept (Rabobank, 2011). But it is generally associated with multi-dimensional phenomena related to quality of life (Bache and Reardon 2013, Austin 2016). Wellbeing is more than the absence of disease; it encompasses optimal physical and mental functioning with resilience, positive emotional experiences and overall life satisfaction (Huppert and So, 2013). Veenhoven (2002) stated that well-being means "that something is in a good state". While Gasper (2002), Travers and Richardson (1997) point out, the term 'well-being' is a concept or abstraction used to refer to whatever is assessed in an evaluation of a life situation or 'being'. In short, it is a description of individuals' life situation. McAllister (2005) defines well-being over the absence of disease and considers elements of life satisfaction that cannot be defined, explained and, in essence, no be affected by economic growth (Camfield *et al.*, 2010). Stiglitz *et al* (2009) identified eight dimensions of wellbeing that is material living standards, health, education, personal activities, political voice and governance, social connections and relationships, present and future environmental conditions and insecurity of an economic as well physical nature. Wellbeing is a multidimensional construct that is becoming an increasingly popular measure for health promoters, government agencies and academics as an indicator of societal contentedness and population progress. Well-being is essentially an effort to overcome the problem and improve the quality of life of a human being in a safe, healthy and comfortable environment both physically and socially as well as psychologically (Muhamad Fadhil, 2003). It can be categorized into objective wellbeing and subjective well-being. Objective well-being focuses on an indicator that can be measured quantitatively (e.g. income, economic growth, physical development, education) and most of the measurement is based on the calculation of the secondary data. Generally, the objective perspective concludes that people well-being is better if elements such as income, health, education and others quantified data are fulfilled. While, subjective well-being simply can be defined as people perception of how their life going and they themselves can be best person to judge their wellbeing (Muhammad Yassin *et al.*, 2018). It sees the well-being not just healthy and non-infected but it can be measured either at the individual or community levels and it takes into account elements of life satisfaction that cannot be defined, explained or influenced by economic growth (Camfield *et al.*, 2010). Well-being is a prerequisite for generating a more ambitious environment for the realization of true happiness and peace in a community as well as in a country (Roslan Mohamed & Siti Aishah, 2008). Malaysia has implemented various community development programs aimed at improving the well-being of its people (Zulfikri, 2015). In fact, not only is Malaysia focusing on the development of well-being, but most developed countries make it as one of the agenda in their country's development (Azizah *et al.*, 2014). In addition, well-being encompasses the element of achieving good feeling by taking into consideration how to achieve happiness, satisfaction, pleasure, curiosity, engagement and satisfaction (Jackson, 2013). It is positive result of daily life satisfaction which can be identified through



a positive of physical, social and mental condition (Aisyah et al., 2015). Social elements encompasses four dimensions namely social integration, social contribution, social connectivity and social acceptance. While, mental elements comprise psychological and emotional wellbeing through self-acceptance and personal growth together with happiness and satisfaction of life. Physical elements related to physical health aspects such as food, safety and body care.

#### **2.4. Community Farming and Well-being**

Wellbeing is important to consider in the context of urban farming because while wellbeing may not be the intended end goal of urban farming, many of the outcomes of urban farming participation positively influence wellbeing (Egli et al., 2016). Literature indicates that urban farming can have various positive impacts on human well-being especially in enhancing urban food security, nutrition and health. Urban farming plays different roles in developed and developing countries. In developed nation; it typically has minor role in improving food security and a major role in recreational or leisure activity. In contrast, the justification for urban farming in developing countries is very different (Bryld, 2003). Its play a greater role in increasing food security and generating side income for urban residents (Frayne et al., 2014). Urban farming is a matter of subsistence survival (Mok et al., 2014) to battle malnutrition and hunger in these countries. In Malaysia, urban farming can potentially play in enhancing food security for urban residents has been investigated by Rezai, Shamsudin and Mohamed (2016). Their studies reported positive association between obtaining nutritionally adequate food and involvement in urban farming among 360 Malaysian households. Implementation of urban farming in Malaysia also aims to help households to reduce their expenditures on food through producing their own food. It also generates income for urban and peri-urban farmers while at the same time acting as a social safety net for community development (Tiraieyari & McLean, 2017). Community farming offer a place to grow fresh fruit and vegetables, which may help more sustainable food systems to develop, improve food security through self-consumption at household level in urban areas. In addition, interventions that build within community connectedness in urban and peri-urban settings may increase the household food security (Lee et al. 2018). Community farming contributes to well-being benefits where participation in community garden influences the nutritional health environmental and social environment factors (Egli et al., 2016). A study by Alaimo et al. (2008) shows that household participation in a community garden may improve fruit and vegetable intake among the urban adults compared to those who did not participate. Implementation of urban farming in Malaysia also aims to help urban households to reduce their expenditures on food through producing their own food. The practice of urban farming is thus moving towards becoming a food producing and income earning activity for urban families (Rezai et al., 2016). According to Food Agriculture Organization (FAO), urban farming contributed to individual health, well-being of the community, economic vitality, leisure activities, landscape and environment protection issues (Butler & Moronek, 2002). Therefore, urban farming plays a very important role in two main global problems, i.e. urbanization and food security. Consequently, urban farming contributes towards sustainable urban development (Trendov 2018). The potential for urban farming to play a substantial role in urban poverty and food insecurity reduction should not be overemphasized, as its share in income and overall agricultural production is often quite limited (Zezza, and Tasciotti, 2010). Urban farming has a positive impact on people's well-being in urban areas not only to economic, but social and environment perspective.

### **3.0 METHODOLOGY**

This research uses a qualitative study via case study. The study population consists of urban farmers who have been engaged in community farming activities in the neighborhood for at least three years. Taking the urban farmers of the Klang Valley Community, this study adopted a semi-structured interview and observation method to explore and understand their feelings about the implementation of community garden. By qualitative approach, it provides researchers with an opportunity to explore the thoughts and feelings of urban farmers while working on community gardens through the answers to interviews conducted. Smith and Clay (2010) state that in measuring an individual's subjective well-being, they require open-ended interviews and questions. This means that we allow individuals to self-assess their lives without having to make assumptions about what a good life is like (Waldron, 2010). The interview was conducted

in January until March 2019. There are a total of 8 interviewees; the basic data of the respondents are given in Table 1.

**Table 1: Profile of the Respondents**

Informants	Gender	Age
R1	Female	68
R2	Female	67
R3	Male	71
R4	Male	58
R5	Male	70
R6	Male	52
R7	Female	55
R8	Female	48

To gain a complete understanding of the resident's views, experiences and perspectives on community farming; a qualitative approach was deemed appropriate (Creswell 2007). Specifically, this study utilized semi structured, in-depth interviews, which enable researchers to explore community resident's experiences on a deeper level (Lyndon et al. 2015; Sarmila et al. 2015; Halim, Salleh & Omar 2011; Azman et al. 2010). The semi structured interview approach was utilized for this study because the participant's viewpoints are more likely to be expressed in an openly designed interview situation (Flick 2009). Interviews were 1 hour and half in length and were digitally recorded. Audio files were transcribed, serving as the primary data source. Subsequent data were analyzed and assigned codes, categories and sub themes to develop the main themes.

#### **4.0 FINDINGS & DISCUSSION**

This section presents the results of the interviews regarding aspects from the point of view of economic benefits. The explanations are as follows:

##### **Economic well-being**

##### **(a)Economic Savings on Food**

Expenditures on food by producing their own (Tiraieyari & McLean, 2017). Whilst urban agriculture cannot possibly solve all the problems on food production and distribution in the country, it is can be a practical approach that can reduce daily spending caused by the ever rising cost of living in the city. Through agriculture activities, urban farmers can obtain commonly used food such as chili, kesum leaves, lemongrass, mustard, eggplant and others. The role that UA potentially play in enhancing food security for Malaysian urban residents has been investigated by Rezai, Shamsudin and Mohamed (2016). The cost of buying vegetables were greatly reduced since they are more obtainable from their own crop. It can be seen from statement below:

Respondent R1: *"Kitchen expenses, they are reduced la. The money that we get from selling crops, helps us tremendously. Feels happier that not only we get money, our expenses is minimized, then can get more money...Aaa happy...if possible would do this again".*

Respondent R3: *"Most commonly used ingredients...like chilli I rarely buy. Coz we get to grow it on our own. If we go buy chilli RM2 can only get so much, can only use in one cooking and that's it. In fact we needed to use it daily" ...*

Respondent R5: *"The most important is that we won't be spending so much that it saves a lot of our daily expenses..."*

### **(b) Generate additional income**

Farmers' agricultural products are concentrated on household needs, yet some are already sold in the market as well as profits gained by the community to buy agricultural inputs. From the researcher's observation on urban farmer's gardens, activities such as selling their freshly produced and ready to process directly to the residents around have been conducted near their residential areas. In fact, in developing countries, UA already plays a minor role in generating side income for urban residents (Frayne et al., 2014).

Respondent R1: *"Kitchen expenses, they are reduced la. The money that we get from selling crops, helps us tremendously. Feels happier that not only we get money, our expenses is minimized, then can get more money...Aaa happy. If possible would do this again"*

Respondent R2: *"If it gives good results, it's fun. I'm not saying we should concentrate solely from there to get money. But it's fun. We get to sell things..."*

Respondent R4: *"Our selling has reached 5 to 6 hundred approximately. It is estimated in between that numbers because there are different vegetables in the mix such as brinjal maybe in 200-300 only, almost 1000 money came from selling corns. Aaa...from there, 1000 we don't see it as money right... coz that 1000 is already transferred in the fund..."*

### **(c) Create job opportunities**

Respondent R3: *"Then in 2014, I quit with retired was not serving the government. So after that, I started to explore the lands around this area..."*

Respondent R4: *"Before this I worked in a private company. After quit, gardening give me opportunities to do something as like this."*

Economic saving is an important aspect of the quality of life for urban farmers' due to the rising cost of living. UA activities through food production can help the urban farmers' reduce their daily expenses not only the daily kitchen cost were reduced in terms of groceries needed. Other than that, agriculture practices can also generate additional income and provide job opportunities for urban farmers'. In the context of this study, most of the respondents were from the pensioners. So good quality of life in old age during retirement is the dream of every individual. They need enough money is essential to the quality of life (Walker, 2010; Scott, 2010). Ability good economic is very important for them to be independent financially and is not a burden to children and family members.

## **5.0 CONCLUSION AND RECOMMENDATION**

As a conclusion, the contribution of UF to the economic development of urban farmers' cannot be underestimated. It's helps urban farmers to improve their livelihood through reduce of food costing, generate income and provide a job opportunities. The well-being achieved by urban farmers' can be interpreted depending on their perceptions and feelings with a particular subject matter and it can be subjective which can change over time, place and situation. Based on the research findings, the following recommendations are offered for the relevant authorities and policy makers:

1. Urban farmers' should be mobilized to form associations or cooperatives to help in input supply, marketing of crops and mobilization of credit. The Municipalities continue to explore funding to ensure the sustainability of the existing community farming project in Malaysia.
2. To ensure that community's UF is considered in Malaysian planning development, increase attention by research and extension support to facilitate UF educational and training activities, support for market-oriented and entrepreneurial.
3. Establishing a proper UF in the residential environment of community especially allows retired residents to regain and happily focus on the rest of their lives.

4. In view of the potential of UF as socio-economic activities need to continue into the future and function especially where new housing development is constructed in cities.

## REFERENCES

- Abdul Halim, A., Mohammad Sukeri, K., & Yusuf, P. (2013). Ke Arah Pembangunan Mampan Setempat: Pelaksanaan Local Agenda 21 oleh Pihak Berkuasa Tempatan di Malaysia. *Jurnal Pendidikan Sains Sosial Dan Kemanusiaan*, 6(2), 209–222.
- Alaimo, Katherine, Packnett, E., Miles, R.A & Kruger, D.J (2008). Fruit and Vegetable Intake among Urban Community Gardeners. *Journal of Nutrition Education and Behavior*, 40(2), 94–101. DOI: 10.1111/cuag.12035.
- Armar-Klimesu, M. 2000. Urban agriculture and food security, nutrition and health. In *Growing Cities, Growing Food: Urban Agriculture on the Policy Agenda*, edited by Bakker, N., Dubbeling, M., Guendel, S., Sabel-Koschella, U. & de Zeeuw, H., 99-117. DSE, Berlin, 99-117.
- Austin, A., 2016. On well-being and public policy: are we capable of questioning the hegemony of happiness? *Social Indicators Research*, 127, 123–138.
- Azizah Md. Yusof, Jamal Ali & Roslina Kamarudin (2014). Kesejahteraan Hidup: Kajian Petani di Kawasan Penanaman Padi di Negeri Perlis. *Prosiding PERKEM VIII*, Jilid 3. 719 – 727, ISSN: 2231-962X.
- Azman, N., Halim, S.A., Liu, O.P., Saidin, S. & Komoo, I. 2010. Public education in heritage conservation for geopark community. *Procedia-Social and Behavioral Sciences* 7: 504-511.
- Bache, I. and Reardon, L., 2013. An idea whose time has come? Explaining the rise of wellbeing in British politics. *Political Studies*, 61 (4), 898–914.
- Bailkey, M. & Nasr, J. (2000). From Brownfields to Greenfields: Producing Food in North American Cities. *Community Food Security News*. Fall 1999/Winter 2000:6
- Baldwin, K., Beth, D., Bradley, L., Dave, N., Jakes, S., & Nelson, M. (2009). *Eat Move More North Carolina: Growing Communities*. North Carolina. Retrieved from <https://www.eatsmartmovemorenc.com/Gardens/Texts/ESMMGardens-LoRez.pdf>
- Bryld, E. (2003). Potentials, problems, and policy implications for urban agriculture in developing countries. *Agriculture and Human Values*, 20: 79–86.
- Butler, L., Moronek, D.M. 2002. *Urban and Agriculture Communities: Opportunities for Common Ground*. Ames, LA, USA: Council for Agricultural Science and Technology.
- Camfield, L., Streuli, N., & Woodhead, M. (2010). Children's Well-being in Developing Countries: A Conceptual and Methodological Review. *European Journal of Development Research*, 22(3), 398-416.
- Creswell, J.W. 2007. *Qualitative Inquiry and Research Design: Choosing among Five Approaches*. Chicago, IL: Sage Publications.
- Deci, E., & Ryan, R. (2006). Hedonia, eudaimonia, and well-being: an introduction. *Journal of Happiness Studies*. 9(1):1–11. DOI: 10.1007/s10902-006-9018.
- Djurfeldt et al (2005). *The African Food Crisis*. CABI. Publishing Oxfordshire.
- Egli, V., Oliver, M. & Tautolo, ES. (2016). The development of a model of community garden benefits to wellbeing. *Preventive Medicine Reports*, 3:348–352.
- Flick, U. 2009. *An Introduction to Qualitative Research*. Thousand Oaks, CA: Sage Publications.
- Frayne, B., McCordic, C., & Shilomboleni, H. (2014). Growing out of Poverty: Does Urban Agriculture Contribute to Household Food Security in Southern African Cities? In *Urban Forum*, 25, 177-189. Springer. Retrieved from <http://link.springer.com/article/10.1007/s12132-014-9219-3>
- Gaspar, D. (2002) 'Is Sen's Capability Approach an Adequate Basis for Considering Human Development?' *Review of Political Economy*, 14(4): 435–61.
- Ghose, R. & Pettygrove, M. 2014. Actors and networks in urban community garden development. *Geoforum* 53: 93-103.
- Golden, S. (2013). *Urban agriculture impacts: social, health, and economic: a literature review*. University of California Sustainable Agriculture Research and Education Program.

- Goldstein (2011). Urban agriculture: a sixteen city survey of urban agriculture practices across the country. Page 4. Retrieved from <http://www.georgiaorganics.org/Advocacy/urbanagreport.pdf>.
- Haliza Abdul Rahman (2018). Amalan Dan Kepentingan Pertanian Bandar Di Malaysia. Prosiding Seminar Antarabangsa Arkeologi, Sejarah, Bahasa dan Budaya di Alam Melayu (ASBAM) Ke-7, 28-29 Julai 2018, Hotel Jayakarta, Lombok, Nusa Tenggara, Indonesia.
- Hanski I, von Hertzen L, Fyhrquist N, Koskinen K, Torppa K, Laatikainen T, Karisola P, Auvinen P, Paulin L, Makela MJ, Vartiainen E, Kosunen TU, Alenius H, Haahtela T (2012). Environmental biodiversity, human microbiota, and allergy are interrelated. *Proceedings of the National Academy of Sciences of the United States of America*, 109:8334–8339.
- Hartig, T., Mitchell, R., De Vries, S., & Frumkin, H. (2014) Nature and health. *Annu Rev Public Health* 35:207–228.
- Hendrickson, M. K. & Porth, M. K. (2012). Urban Agriculture Best Practices and Possibilities. University of Missouri Extension.
- Hoornweg, D. & Munro-Faure, P. (2008). Urban Agriculture for Sustainable Poverty Alleviation and Food Security.
- Huppert, F. A., & So, T. T. C. (2013). Flourishing across Europe: Application of a new conceptual framework for defining well-being. *Social Indicators Research*, 110, 837–861. Doi: 10.1007/s11205-011-9966-7.
- JPBDSM & KPKT. (2012). *Panduan Pelaksanaan Inisiatif Kejiranan Hijau-Pembangunan Kebun Kejiranan*.
- Kearney, S. C. (2009). The Community Garden as a Tool for Community Empowerment: A Study of Community Gardens in Hampden County. Masters Theses. University of Massachusetts. <https://doi.org/10.1016/j.ufug.2015.07.001>
- Kekana DS (2005). A socioeconomic analysis of urban agriculture. The Soshanguve project. South Africa.
- Korpela, K. (2002). Children's environment, In: Betchel, R. B. and Churchman, A. (eds.).
- La Placa, V., McNaught, A., and Knight, A., 2013. Discourse on wellbeing in research and practice. *International Journal of Wellbeing*, 3 (1), 116–125.
- Lee, A.C.K & Maheswaran, R (2011). The health benefits of urban green spaces: A review of the evidence. *Journal Public Health*, 33, 212–222.
- Lee, G.O., Surkan, P.J., Zelner, J., Olórtegui, M.P., Yori, P.P., Ambikapathi, R., Caulfield, L.E., Gilman, R.H. & Kosek, M.N. (2018). Social connectedness is associated with food security among peri-urban Peruvian Amazonian communities. *SSM - Population Health* 4: 254-262.
- Lee-Smith, D. (2010). Cities Feeding People: An Update on Urban Agriculture in Equatorial Africa. *Environment and Urbanization*, 22(2), 483-99
- Lin, B.B., Gaston, K.J., Fuller, R.A., Wu, D., Bush, R & Shanahan, D.F. (2017). How green is your garden? Urban form and socio-demographic factors influence yard vegetation, visitation, and ecosystem service benefits. *Landscape and Urban Planning*, 157, 239–246.
- Liu, P., Gilchrist, P., Taylor, B. & Ravenscroft, N. 2017. The spaces and times of community farming. *Agriculture and Human Values* 34(2): 363-375.
- Lyndon, N., Selvadurai, S., Rose, R.A.C. & Hong, H.S. 2015. Cattle marketing social network among the rural native community, Sarawak, Malaysia: A qualitative research. *Mediterranean Journal of Social Sciences* 6(5S1): 269- 277.
- Maxwell and Devereux (2001). Food Security in Sub Saharan Africa. Overseas Development Institute.
- Maxwell and Zziwa (1992). Urban Farming in Africa: The case of Kampala Uganda Acts press Nairobi.
- Mbiba (1995). Urban Agriculture in Zimbabwe Implications for urban management and Poverty. Aldershot Aver burg.
- McAllister, F. (2005). Wellbeing concepts and challenges. Discussion paper prepared by for the Sustainable Development Research Network.
- McLain R, Poe M & Hurley PT et al (2012). Producing edible landscapes in Seattle's urban forest. *Urban For Urban Greening*, 11(2):187–194.
- Mitchell, R., & Popham, F. (2008). Effect of exposure to natural environment on health inequalities: an observational population study. *Lancet*, 372:1655–1560.
- Mok, H.F., Williamson, V.G., Grove, J.R., Burry, K., Barker, S.F. & Hamilton, A.J. (2014). Strawberry fields forever? Urban agriculture in developed countries: a review. *Agronomy for Sustainable Development*, 34, 21–43.

- Mougeot (1999). Thematic paper 1: Urban agriculture: Definition, presence, potentials and risks. Growing cities Growing Food Conference, Havana, Cuba
- Mumaw, L. and Bekessy, S., 2017. Wildlife gardening for collaborative public-private biodiversity conservation. *Australasian Journal of Environmental Management*. DOI 10.1080/14486563.2017.1309695.
- Noriah Othman, Rabiatal Adawiyah Latip & Mohd Hisham Ariffin (2018). Urban farming activity towards sustainable wellbeing of urban dwellers. *IOP Conference Series: Earth and Environmental Science*, 117. Doi: 10.1088/1755-1315/117/1/012007.
- Norsida Man, Sulaiman Umar, and Tiraieyari. N (2017). Urban Peri-Urban Agriculture for Sustainable Livelihoods in Malaysia: The Role of Extension Services. In: *Urban Farming in Malaysia: Improving Food Security While Greening*. UPM Press.
- Okvat, H. A., & Zautra, A. J. (2011). Community Gardening: A Parsimonious Path to Individual, Community, and Environmental Resilience. *American Journal of Community Psychology*, 47(3–4), 374–387. <https://doi.org/10.1007/s10464-010-9404-z>
- Padgham, J., Jabbour, J. & Dietrich, K. (2015). Managing change and building resilience: A multi-stressor analysis of urban and peri-urban agriculture in Africa and Asia. *Urban Climate*, 12, 183–204. <http://dx.doi.org/10.1016/j.uclim.2015.04.003>.
- Payne, L., Orsega-Smith, B., Godbey, G., & Roy, M. (1998). Local Parks and the Health of Older Adults: Results from an Exploratory Study. *Parks Recreation*, 33(10), 64– 71.
- Rabobank Annual Report, 2011.
- Rateike, A. (2015). *Community Gardens in Knoxville: Insight into Challenges Facing Community Garden Initiatives*. The University of Tennessee, Knoxville. Retrieved from [http://trace.tennessee.edu/cgi/viewcontent.cgi?article=2905&context=utk\\_chanhonoproj](http://trace.tennessee.edu/cgi/viewcontent.cgi?article=2905&context=utk_chanhonoproj).
- Redwood, Mark, ed. (2009). *Urban Agriculture in urban planning: generating livelihoods and food security*, Earthscan and the International Development Research Centre (IDRC), London, UK.
- Rezai, G., Shamsudin, M.N. & Mohamed, Z. (2016). Urban Agriculture: A Way Forward to Food and Nutrition Security in Malaysia. *Procedia - Social and Behavioral Sciences*, 216, 39-45.
- Rojas, M. (2003c) “Happiness is such a Complex Thing: The Need for a Transdisciplinary Approach,” unpublished document.
- Roslan Mohamed & Siti Aishah (2008). *Pembangunan Masyarakat ke arah Kesejahteraan Berteraskan Pembangunan Insan*.
- Sarmila, M.S., Zaimah, R., Lyndon, N., Hussain, M.Y. & Awang, A.H. 2015. Local community economic wellbeing through CSR project. *Mediterranean Journal of Social Sciences* 6(4S3): 79-87.
- Scott J, Plagnol AC, Nolan J (2010) Perceptions of quality of life: Gender differences across the life course. In: Scott J, Crompton R, Lyonete C (eds) *Gender inequalities in the 21st Century: New Barriers & Continuing constraints*, 193-209. Edgar Publishing, Inc., United State.
- Siwar, C., Ahmed, F., Bashawir, A. & Mia, M.S. (2016). Urbanization and Urban Poverty in Malaysia: Consequences and Vulnerability. *Journal of Applied Sciences*, 16, 154-160.
- Smit, J. & Nasr, J. (1992). ‘Urban agriculture for sustainable cities: using wastes and idle land and water bodies as resources’. *Environment and Urbanization*, 4 (2), 141-152.
- Smith, C. L., & Clay, P. M. (2010). Measuring subjective and objective well-being: Analyses from five marine commercial fisheries. *Human Organization*, 69(2).
- Smith, C. M., & Kurtz, H. E. (2010). Community Gardens and Politics of Scale in New York City\*. *Geographical Review*, 93(2), 193–212. <https://doi.org/10.1111/j.1931-0846.2003.tb00029.x>
- Stiglitz, J. E., Sen, A., & Fitoussi, J. (2009). Report by the Commission on the Measurement on Economic Performance and Sosial Progress. Paris: The Commission on Economic and Social Progress.
- The World Bank (2015). *Malaysia among Most Urbanized Countries in East Asia*. <http://www.worldbank.org/en/news/feature/2015/01/26/malaysia-among-most-urbanized-countries-in-east-Asia>.
- Tilman, D., Fargione, J., Wolff, B., D'Antonio, C., Dobson, A., Howarth, R., Schindler, D., Schlesinger, W.H., Simberloff, D., & Swackhamer, D (2001). Forecasting Agriculturally Driven Global Environmental Change. *Science*, 292 (5515), 281-284. DOI: 10.1126/science.1057544.
- Tiraieyaki, N., & McLean, G.N (2017). Introduction and Overview. In Tiraieyari, N., Abu Samah, A & McLean, G.N (Eds), *Urban Farming in Malaysia: Improving Food Security While Greening the Environment* (pp.1-28). Serdang: Universiti Putra Malaysia Press.



- Travers, P. and Richardson, S., 1997. Material well-being and human well-being. In F. Ackerman, D. Kiron, N.R. Goodwin, J.M. Harris and K. Gallagher (Editors) Human well-being and economic goals. Island Press, Washington, pp. 26-29.
- Trendov, N.M. 2018. Comparative study on the motivations that drive urban community gardens in Central Eastern Europe. *Annals of Agrarian Science* 16(1): 85-89.
- United Nations Department of Economic and Social Affairs (UN DESA) (2013). World Population Policies 2013. Population Division, United Nations Department of Economic and Social Affairs, New York. [www.un.org/en/development/desa/population/publications/pdf/policy/WPP2013/wpp2013.pdf](http://www.un.org/en/development/desa/population/publications/pdf/policy/WPP2013/wpp2013.pdf)
- Veenhoven, R. (2002). Why social policy needs subjective indicators. *Social Indicators Research*, 58, 33-45. <http://www2.eur.nl/fsw/research/veenhoven/index2.htm>.
- Veenhoven, R. (2007). How do we assess how happy we are? Tenets, implications and tenability of three theories. Paper conference on 'New Directions in the Study of Happiness: United States and International Perspectives', University of Notre Dame, USA, October 22-24.
- Walker A (2010) Ageing & quality of life in Europe. In: Dannerfer D, Philipson C (eds) The SAGE Handbook of Social Gerontology, 573-583. SAGE Publications, London.
- Yassin, S. M., Abu Samah, D'Silva, J.L, A, Shaffril & Mazuki, R. (2018). Well Being Concept, Index Measurement and Policy Implications. Serdang. Universiti Putra Malaysia Press.
- Zezza, A. & Tasciotti, L. (2010). Urban Agriculture, poverty, and food security: empirical evidence from a sample of developing countries. *Food Policy*, 35 (4), 265-273.
- Zulfikri Abd. Wahab (2015). Kesejahteraan Sosial Komuniti Pesisir: Kajian Kes di Kampung Nelayan Kandis Bachok dan Kampung Baru Nelayan Tumpat Kelantan. Tesis PhD, Universiti Malaysia Kelantan.

# **PHYSICAL EDUCATION AND HEALTH EDUCATION**



## Motivation and Creativity among Students: A Meta-analysis

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### ABSTRACT

*Motivation has always been regarded as the key role in students' creativity, this study based on the Amabile's componential theory of creativity, the motivation, especially intrinsic motivation is positively influence on creativity. "People are most creative when they feel motivated primarily by the interest, enjoyment, satisfaction, and challenge of the work itself, while not by extrinsic motivators." (Amabile, 2012). Nevertheless, there are many empirical studies that have yielded different results. This meta-analysis study aims to explore the relationship between the two dimensions of motivation (intrinsic and extrinsic) and creativity among students. To exploring the factors that lead to these different outcomes, provide a strong basis for the cultivation and development of students' creativity. A total of 79 independent effect sizes ( $n = 18966$ ) were obtained from 28 studies through literatures search. The heterogeneity test showed that the random effect model was suitable. At the result, intrinsic motivation was positively (middle effect size) correlated with creativity while negatively (weak effect size) correlated with extrinsic motivation for students' creative ability. The sub-group test showed that the relationship between intrinsic/extrinsic motivation and creativity among students was adjusted and influenced by motivational measurements (intrinsic motivation and extrinsic motivation), domains of creativity (general and specific). In general, intrinsic motivation is hard to control by outside, however, the extrinsic motivation could change. Scholars should pay more attention to the effect of intrinsic motivation, extrinsic motivation and its motivational synergy on creativity.*

**KEYWORDS:** Creativity, Intrinsic motivation, Extrinsic motivation, Student, Meta-analysis

## 1.0 INTRODUCTION

Many meta-analysis studies research motivation and creativity in social organization. (Jesus, Rus, Lens, & Imaginário, 2013; Liu, Jiang, Shalley, Keem, & Zhou, 2016). However, there has been no meta-analysis to analyze the relationship and influence between motivation and creativity among students. In addition, although a large number of empirical studies have proved that intrinsic motivation has a positive impact on creativity, while extrinsic motivation has a negative influence on creativity (Amabile, Hill, Hennessey, & Tigle, 1994; Chen, Himself, Kasof, Greenberger, & Dmitrieva, 2006; Prabhu, Sutton, & Sauser, 2008; Kinga, Paul & Stefan, 2014; Gajda, 2015; Ceci & Kumar, 2016; Alencar & Fleithf, 2016). However, few studies have shown different results. The reasons for these variances may derive from the sample size, different domains of creativity, and Instruments. Therefore, some problems need to figure out. What is the relationship between motivation and creativity in education? By what factors? This study uses meta-analytic method to explore the relationship between intrinsic/extrinsic motivation and creativity among students, and the moderating factors.

## 1.1 The measurements of creativity

This study researches by searching a vast of literature through meta-analysis, aiming to explore the causes of different effect sizes and provide a strong basis for the cultivation and development of students' creativity. Therefore, in this part, we are going to explore the causes of differences in creativity due to motivational differences by classifying creativity measurements. We have taken the categories of psychometric methods in creativity. Meanwhile, we also considered the data that we collected. Psychologists grouped it into four typical types: creative processes, personality and behavioral correlates of creativity, product-orientated creativity, and the creative-fostering environment (Plucker, 2010). Based on this category, this study was considered the effect of the measures of students' creativity by meta-analysis, we would classify the measurements of creativity into following five dimensions:

Creative thinking ability (CTA) focuses on the development of individual's divergent thinking (DT) or ideation in the creative process. This kind of measurement mainly based on the DT test that sorted for fluency, flexibility, originality, and elaboration (Plucker, 2010). The Torrance's tests of creative thinking (TTCT, 1974), It is still currently the most influential and widely used used in education to assess children's creative capacity (Baer, 1993; Wechsler, 2002; Torrance, 2003; Kim, 2006a; Ferrando, 2006). Verbal and Figural creativity always as two versions of TTCT (Torrance, 1974). Additionally, creative thinking is an essential aspect of problem-solving creatively (Duyar, Mina, & Owoh, 2019), DT in which cognitive processes are used to produce one or more possible solutions to a given problem (Plucker, 2010). Therefore, creative problem solving would be taken as a part of creative thinking ability in this study, such as the DT task of real-world problem-finding (Okuda et al., 1991). Furthermore, the Abedi Test of Creativity (ATC: Abedi, 2000) used to test pupils' creative self-beliefs in four domains of DT (fluency, flexibility, originality, and elaboration).

Creative personality traits (CPT) were regarded as an essential aspect of the development of individual creative thinking skills. Creative persons can offer a lot of creative-thinking responses on fluency, flexibility, originality, and elaboration (Freiberg-Hoffmann, Vigh, & Fernandez-Liporace, 2019). Such as the Gough's creative personality scale (CPS; Gough, 1979), which is widely employed in research on higher education (e.g. An & Runco, 2016; Barrantes-Vidal, Caparrós, & Obiols, 1999; Batey & Furnham, 2008; Dollinger, Palaskonis, & Pearson, 2004; Mack & Landau, 2015 Luescher, Barthelmeß, Kim, Richter, & Mittag, 2016). And "What kind of person are you?" (WKPAY; Torrance & Khatena, 1970) It worth to noted that we prefer to put the Kirton Adaption-Innovation Inventory (KAI; Kirton, 1976) into the group of creative personality traits, the theory of KAI is attempting to explain differences between adaptors (doing things better) and innovators (doing things differently), KAI may help leader or educator identifying creators' cognitive and problem-solving styles (Stum, 2009).

Creative behaviors and accomplishments (CBA) in this study were classified as one category according to the psychometric methods in creativity. [1] For students, their behavior could express their creativity better in activities, Individual's previous creative behaviors and accomplishments can reflect creative potential and achievement (Plucker, 2010). The creativity achievement questionnaire (CAQ; Carson, Peterson, & Higgins, 2005) was used to assess behavioral [2] creativity in domains of art (writing, music, visual arts, dance, and drama) and science. The creative activity and accomplishment checklist (CAAC), a part of the Runco creativity assessment battery (rCAB) that measures creative accomplishments in many life domains (e.g., artistic, scientific, technological). The Griffin and McDermott Creativity Checklist (GMCC; Griffin & McDermott, 1998) aim to test the creative accomplishments in domains of interests and arts. Furthermore, Madjar, Greenberg, and Chen's (2011) Radical/Incremental creative performance scales as self-reporting scale that aim to test the creativity of behavioral performance in the workplace (Madjar et al., 2011) and school (Tang & Ding, 2014). Zhou and George's (2001) self-rating creativity scale used to test individual creative behaviour in work, and it was modified by some scholars to test student's creativity (Sarwar & Panatik, 2017; Tan, Lau, Kung, & Kailsan, 2016; Gu, He & Liu, 2015; Tsai, Horng, Liu, Hu, & Chung, 2015).

Creative products (CPD) are the final products of individual creative activities and the most direct way to express individual creativity. Amabile's consensus assessment technique (CAT; 1979, 1982, 1983) is the most active creative products assessment in the wide range of sample type (Schoen, 2015; Shalley & Perry-Smith, 2001; Koestner, Ryan, Bernieri, & Holt, 1984). The criterion of CAT is based on the consistency of human's subjective assessment for creativity. That is, the techniques for assessing creative

products are based on subjective evaluation. Additionally, at the production level, some researchers tend to produced specific task, like drawing tasks (Rostan, 2010; Joy, 2008; Chen et al., 2006; Joy, 2005) as the real product creativity, they were mainly scored by experts with criteria in many previous creative studies (e.g., Chen et al., 2002; Getzels & Cskszentmihalyi, 1976; Sobel & Rothenberg, 1980; Sternberg & Lubart, 1995).

Integrated creative ability (ICA): Integrated and composited assessments of creativity were also used with high frequency. Such as the instances of Composite Creative Capacity (Ceci & Kumar, 2016), which include three instruments of Runco's (2007b) RIBS-3 for creative ideation; Griffin and McDermott's creativity checklist (GMCC; 1998) for creative accomplishment; Kumar, Kemmler, and Holman's CSQ-R for creative style. Besides, Kinga et al.,'s (2014) Self-reported creativity scale tested three dimensions of creativity: The Short Scale of Creative Self (SSCS; Karwawski, Lebeda & Wisniewska, in press), and self-reported creativity scale with two factors: creative self-efficacy and Creative behavior (Yu, 2013).

## 1.2 The relationship between creativity and motivation among students

The researchers explored the important role of intrinsic and extrinsic motivation in creativity through empirical research. On the one hand, Although a large number of empirical studies have proved that intrinsic motivation has a positive impact on creativity, while extrinsic motivation has a negative influence on creativity (Amabile et al., 1994; Chen et al., 2006; Prabhu et al., 2008; Kinga et al., 2014; Gajda, 2015; Ceci & Kumar, 2016; Alencar & Fleithf, 2016). On the other hand, part of the researchers got the opposite conclusions. For example, Lew (2012) got a negative impact on intrinsic motivation but a positive influence on young children's (5-6 years old) creative thinking ability. Ruiter and Johnson's (2015) empirical evidence has proved that both intrinsic and extrinsic motivation has negative to undergraduate student's creative achievement. Several researchers have demonstrated in their studies that external motivation has a positive influence on creativity-related ability. (Choi, 2004; Sung & Choi, 2009; Cho & Lin, 2010; Putwain, Kearsley & Symes, 2012; Agnoli et al., 2018). Although the relationship between them is controversial, it cannot be denied that motivation has a positive effect on creativity, especially intrinsic motivation. Besides, the educational intervention of students' motivation is an important way to enhance individual creativity. Research shows that motivational intervention can effectively improve individual creative thinking ability, creative behaviour, creative performance and creative product-orientated ability (e.g., Stanko-Kaczmarek, 2012; Alencar & Fleithf, 2016; Chen et al., 2006; Choi, Lee, & Chae, 2012; Eisenberg & Thompson, 2011; Eisenberger & Aselage, 2009; Koestner et al., 1984). Therefore, positive motivational education intervention is undoubtedly an effective way to improve students' creativity.

## 1.3 Moderators

During in the data collection process, the motivational scale, different dimensions of creativity, sample stage of education, school climate, culture background, and some other factors, and finally there were significant differences in the relative value of motivation and creativity, however, considering some factors to collect the information is not complete, so we ultimately chose information complete motivation scale and the domains of creativity.

*Measurements.* Motivational measurements influence correlation value ( $r$ ) of the relationship between motivation and creativity. WPI and extended versions, Cho and Lin's (2010) Motivation scale, Hong's (2001, 2004) SAQ-IM, Boruchovitch's (2008a) learning motivation assessment scale for university students, were used to test the influence of intrinsic, extrinsic motivation or both on creativity; Cacioppo, Petty, and Kao's (1984) NCS (Need for Cognition Scale) was used to measure the extent to which cognitive activities are desirable and essential to the participant; As a result, the standards of motivation scales are not uniform, which leading to different research results, so that cannot be directly compared. Eisenberg and Miller (1987) pointed out that different measurement methods directly affect the strength of the relationship between variables. Therefore, this study hypothesizes that the relationship between motivation and creativity may be moderated by various measuring tools.

*Domains of creativity:* Creativity has always been controversial in both domains of general and specific in the past few decades (Sternberg, Grigorenko, & Singer, 2004). Domain-general in creativity is regarded as the power of tests of creative thinking to predict subsequent creative achievement (Plucker, 1999a; Sternberg, 1989). The domain-specificity in creativity has shown a low correlation among scorings

of creative performance in different domains (Chen et al., 2006). Based on this meta-analysis investigation, we believe that this controversy mainly caused by different research objectives and measurement tools. Creativity related outcome in general (e.g., Martinsen & Furnham, 2019; Agnoli et al., 2018; Tan et al., 2016; Liu, Zhang, Zhang, Lee, Wang & Brownell, 2013; Gajda, 2015) and specific domains (Bishara, 2016; Wu & Marsono, 2016; Cho & Lin, 2010; Chen et al., 2006; Joy, 2005, 2008) are varied among student (e.g. Artistics, mathematics, engineering, science et al.). Therefore, this study hypothesizes those subject domains may moderate the relationship between motivation and creativity.

## 2.0 METHOD

### 2.1 Criteria for Inclusion

To be included in the meta-analysis, the studies selected had to meet several criteria: (a) to examine creativity from the perspective of a verbal and nonverbal, verbal creativity such as creative thinking ability (divergent thinking test by using Torrance Test of Creative Thinking, Torrance, 1974 or Task of real-world problem finding, Okuda et al., 1991); Nonverbal creativity like creative performance (Amabile's Consensual Assessment Technique, 1982) or creative behaviour (Creative Activities Check List, Okuda, Runco, & Berger, 1991). (b) to include the measures of motivation (Amabile's WPI, 1983 and other intrinsic and extrinsic motivation scales). (c) to exclude the studies of social organization (like the terms: leadership, employee, workplace et al.) as opposed to education. (d) to use a sample from the general, nonclinical population; (e) to examine the two concepts at an individual level of analysis; and (f) to report the Pearson product-moment correlation ("r") between the concepts and the necessary statistics to compute an effect size.

### 2.2 Selection of the Studies

The list of studies for this meta-analysis was conducted a computerized search of online databases: Web of Science, Scopus, ScienceDirect, ProQuest, and PsycINFO. With research article and conference paper by using simultaneously the keywords: creativity, innovation, and motivation, in combination with the terms creative problem solving, creative thinking, creative performance, creative outcome, creative achievement, Manually search of journals: The Creativity Research Journal and Journal of Creativity Behaviour, And conduct literature follow-up with Google Scholar (see. Figure 1).

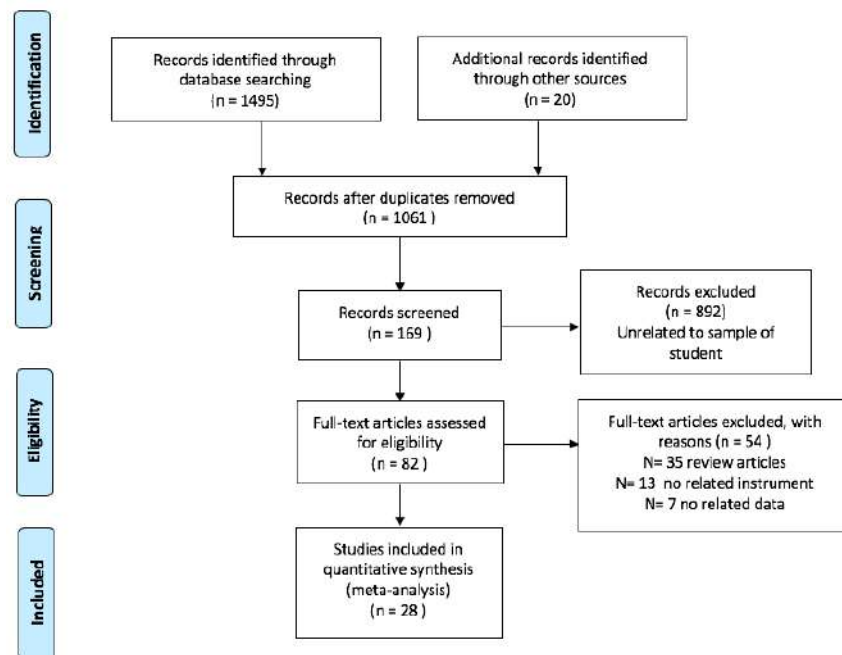


Figure 1. Prisma flow diagram of meta-analysis

## 2.3 Coding Procedure

By referring to previous meta-analysis articles, the literatures included in the meta-analysis were coded as follows: literature information (author name and published time), sample size, motivational measurements (intrinsic and extrinsic motivation) the result variable dimensions (Creative thinking ability, Creative personality traits, Creative behaviours and accomplishments, Product creativity, Integrated creative ability). The effect size of the literature is coded as one effect size per independent sample. If a study reports multiple independent samples at the same time, it will be coded separately to generate multiple independent effect sizes, resulting in 79 independent effect sizes in total. Finally, 28 articles were included in the meta-analysis, all in English (see table 1).

Table 1. Summary of studies providing information for meta-analysis

Author (Published time)	Outcome	N	Measurement	Domains of creativity	Corr.(r)
Agnoli et al., 2018 E1	CBA	92	WPI-IM	S	0.120
Agnoli et al., 2018 E2	CBA	92	WPI-EM	S	0.160
Agnoli et al., 2018 E3	CBA	92	WPI-IM	G	-0.030
Agnoli et al., 2018 E4	CBA	92	WPI-EM	G	0.130
Meng & Zhao, 2018 E1	CPD	677	IMS	S	0.598
Meng & Zhao, 2018 E2	CTA	677	IMS	S	0.165
Meng, Tan, & Li, 2017	CPD	875	IMS	S	0.654
Oriol et al., 2016	CPT	428	IMS	S	0.299
Tan et al., 2016	CBA	197	IMS	G	0.530
Ceci & Kumar, 2016 E1	ICA	419	WPI-IM	G	0.360
Ceci & Kumar, 2016 E2	ICA	419	WPI-EM	G	-0.070
Gajda, 2015 E1	CTA	1106	WPI-IM	G	0.160
Gajda, 2015 E2	CTA	1106	WPI-EM	G	-0.090
Gu et al., 2015	CBA	216	IMS	S	0.510
Ruiter & Johnson, 2015 E1	CBA	378	IMS	S	-0.014
Ruiter & Johnson, 2015 E2	CBA	378	EMS	S	-0.092
Schoen, 2015 E1	CPD	183	IMS	S	0.060
Mack & Landau, 2015 E1	CPT	256	WPI-IM	S	0.289
Mack & Landau, 2015 E2	CPT	256	WPI-EM	S	0.016
Tsai et al., 2015	CBA	591	IMS	G	0.672
Tang & Ding, 2014	CBA	233	IMS	S	0.650
Kinga et al., 2014 E1	CBA	182	WPI-IM	S	0.365
Kinga et al., 2014 E2	ICA	182	WPI-EM	S	-0.090
Choi et al., 2013	CTA	304	IMS	G	0.5995
Hong & Rui-min, 2012	CBA	258	WPI-IM	S	0.466
Lew, 2012 E1	ICA	127	IMS	G	-0.111
Lew, 2012 E2	ICA	127	EMS	G	0.087
Eisenberg & Thompson, 2011	CPD	16	IMS	S	0.410
Cho & Lin, 2010 E1	CTA	733	IMS	S	0.290
Cho & Lin, 2010 E2	CTA	733	EMS	S	0.140
Cho & Lin, 2010 E3	CTA	236	IMS	S	0.390
Cho & Lin, 2010 E4	CTA	236	EMS	S	0.280
Cho & Lin, 2010 E5	CTA	328	IMS	S	0.300
Cho & Lin, 2010 E6	CTA	328	EMS	S	0.080
Cho & Lin, 2010 E7	CTA	169	IMS	S	0.013
Cho & Lin, 2010 E8	CTA	169	EMS	S	0.080
Sung & Choi, 2009 E1	CBA	304	IMS	S	0.090
Sung & Choi, 2009 E2	CBA	304	EMS	S	0.110
Eisenberg & Aselage, 2009 Study 3	CBA	405	IMS	S	0.090
Prabhu et al., 2008 E1	CPT	124	WPI-IM	G	0.390
Prabhu et al., 2008 E2	CPT	124	WPI-EM	G	-0.200
Chen et al., 2006 E1	CPD	73	WPI-IM & NCS	G	0.260
Chen et al., 2006 E2	CPD	73	WPI-EM	G	-0.210
Chen et al., 2006 E3	CTA	73	WPI-IM & NCS	G	0.370
Chen et al., 2006 E4	CTA	73	WPI-EM	G	-0.180
Chen et al., 2006 E5	CTA	73	WPI-IM & NCS	G	0.150
Chen et al., 2006 E6	CTA	73	WPI-EM	G	-0.290

Author (Published time)	Outcome	N	Measurement	Domains of creativity	Corr.(r)
Chen et al., 2006 E7	CTA	73	WPI-IM & NCS	G	0.360
Chen et al., 2006 E8	CTA	73	WPI-EM	G	-0.350
Choi, 2004 (Time2) E1	CBA	344	WPI-IM	G	0.230
Choi, 2004 (Time2) E2	CBA	344	WPI-EM	G	0.140
Choi, 2004 (Time2) E3	CBA	331	WPI-IM	G	0.110
Choi, 2004 (Time2) E4	CBA	331	WPI-EM	G	0.170
Shalley & Perry-Smith, 2001	CPD	78	IMS	G	0.160
Conti et al., 2001 E1	CBA	143	IMS	S	0.510
Conti et al., 2001 E2	CBA	143	EMS	S	0.340
Amabile et al., 1994 E1	CPT	284	WPI-IM	G	0.380
Amabile et al., 1994 E2	CPT	284	WPI-EM	G	-0.390
Amabile et al., 1994 E3	CPT	35	WPI-IM	G	0.250
Amabile et al., 1994 E4	CPT	35	WPI-EM	G	-0.150
Amabile et al., 1994 E5	CPD	81	WPI-IM	S	0.290
Amabile et al., 1994 E6	CPD	81	WPI-EM	S	-0.180
Amabile et al., 1994 E7	CPD	67	WPI-IM	S	0.450
Amabile et al., 1994 E8	CPD	67	WPI-EM	S	-0.150
Amabile et al., 1994 E9	CPD	108	WPI-IM	S	0.290
Amabile et al., 1994 E10	CPD	108	WPI-EM	S	-0.180
Amabile et al., 1994 E11	CPD	29	WPI-IM	S	0.120
Amabile et al., 1994 E12	CPD	29	WPI-EM	S	-0.300
Amabile et al., 1994 E13	CPD	95	WPI-IM	S	0.310
Amabile et al., 1994 E14	CPD	95	WPI-EM	S	-0.230
Amabile et al., 1994 E15	CBA	40	WPI-IM	G	0.450
Amabile et al., 1994 E16	CBA	40	WPI-EM	G	-0.150
Amabile et al., 1994 E17	CPD	450	WPI-IM	G	0.180
Amabile et al., 1994 E18	CPD	450	WPI-EM	G	-0.190
Amabile et al., 1994 E19	CBA	29	WPI-IM	S	0.580
Amabile et al., 1994 E20	CBA	29	WPI-EM	S	-0.070
Amabile et al., 1994 E21	CBA	18	WPI-IM	S	0.590
Amabile et al., 1994 E22	CBA	18	WPI-EM	S	-0.330
Koestner et al., 1984	CPD	44	IMS	S	0.070

Note. (1)WPI = work preference inventory; IM = intrinsic motivation; EM = extrinsic motivation; NCS = need for cognition Scale; (2) CTA = creative thinking ability; CPT = creative personality traits; CBA = creative behaviours and accomplishments; CPD = product creativity; ICA = integrated creative ability; (3) S = Specific domain of creativity; G = General domain of creativity; (4) The same study containing two or more independent samples is distinguished by E1, E2, E3, ...

## 2.4 Analysis Strategy

### 2.4.1 Calculating the Effect Size

In this study, CMA 2.0 (Comprehensive meta-analysis 2.0) professional software was used for meta-analysis. Correlation coefficient is used as effect quantity to integrate the relationship between them. the correlation coefficient  $r$  value was converted to Fisher-Z value for meta-analysis.

### 2.4.2 Model selection and heterogeneity test

At present, the meta-analysis mainly adopts the fixed effect model or random-effect model. The fixed-effect model assumes that there is a true effect size in all studies. Random-effect models suggest that meta-analysis studies have more than one true effect size, which varies with different research populations and tools (Borenstein, Hedges, Higgins, & Rothstein, 2009). Therefore, the random effect model was used for meta-analysis in this study. In addition, the rationality of the random effect model selection is further verified through the heterogeneity test. The heterogeneity test methods mainly include the Q test, I<sup>2</sup> test, and H test. Q test is based on the test of the total variation. The hypothesis effect size obeys chi-square distribution, and  $p < 0.05$  indicates significant heterogeneity. I<sup>2</sup> test mainly reflects the proportion of true variation of effect size in the total variation. According to previous views, I<sup>2</sup> values of 25%, 50%, and 75% can be regarded as low, medium and high heterogeneity boundaries (Higgins, Thompson, Deeks, & Altman,

2003). H test is the correction value of Q effect quantity, and  $H > 1.5$  indicates high heterogeneity between studies.

### 2.4.3 Publication bias

Publication bias means that published research literature is not a systematic and comprehensive representation of research that has been done in the field (Rothstein, Sutton, & Borenstein, 2005). In this meta-analysis, we used a funnel plot, Rosenthal's Fail-safe N test, and Egger's test to test publication bias further.

## 3.0 RESULT

### 3.1. Publication bias test

A funnel plot was used to check the publication deviation of this meta-analysis at first. From the figure of the funnel plot, the research literature on the total score of motivation and creativity (Figure 2), it is distributed on both sides of the overall effect size, these figures are indicating that there is no serious publication bias in the research on motivation and creativity and their indicators. However, to guarantee the objectivity of the results. Rosenthal's Classic fail-safe N and Egger's Intercept still required for more accurate examination (table 2).

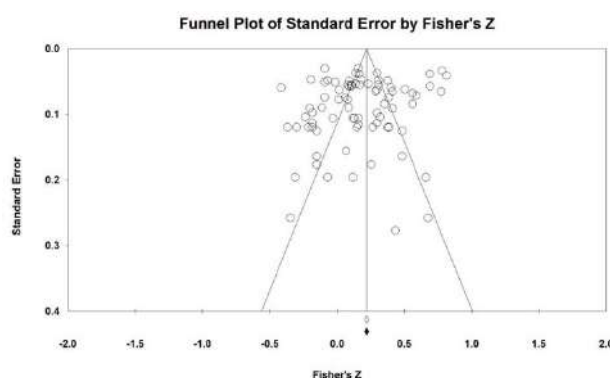


Figure 2. The funnel plot of relationship between motivation and total creativity.

Table 2. The results of publication bias

Outcomes	K	Classic Fail-safe N	FSR	Egger's Intercept	SE	LL	UL	p
Creativity	79	39900	98.52	-1.59	1.13	-3.84	0.66	0.16

Note: LL and UL represent lower and upper limits of 95% confidence intervals of the Egger's Intercept; Creativity means the total creativity

The results of table 2 show that the fail-safe coefficient of motivation and the total creativity is 39900. That is, an additional amount of research literature is needed to deny the vital relationship between motivation and creativity and its indicators. The ratios of the fail-safe coefficient larger than 1. it indicated that the samples are great representative and no publication bias. The Egger's Intercept ( $p = 0.16$ ) which are not significantly different from zero ( $p > 0.05$ ) indicating that there is no publication bias in the indicators.

### 3.2 Heterogeneity test

The purpose of the heterogeneity test is to test whether the effect size measured between studies is heterogeneous. This study carried out a heterogeneity test on the relationship between motivation and creativity, its subtypes, and the results were shown in table 3. The results of table 3 show that the Q test of effect values is significant among all studies ( $p < 0.001$ ), indicating that all effect values are heterogeneous in the meta-analysis. The I-squared value ranges from 93.21% to 96.49%, indicating that the true variation of effect size accounts for 93.21% to 96.49% of the total variation. The proportion of random error is small.

$H > 1.5$ , indicating heterogeneity among researches. The value of Tau squared is between 4.0% and 16.6%, meaning that 4.0% and 16.6% variation of effect size between studies can be used to calculate weights.

Table 3. The result of heterogeneity test

Outcomes	K	Q	df	p	I <sup>2</sup>	Tau-squared	H-squared
Creativity	79	1597.39	78	<0.001	95.12	0.083	20.48
CTA	18	250.41	17	<0.001	93.21	0.040	14.73
CPT	9	152.93	8	<0.001	94.77	0.095	19.11
CBA	27	463.35	26	<0.001	94.39	0.084	17.82
CPD	27	541.90	19	<0.001	96.49	0.166	28.52
ICA	5	55.73	4	<0.001	92.82	0.055	13.93

### 3.3 Subgroups test

The heterogeneity test found that the effect size of each study showed high heterogeneity, and there might be significant moderating variables. Subgroup testing is one of the most commonly used methods to explore the sources of heterogeneity. This study focused on the moderating effects of motivational measurements (intrinsic and extrinsic motivation), educational stages (elementary, middle, high, undergraduate and postgraduate) and domains of creativity (general and specific) on the relationship between motivation and creativity (table 4, table 5).

Table 4. The regulating effect of motivational instrument

Outcomes	Instrument	k	r	95%CI	I <sup>2</sup>	Q <sub>w</sub>	Q <sub>b</sub>	p
Creativity	IM	47	0.32	0.25~0.39	94.06	975.06	622.33	0.000
	EM	32	-0.05	-0.11~0.02	84.60			
CTA	IM	10	0.28	0.18~0.39	90.34	156.10	94.31	0.000
	EM	8	-0.15	-0.15~0.11	88.88			
CPT	IM	5	0.33	0.27~0.38	0.00	27.21	125.72	0.000
	EM	4	-0.20	-0.40~0.04	87.74			
CBA	IM	17	0.36	0.22~0.49	95.34	375.26	88.10	0.000
	EM	10	0.09	-0.09~0.19	71.52			
CPD	IM	13	0.32	0.15~0.46	94.22	208.42	333.47	0.000
	EM	7	-0.19	-0.26~0.13	0.00			
ICA	IM	2	0.14	-0.33~0.55	95.61	25.57	30.16	0.000
	EM	3	-0.04	-0.13~0.05	28.32			

Note: Random effect model is adopted; Q<sub>w</sub> represents heterogeneity within the group. Q<sub>b</sub> represents heterogeneity between the group; The same below.

The results of table 4 has shown that the motivational measurements significantly regulated total creativity (Q<sub>b</sub> = 622.33,  $p < 0.05$ ), creative thinking ability (Q<sub>b</sub> = 94.31,  $p < 0.05$ ), creative personality traits (Q<sub>b</sub> = 125.72,  $p < 0.05$ ), creative behaviours and accomplishments (Q<sub>b</sub> = 88.10,  $p < 0.05$ ), product creativity (Q<sub>b</sub> = 333.47,  $p < 0.05$ ), and integrated creative ability (Q<sub>b</sub> = 30.16,  $p < 0.05$ ). The relationship between motivation and creativity and each dimension measured by IM was relatively high.

Table 5. The regulating effect of domains of creativity

Outcomes	Domains of creativity	k	r	95%CI	I <sup>2</sup>	Q <sub>w</sub>	Q <sub>b</sub>	p
Creativity	G	34	0.12	0.02~0.23	95.64	1527.81	69.58	0.000
	S	45	0.21	0.13~0.29	94.29			
CTA	G	9	0.10	-0.11~0.30	95.85	232.18	18.23	0.000
	S	9	0.20	0.13~0.27	79.62			
CPT	G	6	0.05	-0.30~0.38	95.84	135.53	17.40	0.000
	S	3	0.21	0.03~0.37	86.96			
CBA	G	9	0.20	0.07~0.30	82.87	445.68	17.68	0.000
	S	18	0.31	0.14~0.44	95.74			
CPD	G	5	0.04	-0.18~0.25	90.32	369.89	172.01	0.000
	S	15	0.17	-0.04~0.37	95.74			
ICA	G	3	0.13	-0.17~0.41	95.24	42.07	13.67	0.000
	S	2	-0.10	-0.21~0.01	0.00			



The results of table 6 shows that domains of creativity significantly regulate total creativity ( $Q_b = 69.58$ ,  $p < 0.05$ ), creative thinking ability ( $Q_b = 18.23$ ,  $p < 0.05$ ), creative personality traits ( $Q_b = 17.40$ ,  $p < 0.05$ ), creative behaviours and accomplishments ( $Q_b = 17.68$ ,  $p < 0.05$ ), product creativity ( $Q_b = 172.01$ ,  $p < 0.05$ ), and integrated creative ability ( $Q_b = 13.67$ ,  $p < 0.05$ ). At the all the dimensions in creative ability. The specific domain of creativity shows a higher correlation than the general domain except for the dimension of ICA, it might due to there is a small account of study sample.

## 4.0 DISCUSSION

In general, the effect size of the relationship between total motivation (intrinsic and extrinsic) and total creativity ( $r = 0.17$ ) has shown a weak correlation. However, the correlation between total creativity and intrinsic motivation ( $r = 0.32$ ), extrinsic motivation ( $r = -0.05$ ). It indicated that motivation in two dimensions have significantly moderating the total creativity and other dimensions in creativity. Therefore, there are existing one or more factors that moderating the relationship between motivation (intrinsic and extrinsic) and creativity.

### 4.1 Moderating effect of the relationship between motivation and creativity

#### 4.1.1 Measurements

The results of meta-analysis showed that the total creativity ( $Q_b = 622.33$ ,  $p < 0.05$ ), CTA ( $Q_b = 94.31$ ,  $p < 0.05$ ), CPT ( $Q_b = 125.72$ ,  $p < 0.05$ ), CBA ( $Q_b = 88.10$ ,  $p < 0.05$ ), CPD ( $Q_b = 333.47$ ,  $p < 0.05$ ), and ICA ( $Q_b = 30.16$ ,  $p < 0.05$ ) were the regulating variables. Among them, IM scale has the greatest influence on the relationship between the total score of intrinsic motivation and creativity ( $r = 0.32$ ), CTA ( $r = 0.28$ ), CPT ( $r = 0.33$ ), CBA ( $r = 0.36$ ), CPD ( $r = 0.32$ ) and ICA ( $r = 0.14$ ). EM scale has the greatest influence on the relationship between the total score of extrinsic motivation and creativity ( $r = -0.05$ ), CTA ( $r = -0.15$ ), CPT ( $r = -0.20$ ), CBA ( $r = 0.09$ ), CPD ( $r = -0.19$ ) and ICA ( $r = -0.04$ ). The influence degree of IM scale on the relationship between intrinsic motivation and total creativity ( $r = 0.32$ ) is positive and larger than that of EM scale, while extrinsic motivation shows negatively ( $r = -0.05$ ). Different motivational measurement will affect the relationship between motivation and creativity and its dimension.

The reasons for the above results may be as follows. Firstly, the contents of each scale are different. Amabile and her colleagues' WPI (1987b; 1978c; 1994) was the most widely used to test motivation. It includes two subscales, intrinsic and extrinsic motivation scales. The intrinsic motivation includes 15-item of the degree test of individual challenge and enjoyment. And the 15-item extrinsic motivation scale was comprised of outward and compensation. Gargallo et al (2009)' s 3 items of intrinsic motivation in is CEVEAPEU questionnaire was used to test university students feel for their studies. The degree of interest in the task and stress as the content of intrinsic motivation test in the Eisenberg and Thompson's study (2011). And in the Chen et al. (2006)'s study, he used the Need for cognition Scale (NCS; Cacioppo, Petty, & Kao, 1984) and WPI-IM scale to test students' intrinsic motivation. NCS was used to test the cognition style in creative tasks. Jin (2002)'s Intrinsic/extrinsic motivation test, IM tests the interest, pleasure, satisfaction, and challenge, and EM includes social reward (compliment and award, material reward). Cho and Lin's study (2010) used their motivation scale to test the feeling of success about 9-item IM and 8-item EM. Ruiter and Johnson 's study (2015), the EM scale consist of few scales: dominance motivation, creative ambitions, life aspirations, perceptions of status relative to other, and social comparison orientation. Secondly, different motivational measurements have a different theoretical basis. Such as Amabile's WPI, IM scale (Amabile, 1985) and IM scale (Tierney, Farmer & Graen, 1999) were based on Amabile's theory of componential creativity (1983a, 1983b, 1988). Cacioppo et al.'s NCS was based on their NCS theory (1984). The IM test in a study of Eisenberg and Thompson's (2011) was based on the self-determination theory (Ryan & Deci, 2000). Thirdly, although a large number of empirical studies have proved that intrinsic motivation has a positive impact on creativity, while extrinsic motivation has a negative influence on creativity (Amabile, Hill, Hennessey, & Tigle, 1994; Chen et al., 2006; Prabhu, Sutton, & Sauser, 2008; Kinga et al., 2014; Gajda, 2015; Ceci & Kumar, 2016; Alencar & Fleithf, 2016). Lew (2012) also got a negative impact of intrinsic motivation on young children's (5-6 years old) creative thinking ability; meanwhile, she got a positive influence outcome of extrinsic motivation. Ruiter and Johnson's (2015) empirical evidence has proved that both intrinsic and extrinsic motivation has a negative impact on

undergraduate student's creative achievement in the psychological course. Other researchers have demonstrated in their studies that external motivation has a positive influence on creativity-related ability. (Choi, 2004; Sung & Choi, 2009; Cho & Lin, 2010; Putwain et al., 2012; Agnoli et al., 2018). We consider it in the aspect of the correlative level, and we could get some interesting information. A part of data support that correlation between intrinsic motivation and creative ability among students is weak or no significant (Shalley & Perry-Smith, 2001; Choi, 2004; Chen et al., 2006; Eisenberg & Aselage, 2009; Sung & Choi, 2009; Cho & Lin, 2010; Schoen, 2015; Gajda, 2015; Meng & Zhao, 2018; et al., 2018). Contrast that with the extrinsic motivation, some low-level data were supported (Cho & Lin, 2010; Putwain et al., 2012).

Therefore, different measurements contain different contents, meanings, and theoretical construction basis, which affect the relationship between motivation and creativity; measures also regulate the relationship between them. Future research needs to choose the best measurement to explore the essential relationship between motivation at two dimensions and creativity.

#### 4.1.2 Domains in creativity

The results of meta-analysis have shown that the domains in creativity were moderated by total creativity ( $Q_b = 69.58$ ,  $p < 0.05$ ), CAT ( $Q_b = 18.23$ ,  $p < 0.05$ ), CPT ( $Q_b = 17.40$ ,  $p < 0.05$ ). CBA ( $Q_b = 17.68$ ,  $p < 0.05$ ), CPD ( $Q_b = 172.01$ ,  $p < 0.05$ ), and ICA ( $Q_b = 13.67$ ,  $p < 0.05$ ). In this study, we take the dichotomous domain in creativity, domain generality and specificity. The heterogeneity test above has proved that creativity in the two domains has a strong moderating effect on the relationship between motivation and creativity in different dimensions.

The reasons for the above results may be as follows. Firstly, the different dimensions in creativity play a different role in creativity in various domains. Domain-generality of creativity has been supported by evidence such as the power of tests of creative thinking (i.e., Torrance's TTCT) to predict subsequent creative achievement (Plucker, 1999a; Sternberg, 1989). While domain-specificity derives from the low correlations among ratings of creative performance or production in different domains (i.e., artistic, mathematic, drawing et al.) (Chen et al., 2006), more evidence is lacking to support in the domain of specificity. Secondly, motivation also plays a different role in creativity in different domains. Research has shown that creative performance in various domains is promoted by state intrinsic motivation (Amabile, 1996) although the effects of state extrinsic motivation are less well understood (Eisenberger & Shanock, 2003). In several different domains, creative behavior has been associated with stable individual differences in intrinsic and extrinsic motivational orientations in schoolwork and employment (Amabile, Hill, Hennessey, & Tighe, 1994; Kaufman, 2002).

There is no doubt that the two domains of creativity significantly moderated the relationship between motivation and creativity. In further research, the construction of this theory should be strengthened, which will be of great value to the research on motivation and creativity in the field of education.

#### REFERENCE

- Agnoli, S., Runco, M. A., Kirsch, C., & Corazza, G. E. (2018). The role of motivation in the prediction of creative achievement inside and outside of school environment. *Thinking Skills and Creativity*, 28(May), 167–176. <https://doi.org/10.1016/j.tsc.2018.05.005>
- Ahmad Ifzal, Zafar Mueen Aizaz, S. K. (2015). Authentic Leadership Style and Academic's Creativity in Higher Education Institutions: Intrinsic Motivation and Mood as Mediators. *Transylvanian Review of Administrative Sciences*, 46(E), 5–19.
- Amabile, T. M. (1982). Social psychology of creativity: A consensual assessment technique. *Journal of Personality and Social Psychology*, 43(5), 997–1013. <https://doi.org/10.1037/0022-3514.43.5.997>
- Amabile, T. M., Hill, K. G., Hennessey, B. A., & Tighe, E. M. (1994). The Work Preference Inventory: Assessing Intrinsic and Extrinsic Motivational Orientations. *Journal of Personality and Social Psychology*, 66(5), 950–967. <https://doi.org/10.1037/0022-3514.66.5.950>
- Cacioppo, J. T., Petty, R. E., & Kao, C. F. (1984). The Efficient Assessment of Need for Cognition. *Journal of Personality Assessment*, 48(3), 306–307. [https://doi.org/10.1207/s15327752jpa4803\\_13](https://doi.org/10.1207/s15327752jpa4803_13)
- Ceci, M. W., & Kumar, V. K. (2016). A Correlational Study of Creativity, Happiness, Motivation, and Stress from Creative Pursuits. *Journal of Happiness Studies*, 17(2), 609–626.

- <https://doi.org/10.1007/s10902-015-9615-y>
- Chen Chuansheng, Himself Amy, Kasof Joseph, Greenberg Ellen, D. J. (2006). Boundless Creativity: Evidence for the Domain Generality of Individual Differences in Creativity. *Journal of Creative Behavior*, 40(3), 179–199.
- Chen, Y. (2017). The Relationship between Undergraduate Students' Creative Ability, Career Self-Management and Employ Ability. *Advances in Social Sciences*, 06(07), 964–969.  
<https://doi.org/10.12677/ass.2017.67138>
- Cho, S., & Lin, C. Y. (2011). Influence of family processes, motivation, and beliefs about intelligence on creative problem solving of scientifically talented individuals. *Roeper Review*, 33(1), 46–58.  
<https://doi.org/10.1080/02783193.2011.530206>
- Choi, D. Y., Lee, K. C., & Chae, S. W. (2012). The effect of individual psychological characteristics on creativity revelation: Emphasis with psychological empowerment and intrinsic motivation. *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 7670 LNAI, 130–139. [https://doi.org/10.1007/978-3-642-35139-6\\_13](https://doi.org/10.1007/978-3-642-35139-6_13)
- Conti, R., Collins, M. A., & Picariello, M. L. (2001). The impact of competition on intrinsic motivation and creativity: Considering gender, gender segregation and gender role orientation. *Personality and Individual Differences*, 31(8), 1273–1289. [https://doi.org/10.1016/S0191-8869\(00\)00217-8](https://doi.org/10.1016/S0191-8869(00)00217-8)
- Deci Edward L., & R. R. M. (1985). The General Causality Orientation Scale: Self-Determination in Personality. *Journal of Research in Personality*, 19, 109–134.
- Deci, E. L., & Ryan, R. M. (1994). Promoting Self-determined Education. *Scandinavian Journal of Educational Research*, 38(1), 3–14. <https://doi.org/10.1080/0031383940380101>
- Deci, E. L., Ryan, R. M., & Koestner, R. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin*, 125(6), 627–668.  
<https://doi.org/10.1037/0033-2909.125.6.627>
- Duyar, I., T., Mina, D. K., & O. S. J. (2019). Promoting Student Creative Problem-Solving Skills: Do Principal Instructional Leadership and Teacher Creative Practices Matter? *Vocational Identity and Career Construction in Education*, 78–99. <https://doi.org/10.4018/978-1-5225-7772-0.ch005>
- Copyright
- Eisenberg, J., & Thompson, W. F. (2011). The effects of competition on improvisers' motivation, stress, and creative performance. *Creativity Research Journal*, 23(2), 129–136.  
<https://doi.org/10.1080/10400419.2011.571185>
- Eisenberger, R., Rhoades, L., & Cameron, J. (1999). Does pay for performance increase or decrease perceived self-determination and intrinsic motivation? *Journal of Personality and Social Psychology*, 77(5), 1026–1040. <https://doi.org/10.1037/0022-3514.77.5.1026>
- Eisenberger Robert, & A. J. (2009). Incremental effects of reward on experienced performance pressure: positive outcomes for intrinsic interest and creativity. *Journal of Organizational Behavior*, 30, 95–117. <https://doi.org/10.1002/job.543>
- Farmer, S. M., Tierney, P., & Kung-Mcintyre, K. (2003). Employee creativity in Taiwan: An application of role identity theory. *Academy of Management Journal*, 46(5), 618–630.  
<https://doi.org/10.2307/30040653>
- Gajda, A. (2015). The relationship and moderators of school achievement and creativity at different educational stages. *Thinking Skills and Creativity*, 19, 246–259.  
<https://doi.org/10.1016/j.tsc.2015.12.004>
- Gough, H. G. (1979). A creative personality scale for the adjective check list. *Journal of Personality and Social Psychology*, 37(8), 1398–1405.
- Gu Jibao, H. C. & L. H. (2015). Supervisory styles and graduate student creativity: the mediating roles of creative self-efficacy and intrinsic motivation. *Studies in Higher Education*, 1–22.  
<https://doi.org/10.1080/03075079.2015.1072149>
- Hennessey, B. A., & Amabile, T. M. (1998). Reality, intrinsic motivation, and creativity. *American Psychologist*, 53(6), 674–675. <https://doi.org/10.1037/0003-066x.53.6.674>
- Kinga, S., Paul, M., & Şefan, S. (2015). Associations Between Hexaco Model of Personality Structure, Motivational Factors and Self-reported Creativity Among Architecture Students. *Procedia - Social and Behavioral Sciences*, 187, 130–135. <https://doi.org/10.1016/j.sbspro.2015.03.025>
- Kim, K. H. (2006). Can we trust creativity tests? A review of the Torrance Tests of Creative Thinking (TTCT). *Creativity Research Journal*, 18(1), 3–14. [https://doi.org/10.1207/s15326934crj1801\\_2](https://doi.org/10.1207/s15326934crj1801_2)

- Kim, H.-H., & Choi, Y.-H. (2015). Effects of Creativity Instruction Activities on Academic Motivation and Career Maturity of University Students: Based on NFTM-TRIZ Creativity Education Model. *Journal of Digital Convergence*, 13(9), 277–286. <https://doi.org/10.14400/jdc.2015.13.9.277>
- Kirton, M. (1976). Adaption and Innovation: A Description and Measure. *Journal of Applied Psychology*, 61(10), 622–629.
- Koestner, R., Ryan, R. M., Bernieri, F., & Holt, K. (1984). Setting limits on children's behavior: The differential effects of controlling vs. informational styles on intrinsic motivation and creativity. *Journal of Personality*, 52(3), 233–248. <https://doi.org/10.1111/j.1467-6494.1984.tb00879.x>
- Liu, D., Jiang, K., Shalley, C. E., Keem, S., & Zhou, J. (2016). Motivational mechanisms of employee creativity: A meta-analytic examination and theoretical extension of the creativity literature. *Organizational Behavior and Human Decision Processes*, 137, 236–263. <https://doi.org/10.1016/j.obhdp.2016.08.001>
- Liu, G., Zhang, S., Zhang, J., Lee, C., Wang, Y., & Brownell, M. (2013). Autonomous Motivation and Chinese Adolescents' Creative Thinking: The Moderating Role of Parental Involvement. *Creativity Research Journal*, 25(4), 446–456. <https://doi.org/10.1080/10400419.2013.843401>
- Luescher Raphael, Barthelmess Petra Yong-Zie, Kim Su-Yeong, Richter Ulf Henning, & M. M. (2016). Conceptualizing Creativity: General and Cultural Biases in Gough's Creative Personality Scale. *Journal of Creative Behavior*, 53(1), 30–43. <https://doi.org/10.1002/jocb.160>
- Mack, T., & Landau, C. (2015). Winners, losers, and deniers: Self-selection in crowd innovation contests and the roles of motivation, creativity, and skills. *Journal of Engineering and Technology Management - JET-M*, 37, 52–64. <https://doi.org/10.1016/j.jengtecman.2015.08.003>
- Madjar Nora, Greenberg Ellen, & C. Z. (2011). Factors for Radical Creativity, Incremental Creativity, and Routine, Noncreative Performance. *Journal of Applied Psychology*, 96(4), 730–743. <https://doi.org/10.1037/a0022416>
- Martinsen, Ø. L., & Furnham, A. (2019). Cognitive style and competence motivation in creative problem solving. *Personality and Individual Differences*, 139(April 2018), 241–246. <https://doi.org/10.1016/j.paid.2018.11.023>
- Meng Yi, Tan Jing, & L. J. (2017). Abusive supervision by academic supervisors and postgraduate research students' creativity: the mediating role of leader-member exchange and intrinsic motivation. *International Journal of Leadership in Education*, 1–13. <https://doi.org/10.1080/13603124.2017.1304576>
- Meng, Y., & Zhao, C. (2018). Academic supervisor leadership and its influencing mechanism on postgraduate creativity in China. *Thinking Skills and Creativity*, 29, 32–44. <https://doi.org/10.1016/j.tsc.2018.05.006>
- Oriol, X., Amutio, A., Mendoza, M., Da Costa, S., & Miranda, R. (2016). Emotional creativity as predictor of intrinsic motivation and academic engagement in university students: The mediating role of positive emotions. *Frontiers in Psychology*, 7(AUG), 1–9. <https://doi.org/10.3389/fpsyg.2016.01243>
- Putwain, D. W., Kearsley, R., & Symes, W. (2012). Do creativity self-beliefs predict literacy achievement and motivation? *Learning and Individual Differences*, 22(3), 370–374. <https://doi.org/10.1016/j.lindif.2011.12.001>
- Rostan, S. M. (2010). Studio learning: Motivation, competence, and the development of young art students' talent and creativity. *Creativity Research Journal*, 22(3), 261–271. <https://doi.org/10.1080/10400419.2010.503533>
- Ruiter, M., & Johnson, S. L. (2015). Mania risk and creativity: A multi-method study of the role of motivation. *Journal of Affective Disorders*, 170, 52–58. <https://doi.org/10.1016/j.jad.2014.08.049>
- Sarwar, F., & Rahman, S. A. B. P. A. (2017). Psychological capital, a unique resource to develop effective managers; relationship with creativity, achievement motivation and stress. *Advanced Science Letters*, 23(9), 8598–8602. <https://doi.org/10.1166/asl.2017.9936>
- Shalley, C. E., & Perry-Smith, J. E. (2001). Effects of Social-Psychological Factors on Creative Performance: The Role of Informational and Controlling Expected Evaluation and Modeling Experience. *Organizational Behavior and Human Decision Processes*, 84(1), 1–22. <https://doi.org/10.1006/obhd.2000.2918>
- Stanko-Kaczmarek, M. (2012). The Effect of Intrinsic Motivation on the Affect and Evaluation of the Creative Process Among Fine Arts Students. *Creativity Research Journal*, 24(4), 304–310.

- <https://doi.org/10.1080/10400419.2012.730003>
- Sung, S. Y., & Choi, J. N. (2009). Do Big Five Personality Factors Affect Individual Creativity? the Moderating Role of Extrinsic Motivation. *Social Behavior and Personality: An International Journal*, 37(7), 941–956. <https://doi.org/10.2224/sbp.2009.37.7.941>
- Tan Chee-Seng, Lau Xiao-Shan, Kung Yian-Thin, K. A. R. (2016). Openness to Experience Enhances Creativity: The Mediating Role of Intrinsic Motivation and the Creative Process Engagement. *Journal of Creative Behavior*, 53(1), 109–119. <https://doi.org/10.1002/jocb.170>
- Tang, C., & Ding, X. (2014). Graduate students' creative professional virtual community behaviors and their creativity. *Computers in Human Behavior*, 41, 464–470. <https://doi.org/10.1016/j.chb.2014.09.055>
- Teachable, I. C., Relationship, P., & Education, H. (2007). QUT Digital Repository: Is Creativity Teachable ? Conceptualising the creativity / pedagogy Erica McWilliam. *Creativity*, 2007.
- Tierney Pamela, Farmer M. Steven, G. B. G. (1999). An Examination of Leadership and Employee Creativity: The relevance of traits and relationships. *Personnel Psychology*, 52, 591–620.
- Tsai, C. Y., Horng, J. S., Liu, C. H., Hu, D. C., & Chung, Y. C. (2015). Awakening student creativity: Empirical evidence in a learning environment context. *Journal of Hospitality, Leisure, Sport and Tourism Education*, 17, 28–38. <https://doi.org/10.1016/j.jhlste.2015.07.004>
- Wang, H. chun, & Cheng, Y. show. (2016). Dissecting language creativity: English proficiency, creativity, and creativity motivation as predictors in EFL learners' metaphoric creativity. *Psychology of Aesthetics, Creativity, and the Arts*, 10(2), 205–213. <https://doi.org/10.1037/aca0000060>
- Wu Mingchang, & M. (2016). An investigation of the critical factors that foster engineering students' creative thinking, self-efficacy, academic motivation, social support and academic achievement. *World Transations on Engineering and Technology Education*, 14(2), 266–270.

# **INCLUSIVE EDUCATION**

## Recommending the New Path Way to Impart Digital Literacy Using Bharatiya Model of Digital Literacy

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### ABSTRACT

*Technology plays a vital part in people's lives. Everyone in society today uses their phones countless times throughout the day. To keep someone's attention is quiet difficult these days and not just in formal settings. Studies have shown that over eighty percent of the young children and teenagers have access to some or the other form of communicative technology. Even during social interaction, mobile phones play a huge role particularly within young groups and most of the children are found using their phones during their designated sleep hours. Despite facing the fact, children are unsafe in this digital world as they are prone to criminals (criminal activities), cyber frauds, bullies, etc. which they are not aware about and which results into a lot of psychological problems like social detachment, isolation and mental health issues. The present study recommends the new conceptual framework to impart digital literacy using Bharatiya Model of Digital Literacy (BMDL) which emphasis that there is a need to provide digital literacy in a comprehensive manner because often the efforts taken to improve digital literacy are just confined to teaching usage of smart phones, computer and tablets focusing on application of real life situations. But, emphasis on security aspect, ethics and intelligent usage is equally important and which are gaining the worry of all the digital world stakeholders. The study identifies Bharatiya based Digital Literacy Level of the respondents' in the Punjab and Haryana state and also examines the impact of Bharatiya based Digital Literacy level on the respondents' digital literacy decisions.*

**KEYWORDS:** BMDL, Digital Literacy, Digital Decisions, Haryana, Punjab

### 1.0 INTRODUCTION

“Digital Literacy is a framework for a number of complex integrated sub-disciplines- or literacy's- comprise of skill, ethics, knowledge and creative outputs in the digital network environment” (Calvani, Cartelli, Fini and Ranieri, 2008). Digital literacy is often confused with the term ‘computer literacy’ which is often delineated and poorly defined (Goodson & Mangan, 1996). In contemporary context, “digital literacy includes basic skills required by the user to operate effectively the software tools or to retrieve basic information from the internet” (Buckingham, 2006).

“Computer Literacy” in the 1960s, for example, had originally connoted proficiency in programming, while contemporary definitions include no such proficiency (Martin and Grudziecki, 2006). “Computer Literacy” has since evolved to include information technology, or, “IT Literacy”, then later, information and communication technologies, or, “ICT Literacy” (Martin and Grudziecki, 2006).

Calvani, Fini and Ranieri (2009) summarize digital literacy is “being able to explore and face new technological situations in a flexible way, to analyze, select and critically evaluate data and information, to exploit technological potentials in order to represent and solve problems and build shared and collaborative knowledge, while fostering awareness of one's own personal responsibilities and the respect of reciprocal rights/obligations” (p. 60-61).

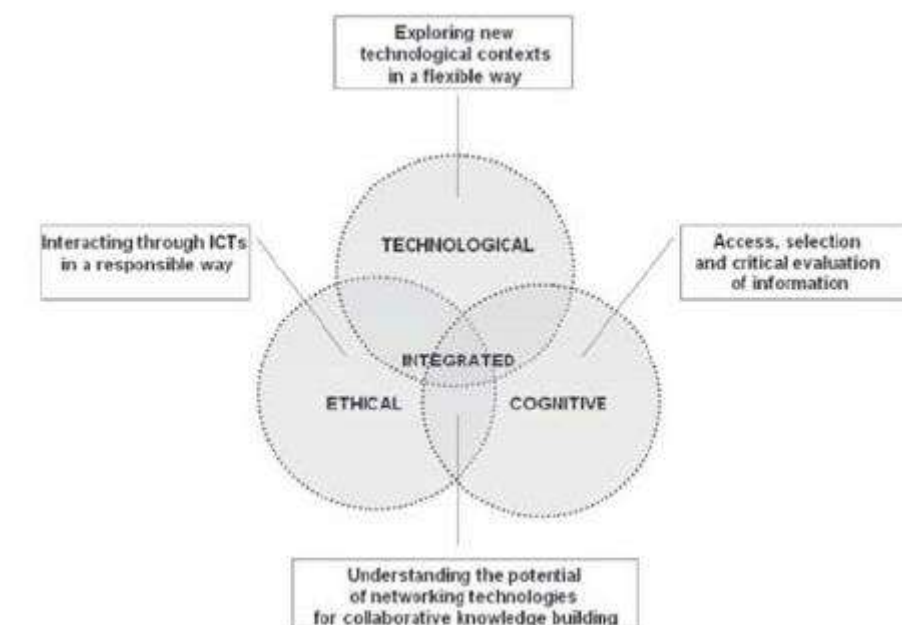


Figure 1: Intersecting Areas of Digital Literacy (2009)

Since Ages, the important area of focus has remained in achieving good governance. In the matters pertaining to policy and governance, the Aacharyas, Gurus and Rishi-Muni's have been playing an important role. The righteous kings used to consult them to run the kingdom effectively and efficiently. Along with being knowledgeable, these visionaries had empathy, compassion and care as well. And thus, the Niti (policy) has taken care of the society's sustainable development and of environment too. Therefore, we also need to focus on the holistic approach to governance for providing solutions and create opportunities today for laying strong foundations for future. And our country is making stupendous efforts in terms of governance in the digital era. Hence, various initiatives have been taken by the Government, educational institutions are contributing significantly and various corporate are joining hands with government to work towards achieving governance.

One such initiative has been made on developing Bharatiya Model of Digital Literacy (BMDL). Bharatiya is the Hindi word of Indian. The researchers believe that every concept should suit the culture and context in which it is applied. Based on the learning from the ancient scriptures and practices of other countries, the BMDL defines digital literacy as "Digital literacy is that subset of holistic learning that captures the awareness, knowledge, skill, attitude and behaviour of individuals and communities at various levels, for understanding and using the existing and emerging digital technologies for productive activities for self and everyone while ensuring the ethical usage, balancing, legal compliance, and cyber-security". Pursuant to conceptualization of this model the first implementation was carried at Banasthali Vidyapith, Rajasthan, India and in the pilot phase the digital literacy interventions were carried on 57 students from undergraduate and postgraduate programs and learning from the outcome, interventions were applied on 1022 girls. It was observed that while the students had a good level of digital literacy but some improvement was required when it comes to imparting the digital literacy in the cultural context and therefore with the support of University some student volunteers and teachers took up activities for bringing the behavioural changes and within 7 weeks when the students were again tested for digital literacy, it was a pleasant surprise for the team to find that not only the digital literacy improved in cultural context but awareness among students about the features available in computing and electronic devices also improved. The beneficiaries of the intervention program narrated that following the Bharatiya Model of Digital Literacy, it was possible for them to look at the rule of digital devices in improving their job potential, family relations, personal health, social network etc. The girls also witnessed that they are in a better position to balance their time when it comes to using the digital devices and became more aware about security of transactions, self profile etc. Furthermore, the researchers found that the students accepted the fact that they were committing several mistakes while using computer and mobile devices but were now happy with the new knowledge which they could apply to improve usage of digital gadgets thereby pursuing the goals with more confidence. It was nice to note that they also decided to help others in improving their digital literacy



based on the Bharatiya Model of Digital Literacy. Enthused by the success of interventions at Banasthali the researchers implemented the model students and working executives at Jaipur, Indore, Bhopal, Delhi and Ahmedabad. Here it was found that it was easier to bring changes among those who started using digital devices recently while bringing the behavioural changes on people with age more than 45 years was relatively difficult. On the whole the experience with implementing the new model of digital literacy on about 2200 people spread across 6 different places imbibed more confidence among the researchers about the merit of the new model in bringing desired changes in behaviour of people.

Several studies have highlighted the harmful effects of social media addiction, cyber frauds, family disturbances, health issues which emanate out of inappropriate usage of digital media and one can easily notice that the traditional model of digital literacy fails to take under account the need for productivity, balance, cyber security etc. and therefore a new model is needed for making the people to behave more as responsible citizens. Similarly it is also observed that unknowingly people breach the privacy of others, indulge in computer games in an undesired manner and create tensions in family owing to usage of digital devices. The shocking part is that the users feel surprised at all these aspects because they believe that their usage pattern is flawless. The researchers advocate that using a culturally tuned model of digital literacy makes people to comprehend the merit of deriving happiness with happiness of people around them and understand their responsibility as a family member, student and global citizen.

The intervention begins with understanding the status quo of digital literacy based on conventional model and culturally tuned model and a score is assigned to the target respondent. Based on the score the person is assigned a High/Low score both on conventional and the culturally tuned model. Thereafter the target respondent is offered to participate in a workshop on understanding the merits of BMDL and it is followed by personal counselling and behavioural inputs by the volunteers who are well trained on BMDL already. Once the volunteer recommends, the person under review is again subjected to the digital literacy testing and it is analysed if the interventions have brought the desired changes and if required additional personal counselling and behavioural inputs by the volunteers are administered.

A shlok from Subhashit would be very apt:

यस्य नास्ति स्वयं प्रज्ञा शास्त्रं तस्य करोति किम् । लोचनाभ्यां विहीनस्य दर्पणः किं करिष्यति ॥

*“Of what value are the scriptures to him who has no intelligence of his own? Of what value is a mirror to a blind person?”*

Our country is striving for the crucial insights on digital reforms and therefore we need informed and intelligent people from the corporate, society and the government who are able to judiciously leverage the technology for achieving good governance.

## 2.0 RESEARCH OBJECTIVES

This study attempts to answer the following objectives:

- i. To recommend the new conceptual framework to impart digital literacy in India.
- ii. To identify the Bharatiya based Digital Literacy Level of the respondents' in the Punjab and Haryana state.
- iii. To study the significant impact of Bharatiya based Digital Literacy Level on the respondents' digital literacy decisions.

## 3.0 RESEARCH METHODOLOGY

### 3.1 Questionnaire Design

For the purpose of the study, a structure questionnaire was framed considering which consists of 40 questions of which 8 elicit demographic information and 22 variables affecting digital literacy decisions of the respondents. The questionnaire is divided into two parts. The first part covers demographic variables of age, gender, marital status, educational qualification, area they belong, occupation and monthly income. The second part identifies 22 variables affecting digital literacy decisions of the respondents' of Punjab and Haryana state using a five-point Likert scale ranking from 1 (strongly disagree) to 5 (strongly agree) the influence of each specified factor.

### 3.2 Sampling and Data Collection

In total 450 questionnaires were distributed to the people in the selected districts of Punjab and Haryana state using judgemental sampling technique. From 450 questionnaires distributed, 391 responses were received from the Indian households. Variables covered in questionnaire were analyzed using Reliability analysis, Exploratory Factor Analysis and Regression Analysis.

## 4.0 DATA ANALYSIS AND RESULTS

### 4.1 Profile of the study respondents

The questionnaire asked each respondent to provide their demographic information that included their age, gender, marital status, educational qualification, area they belong, occupation and monthly expenditure. Table 1 provides descriptive statistics for the respondents' profile.

Table 1: Respondents' Profile

Characteristics	Number of participants	Percentage of participants (%)
<i>Gender</i>		
Men	235	60.1
Women	156	39.9
<i>Age</i>		
16-25	30	7.7
26-30	137	35
31-35	96	24.6
Above 35	128	32.7
<i>Educational Qualification</i>		
High School	94	24
Intermediate	107	27.4
Graduate	100	25.6
Post Graduate	85	21.7
Doctorate	5	1.3
<i>Area they Belong</i>		
Rural	53	13.6
Semi-urban	105	26.9
Urban	233	59.6
<i>Occupation</i>		
Unemployed	32	8.2
Student	75	19.2
Private Employee	93	23.8
Business Person	120	30.7
Government Employee	16	4.1
Professional	55	14.1
<i>Monthly Expenditure</i>		
Less than Rs 7,000	59	15.1
Rs 7,001 - Rs 15,000	89	22.8
Rs 15,001 - Rs 25,000	151	38.6
Rs 25,000 or more	92	23.5

#### 4.2 Reliability

Table 2 depicts that Cronbach's alpha was used to measure the reliability of the 22 variables affecting the digital literacy decisions to measure how strong the scale of internal consistency is and resulted that the variables meet the acceptable level of 0.7 or higher.

Table 2: Reliability of factors that influence Digital Literacy Decisions

Cronbach's Alpha	Number of Items
0.733	22

#### 4.3 Factor Analysis

Factor analysis was used to reduce the number of variables affecting the digital literacy decisions of the respondents'. Respondents were asked to rate the influence of 22 variables on a five-point Likert scale (where 1-Strongly Disagree and 5- Strongly Agree) on their digital literacy decisions. Table 3 depicts that the KMO value for variables affecting digital literacy decisions is 0.716, which is closer to 1, Hence, this value is acceptable and justifies the appropriateness of factor analysis.

Table 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.716
Bartlett's Test of Sphericity	Approx. Chi-Square	3155.083
	Df	231
	Sig.	0.000

Table 4 shows the communalities of 22 variables influencing digital literacy decisions of the respondents'.

Table 4: Communalities

Variables	Initial	Extraction
BM1	1.000	0.672
BM2	1.000	0.726
BM3	1.000	0.716
BM4	1.000	0.573
BM5	1.000	0.739
BM6	1.000	0.759
BM7	1.000	0.770
BM8	1.000	0.724
BM9	1.000	0.606
BM10	1.000	0.802
BM11	1.000	0.676
BM12	1.000	0.773
BM13	1.000	0.554
BM14	1.000	0.653
BM15	1.000	0.568
BM16	1.000	0.573
BM17	1.000	0.731
BM18	1.000	0.603
BM19	1.000	0.705
BM20	1.000	0.628
BM21	1.000	0.584
BM22	1.000	0.544

Extraction Method: Principal Component Analysis.

Further, Table 5 depicts the extraction of sum of squared loadings of the scale constructed for variables/factors preferred by respondents'.

Table 5: Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.969	22.589	22.589	4.969	22.589	22.589	3.681	16.733	16.733
2	2.722	12.375	34.963	2.722	12.375	34.963	2.341	10.642	27.375
3	1.916	8.708	43.671	1.916	8.708	43.671	2.095	9.523	36.898
4	1.418	6.447	50.118	1.418	6.447	50.118	1.848	8.399	45.297
5	1.292	5.875	55.993	1.292	5.875	55.993	1.777	8.076	53.373
6	1.239	5.633	61.626	1.239	5.633	61.626	1.524	6.925	60.298
7	1.023	4.650	66.276	1.023	4.650	66.276	1.315	5.978	66.276
8	0.934	4.247	70.522						
9	0.855	3.888	74.411						
10	0.798	3.628	78.039						
11	0.690	3.135	81.173						
12	0.599	2.723	83.897						
13	0.561	2.552	86.448						
14	0.501	2.279	88.728						
15	0.468	2.127	90.854						
16	0.415	1.885	92.739						
17	0.360	1.635	94.374						
18	0.322	1.462	95.836						
19	0.270	1.227	97.063						
20	0.259	1.178	98.241						
21	0.220	0.999	99.239						
22	0.167	0.761	100.000						

Extraction Method: Principal Component Analysis.

The extracted factors, their respective items and their corresponding factor loadings are given in Table 6.

Table 6: Composition of Each Factor Identified in Factor Analysis

Factor	Items	Factor loadings
<i>Factor 1 Ethical Usage</i>	I believe that people whom I met in chat room are trust worthy, good, honest, kind.	0.765
	I don't feel to attack social/religious sentiments and neither use abusive harsh language while chatting.	0.846
	I easily recognize spam mails, fake accounts/profile with morphed pictures or obscene description etc. on social networking sites like facebook, twitter, instagram etc.	0.786
	I frequently advice on social matters using social networking sites.	0.567
	I frequently assist my elders / grandparents in hassle free usage of technology for purposes like matrimony / connecting them with their batch mates / relatives/ online shopping/ e-ticketing and e-complaint etc.	0.711
	I think digital literacy always helps me in taking decision regarding investment of money, taking best premium	0.525
<i>Factor 2 Balancing</i>	I always download software's to upgrade my digital device.	0.633
	I sometimes feel that I am technologically handicapped.	0.804
	I think digital literacy motivates me to get more in touch with electronic gadgets.	0.689

<i>Factor 3 Intelligent Usage</i>	Before purchasing a product, I always do thorough research on internet, and consider the reviews to get best product at minimum price.	0.772
	I prefer to spend time on evaluating options before coming to any important decision.	0.733
	I frequently pay tax directly through online services to save my time.	0.584
<i>Factor 4 E-Governance</i>	I strongly think that the government should make further investment on e-governance.	0.740
	I believe that E-governance has reduced the gender discrimination in accessing various services.	0.838
	I always feel impatient and fretful when I have to leave my phone for unavoidable reasons.	0.823
<i>Factor 5 Cyber Ethics</i>	I prefer to publish paper, article etc. using online service.	0.588
	I habitually follow rules of communication in cyber space	0.805
<i>Factor 6 Safety</i>	I always trust digital locker service to save my documents securely.	0.843
<i>Factor 7 Legal Compliance</i>	I am largely aware of reporting option provided by social networking websites or Internet Service Provider (ISPs) to report the victimization to the police.	0.838

#### 4.4 Bharatiya Based Digital Literacy Level

To measure the Bharatiya based digital literacy level of the respondents, the median percentage of the overall scores of the sample was considered to frame the digital literacy level and/or to classify the cases in to different subgroups. The respondents scoring above median were considered as higher digitally literate and respondents scoring equal to and lower than median were considered as lower digitally literate.

#### 4.5 Bharatiya based Digital Literacy Level and Digital Literacy Decisions

In order to analyze the impact of Bharatiya based digital literacy level on digital literacy decision of the respondents', regression model was used. In this model, the sum of digital literacy decision factors is considered as dependent variable and the overall score of Bharatiya based digital literacy as the independent variable. Table 7 shows the results of regression analysis which is conducted to analyze the impact of Bharatiya based digital literacy level on the digital literacy decisions of the respondents' in the states of Punjab and Haryana.

Table 7: Regression Analysis Results- Bharatiya based Digital Literacy Level and Factors affecting Digital Literacy Decision

Dependent Variable	$R^2$	Adjusted $R^2$	SE of the estimate	Beta	t	Sig.
Ethical Usage	0.461	0.460	0.692	0.679	18.251	0.000
Balancing	0.169	0.166	1.034	0.411	8.879	0.000
Intelligent Usage	0.365	0.363	0.789	0.604	14.947	0.000
E-Governance	0.000	-0.003	0.738	-0.003	-0.066	0.948
Cyber Ethics	0.010	0.007	1.013	-0.099	-1.954	0.050
Safety	0.043	0.041	0.973	0.208	4.204	0.000
Legal Compliance	0.105	0.103	1.344	0.324	6.749	0.000

In the present regression analysis, considering the Factor1- Ethical Usage, the measure of strength of association is given by the coefficient of determination denoted by  $R^2$  value and the value is 0.461, which shows 46.1% of variance in respondents' ethical usage (as a factor of digital literacy decision) can be predicted by his/her Bharatiya based digital literacy level. The value of Beta is 0.679 which indicates that there is a positive linear relationship Bharatiya based digital literacy level and ethical usage. The t-test value

for the significance of individual independent variable indicates the significance at 95% confidence level. Table VII shows that Bharatiya based digital literacy level is statistically significant with a value of 0.000, which is less than 0.05.

While looking at the  $R^2$  value of Factor 2- Balancing i.e. 0.169, it can be interpreted that 16.9 % of variance in respondents' Balancing (as a factor of digital literacy decision) can be predicted by his/her Bharatiya based digital literacy level. The t-test value indicates a statistically significant impact of Bharatiya based digital literacy level on Balancing. Considering Factor 3- Intelligent Usage, it can be seen that the  $R^2$  value is 0.365, which shows 36.5% of variance of respondents' intelligent usage (as a factor of digital literacy decision) can be predicted by his/her Bharatiya based digital literacy level. It can also be seen that the t-test value is statistically significant with a value of 0.000, which indicates there is a significant impact of Bharatiya based digital literacy level on intelligent usage of the respondents'.

With regard to Factor 4- E-Governance,  $R^2$  value is 0.000, which indicates that 0% variance in respondents' e-governance (as a factor of digital literacy decision) can be predicted by his/her Bharatiya based digital literacy level. The t-test value shows the statistically negative impact of Bharatiya based digital literacy level on e-governance. Looking at the  $R^2$  value of Factor 5- Cyber Ethics which is 0.010, it can be interpreted that only 1% of variance in respondents' cyber ethics (as a factor of digital literacy decision) can be predicted by his/her Bharatiya based digital literacy level. The t-test value shows the statistically negative impact of Bharatiya based digital literacy level on cyber ethics.

Considering Factor 6- Safety, the value of  $R^2$  is 0.140, which shows only 1.4% of variance in respondents' safety (as a factor of digital literacy decision) can be predicted by his/her Bharatiya based digital literacy level. The t-test value is significant at value 0.000 and depicts that there is statistically significant impact of Bharatiya based digital literacy level on safety. The  $R^2$  value of Factor 7- Legal Compliance is 0.105, which depicts that 10.5% of variance in respondents' legal compliance (as a factor of digital literacy decision) can be predicted by his/her Bharatiya based digital literacy level. And there is a statistically significant impact of Bharatiya based digital literacy level on legal compliance of the respondents'.

## **5.0 CONCLUSION AND RECOMMENDATIONS OF THE STUDY**

The present study recommended the new path way to impart digital literacy in India using Bharatiya Model of Digital Literacy (BMDL), identified the Bharatiya based digital literacy level of the people and also examined the factors influencing their digital literacy decisions. Exploratory factor analysis identified seven variables namely ethical usage, balancing, intelligent usage, e-governance, cyber ethics, safety and legal compliance which affected the digital literacy decision of the respondents'. Bharatiya based digital literacy had a positive significant impact on the factors viz. ethical usage, balancing, intelligent usage, safety and legal compliance, whereas a negative impact was found on the factors i.e. e-governance and cyber ethics. The concerns shared above about intelligent usage should be given due consideration and BMDL can serve as a starting point.

Considering Corporate, apart from themselves adopting the best practices in technology, they can, under CSR promote digitization by working with educational institutions, social organizations and government. The application of knowledge-action-reflection-wisdom framework has tremendous usefulness in solving problems of the society. Educational institutions can work for improving digital literacy at all levels – school, college students, and adjoining rural areas through training programmes. They can add new knowledge and disseminate the learning, research at all levels. The institutes should themselves adopt best technology to inspire others and importantly promote the intelligent usage. Considering the role of parents/ teachers/ NGO/ trainer, just acquainting children or students or beneficiaries with using the computer, software, internet and technologies would not serve the purpose. Ensuring the training as per the BMDL should be considered.

## REFERENCES

- Buckingham, D. (2006). Defining Digital Literacy. *Digital Kompetanse* (1), 263-276.
- Calvani, Antonio & Cartelli, Antonio & Fini, Antonio & Ranieri, Maria. (2008). Models and instruments for assessing digital competence at school. *Journal of E-Learning and Knowledge Society*. 4. 183-193.
- Calvani, A., Fini, A., and Ranieri, M. (2009). Assessing Digital Competence in Secondary Education - Issues, Models and Instruments. (M. Leaning, Ed.) *Issues in Information and Media Literacy: Education, Practice and Pedagogy*, 153-172.
- Goodson, I., & Mangan, J. M. (1996). Computer literacy as Ideology. *British Journal of Sociology of Education* 17 (1), 65-79.
- Martin, A., Grudziecki, J. (2006). DigEuLit: Concepts and Tools for Digital Literacy Development, University of Glasgow, Scotland. Retrieved online April 30, 2010 from: [ics.heacademy.ac.uk/italics/vol5iss4/martin-grudziecki.pdf](http://ics.heacademy.ac.uk/italics/vol5iss4/martin-grudziecki.pdf).
- Purohit, H., Bharti, N. & Joshi, A. (2015). Partnering for Promotion of Digital Literacy Among Women in Rajasthan Through Bharatiya Model of Digital Literacy. *Available at SSRN*.
- Sharma, S. (2006). *Management in New Age: Western Windows Eastern Doors*. New Age International Publishers, New Delhi
- Sharma, S. (2015). *New Ideas in Strategic Thinking & Management: A Knowledge Tree of New Age Mantras*. New Age International Publishers, New Delhi.

# **EDUCATIONAL PSYCHOLOGY AND SOCIOLOGY**



## Preparing Emerging Adults for Their Career by Fostering Self-Efficacy and Emotional Intelligence in Tertiary Education

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### ABSTRACT

*The theory of emerging adulthood is related closely to school-to-work transition. Globalisation that occurs rapidly does not only provide increasing opportunities but also new challenges for this age group. Emerging adults are facing challenges and dramatic school-to-work transition that are affecting their well-being. Thus, embarking on a career path is both exciting and daunting for emerging adults. The labour market has shifted in skills required globally as in 2020, employers yearn for emerging adults possessing critical thinking, emotional intelligence and cognitive flexibility (such as self-efficacy) on top of knowledge of their university degrees. There are increasing demands for knowledge and multiple skills that need to be acquired by emerging adults. Hence, the research question that will be pondered upon in this paper are 1) How far does tertiary education prepares youths for skills required in a job environment in terms of self-efficacy and emotional intelligence? and 2) How do self-efficacy and emotional intelligence affect their well-being in workplace environment? Unquestionably, the educational institutions in Malaysia have placed great importance in academic achievements; however, future employments require more than educational knowledge to survive and to thrive in the working environment. This problem is discussed based on the research published on this emerging topic. Apart from knowledge transferring, educational institutions at tertiary level are supposed to develop students with relevant soft skills such as self-efficacy and emotional intelligence that make them more employable. Self-efficacy and emotional intelligence are important to aid career development and mental well-being at workplace. Previous studies have indicated that self-efficacy is the best single predictor of overall adjustment. It shows that self-efficacy is an essential trait for an employee to ensure workplace well-being. Self-efficacy is also one of the building blocks that shapes people's educational and career trajectories. Having high self-efficacy also exerts positive well-being as it helps in regulating stress level, having higher self-esteem and better adaptation to the environment. As stress management is one of the topmost skills required in an organization, self-efficacy is to be developed at tertiary level before emerging adults leap into a workplace environment. Another top skill that makes emerging adults employable globally is emotional intelligence. Emotional intelligence has significant positive impact on psychological well-being of employees. It plays a dominant role of learning at the individual level to succeed in structural level. Emotional intelligence encompasses human proficiency of feeling, motivation, self-control and skilfulness in relationships. Emotional intelligence also plays a major role in predicting success and making them less vulnerable to negativities at workplace. However, most tertiary education focuses more on academic achievements. Emerging adults and fresh graduates shall not just replicate knowledge but attempts shall be made to create new things with fresh ideas. Tertiary education should not act as more than knowledge resources for emerging adults but also as transition support that provide relevant skills for emerging adults to begin their desired career path.*

**KEYWORDS:** Self-efficacy, Emotional Intelligence, Emerging Adulthood, School-to-work transition, Tertiary Education

### 1.0 INTRODUCTION

Tertiary education is the key factor that prepares young people in entering adulthood. It does not only equip individuals with knowledge and skills related to the chosen discipline but also help them to develop soft skills essential for career success. Emerging adults are undergoing intense changes while exploring possibilities in life and preparing solid foundation for work lives (Arnett, 2000). The Malaysian government

believes that emerging adults are a great asset to the country and are equipped with energy, talent and creativity that is significant to nation's economy and a basis for future development of the country.

Currently, higher education in Malaysia is mostly centralized on university education, relying on government resources and mass-production delivery model (Ministry of Education, 2015). Thus, there is a dire need for the education system to go beyond economic importance and to consider civilising the education system (Wan, Sirat, & Razak, 2018). The Education system has to maintain a holistic focus on education to produce intellectually, physically and emotionally balanced individuals so that Malaysia can move forward towards becoming a nation that is wholly developed and not just a high-income economy (Wan et al., 2018). Youth should not just be equipped with knowledge but also great personalities, soft skills and goal-oriented attitudes. In order to produce graduates who are holistically excellent, major importance should be placed on solid foundation from tertiary education.

### **1.1 Tertiary Education in Malaysia**

The achievement of education enrolment in Malaysia is significant and remarkable (Wan et al., 2018). In 2016, 20232 students were enrolled in higher education which includes colleges and universities across Malaysia (MOHE, 2017). Malaysian Ministry of Education aims to improve access enrolment into higher education from 36% to 53% in order to be equal with the highest enrolment levels among the ASEAN countries by 2025. Not only that, the Ministry also aims to increase the present 75% graduate employability rate to more than 80% in 2025. This report shows that Malaysia has high expectation on their youth to develop the nation.

Malaysia is not just preparing graduates for local career path but towards international globalisation too. Globalisation implies a complex approach to teaching and learning that aims to achieve goals of preparing young people for the successful future in the changing world but with respect to their culture and diversity. In the context of the global world that is full of ambitious young people striving for success, employers are searching for multifaceted and multitalented graduates who are able to navigate their organisation to flourish in the competitive marketplace, and Higher Educational system should be able to produce graduates with these qualities (Hamid, Islam, & Hazilah, 2014; Mok, Wen, & Dale, 2016; Pavlin, & Svetlik, 2014; Schech, Kelton, Carati, & Kingsmill, 2017). Many companies in Malaysia are not just operated locally but have direct relationship with overseas countries. Hence, employers are looking for graduates that can adapt fast and effectively towards changes surrounding them.

Written as student aspirations in Malaysia Education Blueprint (Ministry of Education, 2015), individuals undertaking higher education should possess leadership skills such as effective communication, emotional intelligence and the ability to work across cultures. The current education provides sufficient technical and educational skills to graduates but often curriculum does not provide opportunities in the development of soft skills that are essential to thrive in young adults' career. These skills are not being covered effectively and holistically by Higher Education during the development of curricular. Although soft skills have been incorporated in curriculum of Public Universities in Malaysia since 2007, many employers insist that colleges must focus more on the development of soft skills since disciplinary knowledge is not sufficient to succeed in the corporate world (Ngang, 2011; Gerstein & Friedman, 2016).

At present, the higher education system embedded several traits of soft skills in the undergraduate syllabus taught at Institutes of Higher Learning such as critical thinking, problem-solving, work collaboratively in teams and leadership skill (Shakir, 2009). Although the effort has been done, prospective employers still view local graduates as technically proficient but lack in communication and soft skills (Shakir, 2009). This might be due to insufficient training and knowledge among academicians who needed to embed soft skills in the existing courses (Shakir, 2009). More time and practice will be needed before the policy can be implemented holistically in public and private universities in Malaysia.

## **2.0 FACTORS AFFECTING SUCCESSFUL CAREER PATH AMONG EMERGING ADULTS**

Successful graduation from Higher Educational Institutions does not mean that graduates have clear ideas on how to build their careers. Actually, academic graduates may experience more difficulties in entering job market compared to those who completed vocational tertiary education (Backes-Gellner, & Geel, 2014) that raises a question on how well academia prepares students to the transition from study to work. Often, the transition phase from higher education to work-life does not provide a clear pathway to

graduates which resulted in challenges among them as they are often incompetent in facing the challenges and reality of working world (Dahlgren, Solbrekke, Karseth, & Nyström, 2014). The primary reasons are (a) educational system cannot incorporate necessary changes quickly and (b) educational institutions are inadequately equipped both materially and in competence (i.e. educators and administrators) to prepare students for their uncertain career pathway in the future. It is not realistic to assume that the knowledge they gained today will become relevant for a lifetime (Kirschner & Stoyanov, 2018) as the world is constantly evolving. The key skill for youths is not to simply memorise facts but should prepare students with qualities needed by their career field of choice to ensure that they are work-ready and employable.

Businesses and social landscape are often affected by the fast development of technologies nowadays. The Ministry of Education realises that innovative technologies such as advanced robotics, the high-speed Internet and the automation of knowledge works threatened the business and social environment that will require higher education system to transform in order to prepare Malaysian youth to prosper in the challenging and constantly changing future (Rangel, Sueyoshi, & Samsudin, 2016). The skills learnt in tertiary education should change accordingly in Malaysia to adapt graduates to new career pathways. Both technical skills and soft skills play equally important roles, especially, in high-skilled employment. The current educational institution does not address efficiently this key concept because the previous policy focused mostly on technical skills that are not enough in the working environment.

In this era, employers do not hire graduates solely based on their academic excellence but also on their soft skills. It is vital to rely on holistic and qualified human resources to increase productivity and contribute towards better understanding and tolerance among nations (Rangel et al., 2016). Graduates play a very important role in the implementation of public policies and directing the development of nation (Rangel et al., 2016). However, well-educated people are confronted with the actuality of unemployment. Hence, significant changes should be made to higher education system across nations in order to produce highly skilled human capital needed to increase effectiveness and competitiveness that will match with the labour market (Rangel et al., 2016). Policymakers have to tackle the issues that contribute to this problem in order to solve the issues successfully.

Meta-cognitive skills are one of the qualities that are essential for graduates (Kirschner, & Stoyanov, 2018). Young people have to contemplate on their own learning process, achieve and monitor their own goals in their working life. This experience is quite different from the one they get in the school environment where they have educators/mentors who monitored them. One of the key skills that can be regarded as important for successful transition to working life is self-efficacy. Self-efficacy is the non-technical skill that could increase confidence among graduates and promote effective adaptation to new environment (Hudin et al., 2018; Olson 2014). When their confidence increased, they could perform a goal and task successfully without hesitation. They also have the stronger commitment in their tasks and recover quickly from setbacks and disappointments. Employers are more likely to recruit graduates with high self-efficacy as they will be motivated to perform well at the workplace.

There have been quite a number of changes in skills to be required by employers in recent years. Comparing the ten top skills that are essential for employability globally in 2015 and 2020, it is noticeable that creativity has lifted up from tenth to third place, the quality control has been removed as it is probably implemented by technological not human resources, and two new skills have been added namely cognitive flexibility and emotional intelligence (EI) (World Economic Forum (WEF), 2016). EI becomes increasingly important as working environment continues to evolve for technologies and innovation which requires employees to be able to work in teams, be flexible and have high adaptability. There is no doubt artificial intelligence (AI) has affected the labour and careers in production, sales, and administrative support which are now facing high probability of computerisation. However, AI still not able to overpower human mind in the context of EI such as fostering relationships in teamwork.

World Bank and Talent Corporation in 2014 conducted a study which revealed that 90% of companies convinced that higher education should equip students with more practical training and 80% think that they should consider amending their syllabus university curricula to demonstrate current realities of the labour market. In summary, the current education system should assist emerging adults in constructing their career pathway. They have to catch up with the advancement of technologies while graduates have to equip themselves with meta-cognitive skills and emotional intelligence to be deemed employable by organizations and employers. Without these skills, graduates will face a major problem in employability issue and career pathway.

## **2.1 The Role of Self-efficacy in Career Pathway**

One of the highly required employability skills by employers is flexibility. It includes how an employee responds to new knowledge, changes and handling new or uncertain situations. To be flexible is to prepare for unexpected situations, to reskill and retrain, to leave the comfort zone and to get acquainted with new tasks and in order for graduates to possess flexibility, they have to learn how to be efficient in their daily work tasks. In order for graduates to fulfil skill demands to be employable, flexibility is a significant skill expected to be possessed by employers (Humburg & Van der Velden, 2013) as there are positive relationships between flexibility and self-efficacy that lead to a higher rate of successfully completed tasks (Jeffords, Bayly, & Bumpus, & Hill, 2018). Self-efficacy also has powerful effects in assisting process of learning, motivation and work performance (Lunenbergh, 2011). Hence, individuals who possessed self-efficacy are able to accomplish tasks and goals as they reflect confidence and the ability to exert control over their behaviour.

Self-efficacy is a positive construct that helped in positive youth development. The concept of self-efficacy fostered for academic success is not the same for employment. Bandura's Social Cognition Theory marks human functioning as the combination of personal, behavioural and environmental influences (Klassen & Usher, 2010). This shows that human functioning as a result of self-efficacy can be influenced by educational settings of emerging adults and it can be fostered during their university years. People's belief in their self-efficacy can predict their actual behaviour, for instance, performance at workplace in the future.

Self-efficacy construct is believed to be negatively associated with unemployment. Previous research has shown that higher self-efficacy beliefs lead to the lower risk of later unemployment (Guan et al., 2013; Olson, 2014; Wiener & Oei, 1999); high academic self-efficacy is able to prevent unemployment during school-to-work transition (Pinquart, Juang, & Silbereisen, 2003), and students who developed a good level of self-efficacy experience less adverse effects of high workload due to better planning skills (Kyndt, Berghman, Dochy, & Bulckens, 2014) Hence, how students organise time and space, where they place their prime concern and how actively they ask questions in order to find out the way to perform better could not be only factors of academic success but also a transferable skill to work environment. When these skills are learnt and acquired before leaving tertiary education, it is believed that they could adapt better with colleagues and being collaborative with their mentors.

Self-efficacy is not an inherited trait and can be formed and enhanced through mastery experiences which are cognitive processes that allow to progress from the novice stage in any activity to the expert level. For instance, tertiary education can implement an adventure-based type of experiential training that was developed to have a positive impression on students' personal growth and development (Tsang, Hui, & Law, 2012). The second method self-efficacy can be fostered is through vicarious experience which students observed successful task performance conducted by professionals. These models elevated the readiness of youth to act on their ideas and further enhance their self-efficacy. Hence, academicians in tertiary education should demonstrate how they effectively overcome challenges and the strategies they used to students as exemplary behaviour. The third method is through verbal persuasion given by individuals who are close to youth like parents and teachers (Tsang et al., 2012). Words encouragement can elevate self-efficacy beliefs in youth in addition to their confidence in performing an action. Verbal encouragement helps youth to overcome their inner doubt and focus their energy to accomplish tasks or goals. Additionally, some suggestions on how to cultivate self-efficacy provided by Usher and Pajares (2008) that focus on both quantitative and qualitative assessments of self-efficacy to ensure that they are more age, gender, academic domain and culture-sensitive. A recent study by Garcia-Aracil (2016) on preparation for labour market transition stated that higher education institutions should reflect on students' self-beliefs based on their diversity in order to increase the effectiveness of their competencies and individual resources to be applied in work contexts. Students' perceptions about their competences at the end of their higher education are essential to acknowledge employability issues. When students have high competency, employers are more confident to hire them and this will increase their chances of employability. Training of self-efficacy could start from the school level through extra-curricular activities. However, some Asian parents are not aware of its importance. Parents placed more focus on academic achievement and ignore the importance of extracurricular activities.

In summary, self-efficacy promotes favourable outcome expectations among graduates. Organizations are facing an increasing number of challenges in the changing world and only resilient, self-efficacious employees are needed to ensure that they are able to work under pressure. Students must be exposed to various situations in order to examine their level of self-efficacy in different circumstances to ensure that they are able to persist and exert difficult tasks.

## **2.2 Emotional Intelligence and Career Pathway**

Emotional intelligence can assist graduates in becoming the best in their career and achieve career success. Graduates in the 21<sup>st</sup> century are expected to possess EI which is a demand trait in the market as in 2020, Emotional intelligence (EI) will be one of the top skills wanted globally by employers (WEF, 2016). There are a few reasons of why EI is so crucial for a job performance. Firstly, EI domain covers the capabilities of an individual to identify, comprehend, control and utilise emotions while dealing with others and also themselves (Saklofske, Austin & Andrews, 2007). Secondly, EI is the ability to recognize, and convey emotion; the ability to access and/or produce feelings when it facilitates thoughts; the capability to understand and regulation of emotions (Mayer, & Salovey 1997). Lastly, based on a study conducted by Jameson, Carthy, McGuinness and McSweeney (2016), majority of employers rated EI as a very important skill for graduates to possess at workplace but very few employers rated EI level demonstrated by graduates as excellent. Workers are expected to do a variety of minimally overlapping jobs where flexibility is functional and internal (Humburg & Van Der Velden, 2013) However, there is a lack of opportunities and experience available for students to develop EI skills in their tertiary education years. Currently, ‘millennial students’ or Generation Y or Z students seem to favour team collaboration compared to individual efforts (Hudin et al., 2018; Pinder-Grover & Groscurth, 2009). Although this characteristic is considered favourable in learning how to assess and being aware of others’ emotions, millennial students in Malaysian context depended too much from their incumbents and expect constant mentoring (Raslie, Pit, & Ting, 2016). Young people need to enhance their own internal resources and widen their social networks in order to prosper in this evolving world (Vuolo, Staff, & Mortimer, 2012). Thus, possessing EI is a must for every youth before entering the workforce to ensure that they could embrace changes and grow better as an individual and in team.

EI can be advantageous at the workplace as it helps build better relationships with colleagues and make affairs run smoothly. When an individual possesses emotional intelligence, they are able to resolve conflicts at workplace, work effectively with others and able to tolerate with stress through self-regulation of emotions (Hudin et al., 2018). Strong EI skill is also linked to confidence to be employed among emerging adults, as employers stated that skills in working in teams and the ability to work effectively in an environment of ambiguity and role changing are critical at 21<sup>st</sup> century workplace (Partnership for 21<sup>st</sup> Century skills, 2008). EI could also be helpful in improving work performance and reduce stress at workplace. A recent study by Udayar, Fiori, Thalmayer, and Rossier (2018) indicated that the perceived capacity in understanding and utilizing emotions in different situations may encourage individuals’ self-regulatory resources which will reduce difficulties in making career decisions. Hence, an individual with emotional intelligence will also have more confidence in finding future employment which is very essential for emerging adults who have just graduated. Their EI skills will also assist them in interview sessions with employers in the future.

EI can be learned and improved. A study on emotional competence intervention by Hodzic, Ripoll, Lira, and Zenasni (2015) revealed that perceived employability significantly increased in participants who undergo emotional competence intervention. Previous findings also showed that individuals who undergo emotional competence intervention have higher reemployment success (which means that they found employments quicker) than their control group counterparts (Hodzic et al., 2015). When people possess EI ability, they are able to change their perception of their employability which leads to reemployment success and also enhance their entrepreneurial self-efficacy.

Careers are changing over the years and some careers are not relevant anymore in the industry. This does not only affect the workforce and computerization which able to take over their work but also graduates too. Previously, EI was not a vital skill to be required by employers globally. However, in 2020, it is one of the skills needed in order for young adults to thrive in the working world. Companies are looking less on technical skills and more towards people skills that stemmed from emotional intelligence. For

graduates to succeed in the workplace and progressed quickly in their career ladder, EI is critical to their success.

### **3.0 SUGGESTION TO EQUIP THE YOUNGER GENERATION TO MEET FUTURE CHALLENGES**

To produce more qualified graduates for employment, quality education must be implemented. Higher Educational Institutions have to be empowered with greater autonomy and responsibility to initiate technologically savvy, holistically excellent graduates and upgrade the quality of their educational setting. For instance, particularly for youth, research has shown that effective vocational training is associated with lower rates of youth unemployment (Banerji et al., 2014). This is suitable to be implemented in Malaysia as there is high needs for low to mid-skilled workers.

Secondly, previous findings showed that self-efficacy is linked closely to employability (; Olson, 2014; Pinquart, Juang, & Silbereisen, 2003; Wiener & Oei, 1999). Hence, there has to be plans to implement self-efficacy training among students in tertiary education before they graduate. Self-efficacy development should be embedded in the higher education syllabus and also graded to ensure that the training is to be taken seriously by students. According to Bandura (1977), an individual is employable if he has the belief and confidence on different possibilities to get hired, which is related to self-efficacy has been shown to predict employability (Hazenberg, Seddon, & Denny, 2015). Atitsogbe, Mama, Sovet, Pari and Rossier (2019) in their findings revealed that self-efficacy explained 32% of variance in perceived employability and 8% variance in entrepreneurial intentions for the students. This explains that self-efficacy is an important trait for graduates to survive in the challenging economy especially when the future of tertiary education is aiming to produce more job creators and not just job seekers.

Previous research findings have also demonstrated that employers preferred graduates with high levels of EI (Jameson, et al., 2016; Hodzic et al., 2015; Udayar et al., 2018). A survey conducted on employers from various sectors such as engineering, computing and professional services revealed that majority of companies reported that emotional competence as “important” or “very important” (Jameson et al., 2016). Hence, emotional intelligence coaching should be provided to final year students in order for graduates and employers to have higher productivity, better stress management and increased job satisfaction in the workplace environment. Students who deal with their emotions efficiently can focus and persist in their tasks despite dealing with obstacles (Di Fabio & Kenny, 2015). They will also be able to utilize these self-regulatory resources while facing challenges with various situations at the workplace.

In an effort to produce holistic and readily employable graduates, a new grading system called iCGPA was introduced in Malaysia (Sani, 2017). The iCGPA grading system aims to cover students’ academic performance as well as professional abilities obtained during their university years to produce youths who are not only outstanding in academic performance, but are also holistically prepared for adulthood (Sani, 2017). Under this new system, students will not only graduate with a complete “report card” comprises of their subjects and performance, but the skills that they have learnt in their higher education journey (Khor, 2015). The new system will make more students aware that they have to be equipped with skills beyond academics to excel as a student.

However, an issue was raised by Chief Executive Officer of Asia Pacific University of Technology and Innovation (APU) which stated that the guidelines for iCGPA “just aren’t there yet.” Dr Maszlee Malik, the Minister of Education also stated that iCGPA is no longer compulsory for public universities. This is due to new conflict that arises with the new grading system where its enactment has diverged the focus of educators from their main tasks which consisted of teaching, conducting research, writing journal articles, supervising students, as well as serving the public (Abd Mutalib, 2018). Hence, it is decided that the iCGPA system no longer to be obligatory for Malaysian public universities. A new policy or module that could be implemented in both public and private universities should be done in order for the nation to achieve their Malaysia Educational Blueprint aspirations. Ministry of Education could also revise the iCGPA system to ensure that it is both suitable and user-friendly to be used by academicians and students.

### **4.0 CONCLUSION**

This conceptual paper aims to discuss factors that could guide emerging adults and graduates towards career success and qualities that could be instilled among students in tertiary education in order to

enhance their employability. The present educational system is too rigid in addressing new challenges that is coming. This issue has to be tackled carefully and systematically as the recent global economic downturn has caused numerous challenges for graduates who even have strong fundamental skills to secure entry-level positions, which lead to a high number of graduates encountered an extended period of unemployment (Peck, 2010). In order to produce more highly skilled workers, both technical skills and soft skills will play the important role (Omar, Bakar, & Rashid, 2012). Hence, it is hoped that policymakers of education could consider to cultivate and enhance the traits of self-efficacy and emotional intelligence through training and academic curriculum before graduates complete their tertiary education.

## REFERENCES

- Abd, M. (June 21, 2018). iCGPA system no longer compulsory for public universities. *New Straits Times*. Retrieved from <https://www.nst.com.my/news/government-public-policy/2018/06/382497/icgpa-system-no-longer-compulsory-public-universities>
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55(5), 469-480. doi: <http://dx.doi.org/10.1177/0163278716663602>
- Atitsogbe, K. A., Mama, N. P., Sovet, L., Pari, P., & Rossier, J. (2019). Perceived employability and entrepreneurial intentions across university students and job seekers in Togo: The effect of career adaptability and self-efficacy. *Frontiers in Psychology*, 10(180), 1-14. doi: 10.3389/fpsyg.2019.00180
- Azmi, I. A. G., Hashim, R. C., & Yusoff, Y.M. (2018). The employability skills of Malaysian university students. *International Journal of Modern Trends in Social Sciences*, 1(3), 1-14.
- Backes-Gellner, U., & Geel, R. (2014). A comparison of career success between graduates of vocational and academic tertiary education. *Oxford Review of Education*, 40(2), 266-291.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215.
- Banerji, A., Saksonovs, M. S., Lin, M. H. H., & Blavy, M. R. (2014). *Youth unemployment in advanced economies in Europe: Searching for solutions*. International Monetary Fund.
- Dahlgren, M. A., Solbrekke, T. D., Karseth, B., & Nyström, S. (2014). From University to professional practice: Students as journeymen between cultures of education and work, *International Handbook of Research in Professional and Practice-based Learning* (pp. 461-484). Dordrecht: Springer.
- Di Fabio, A., & Kenny, M. E. (2015). The contributions of emotional intelligence and social support for adaptive career progress among Italian youth. *Journal of Career Development*, 42(1), 48-59. doi: 10.1177/0894845314533420
- Frey, C. B., & Osborne, M. A. (2017). The future of employment: How susceptible are jobs to computerisation?. *Technological Forecasting and Social Change*, 114, 254-280.
- Gerstein, M., Friedman, H. H. (2016). Rethinking Higher Education: Focusing on Skills and Competencies. *Psychosociological Issues in Human Resource Management*, 4(2), 104-121.
- Guan, Y., Deng, H., Sun, J., Wang, Y., Cai, Z., Ye, L., ... & Li, Y. (2013). Career adaptability, job search self-efficacy and outcomes: A three-wave investigation among Chinese university graduates. *Journal of Vocational Behavior*, 83(3), 561-570.
- Hamid, M. S. A., Islam, R., & Hazilah, A. M. N. (2014). Malaysian graduates' employability skills enhancement: an application of the importance performance analysis. *Journal for Global Business Advancement*, 7(3), 181-197.
- Hazenbergh, R., Seddon, F., & Denny, S. (2015). Programme recruitment and evaluation: The effect of an employability enhancement programme on the general self-efficacy levels of unemployed graduates. *Journal of Education and Work*, 28(3), 273-300. doi: 10.1080/13639080.2014.900165
- Hodžic, S., Ripoll, P., Lira, E., & Zenasni, F. (2015). Can intervention in emotional competences increase employability prospects of unemployed adults? *Journal of Vocational Behavior*, 88, 28-37. <http://dx.doi.org/10.1016/j.jvb.2015.02.007>
- Hudin, N. S., Osman, J., Shokory, S. M., & Wahid, H. A. (2018). Service learning in Higher Education: Evidence from Malaysia. *International Journal of Engineering & Technology*, 3(30), 474-479.



- Humburg, M., & Van der Velden, R. K. W. (2013). *What is expected of higher education graduates in the 21st century?* (ROA Research Memoranda; No. 013). Maastricht: Research Centre for Education and the Labour Market.
- Jameson, A., Carthy, A., McGuinness, C., & McSweeney, F. (2016). Emotional intelligence and graduates–employers’ perspectives. *Procedia-Social and Behavioral Sciences*, 228, 515-522. doi: 10.1016/j.sbspro.2016.07.079
- Jeffords, J. R., Bayly, B. L., Bumpus, M. F., & Hill, L. G. (2018). Investigating the Relationship Between University Students’ Psychological Flexibility and College Self-Efficacy. *Journal of College Student Retention: Research, Theory & Practice*, 1-22. doi: 10.1177/1521025117751071
- Khor, A. (August 16, 2015). Towards an integrated grading system. *The Star Online*. Retrieved from <https://www.thestar.com.my/news/education/2015/08/16/towards-an-integrated-grading-system>
- Kirschner, P. A., & Stoyanov, S. (2018). Educating Youth for Nonexistent/Not Yet Existing Professions. *Educational Policy*, 1-41. doi: 10.1177/0895904818802086
- Klassen, R. M., & Usher, E. L. (2010). Self-efficacy in educational settings: Recent research and emerging directions. *The Decade Ahead: Theoretical Perspectives on Motivation and Achievement*, 16, 1–33. doi:10.1108/s0749-7423(2010)000016a004
- Kyndt, E., Berghmans, I., Dochy, F., & Bulckens, L. (2014). ‘Time is not enough.’ Workload in higher education: A student perspective. *Higher Education Research & Development*, 33(4), 684-698. <https://doi.org/10.1080/07294360.2013.863839>
- Lunenburg, F. C. (2011). Self-efficacy in the workplace: Implications for motivation and performance. *International Journal of Management, Business, and Administration*, 14(1), 1-6.
- Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. Sluyter (Eds.), *Emotional development and emotional intelligence: Educational Implications* (3– 31). New York, NY: Basic Books.
- Ministry of Education. (2013). *Malaysia Education Blueprint 2013-2025*. Putrajaya: Ministry of Education Malaysia.
- Ministry of Education. (2015). *Malaysia Education Blueprint 2015-2025*. Putrajaya: Ministry of Education Malaysia.
- Ministry of Higher Education. (MOHE). (2017). *Higher Education Statistics 2016*. Putrajaya: Ministry of Higher Education Malaysia.
- Mok, K. H., Wen, Z., & Dale, R. (2016). Employability and mobility in the valorisation of higher education qualifications: the experiences and reflections of Chinese students and graduates. *Journal of Higher Education Policy and Management*, 38(3), 264-281.
- Monteiro, S., Almeida, L., & Aracil, A. G. (2016). Graduates’ perceptions of competencies and preparation for labour market transition: The effect of gender and work experience during higher education. *Higher Education, Skills and Work-Based Learning*, 6(2), 208-220. <http://dx.doi.org/10.1108/HESWBL-09-2015-0048>
- Ngang, T. K. (2011). Soft skills integrated in sustainable higher education. *Journal of Modern Education Review*, 1(2), 99-110.
- Olson, J. S. (2014). Opportunities, obstacles, and options: First-generation college graduates and social cognitive career theory. *Journal of Career Development*, 41(3), 199-217.
- Omar, M. K., Bakar, A. R., & Rashid, A. M. (2012). Employability skill acquisition among Malaysian community college students. *Journal of Social Sciences*, 8(3), 472-478.
- Partnership for 21st Century Skills. (2008). 21st century skills, education & competitiveness. Tucson, AZ.
- Pavlin, S., & Svetlik, I. (2014). Employability of higher education graduates in Europe. *International Journal of Manpower*, 35(4), 418-424.
- Peck, D. (March, 2010). How a new jobless era will transform America. *The Atlantic*. Retrieved from <https://www.theatlantic.com/magazine/archive/2010/03/how-a-new-jobless-era-will-transform-america/307919/>
- Pinder-Grover, T., & Groscurth, C. R. (2009). Principles for teaching the millennial generation: Innovative practices of UM faculty. *Center for Research on Learning and Teaching*, 26, 1-8.
- Pinquart, M., Juang, L. P., & Silbereisen, R. K. (2003). Self-efficacy and successful school-to-work transition: A longitudinal study. *Journal of Vocational Behavior*, 63(3), 329-346. doi: 10.1016/S0001-8791(02)00031-3



- Rangel, E., Sueyoshi, A., & Samsudin, R. S. (2016). Graduate job markets, higher education policy and employment in Japan, Malaysia and Mexico. *Journal of the Faculty of International Studies of the University of Utsunomiya*, 1-22.
- Raslie, H., Pit. S., & Ting, S. (2016). Millennials' Expectations of Life at the University and the Workplace: A Malaysian Perspective. *International Journal of Education*, 8(3), 71-84. doi: 10.5296/ije.v8i3.9982
- Saklofske, D. H., Austin, E. J., Rohr, B. A., & Andrews, J. J. (2007). Personality, emotional intelligence and exercise. *Journal of Health Psychology*, 12(6), 937-948. doi: 10.1177/1359105307082458
- Schech, S., Kelton, M., Carati, C., & Kingsmill, V. (2017). Simulating the global workplace for graduate employability. *Higher Education Research & Development*, 36(7), 1476-1489.
- Shakir, R. (2009). Soft skills at the Malaysian institutes of higher learning. *Asia Pacific Education Review*, 10(3), 309-315. doi: 10.1007/s12564-009-9038-8
- Sani, R. (July 19, 2017). iCGPA in full force by 2019. *New Straits Times*. Retrieved from <https://www.nst.com.my/education/2017/07/258710/icgpa-full-force-2019>
- Tsang, S. K., Hui, E. K., & Law, B. (2012). Self-efficacy as a positive youth development construct: a conceptual review. *The Scientific World Journal*, 12, 1-7. doi: 10.1100/2012/452327
- Udayar, S., Fiori, M., Thalmayer, A. G., & Rossier, J. (2018). Investigating the link between trait emotional intelligence, career indecision, and self-perceived employability: The role of career adaptability. *Personality and Individual Differences*, 135, 7-12. <https://doi.org/10.1016/j.paid.2018.06.046>
- Usher, E. L., & Pajares, F. (2008). Sources of self-efficacy in school: Critical review of the literature and future directions. *Review of Educational Research*, 78(4), 751-796. doi: 10.3102/0034654308321456
- Van der Velden, R., & Humburg, M. (2013). What is expected of higher education graduates in the 21st century? (No. 013). Maastricht University, Research Centre for Education and the Labour Market (ROA), 1-32.
- Vuolo, M., Staff, J., & Mortimer, J. T. (2012). Weathering the great recession: Psychological and behavioral trajectories in the transition from school to work. *Developmental Psychology*, 48(6), 1759-1773. doi:10.1037/a0026047
- Wan, C., Sirat, M., & Razak, D. A. (2018). Education in Malaysia Towards a Developed Nation. *ISEAS*, 1-19.
- Wiener, K. K., & Oei, T. P. (1999). Predicting job seeking frequency and psychological well-being in the unemployed. *Journal of Employment Counseling*, 36(2), 67-81. <http://dx.doi.org/10.1002/j.2161-1920.1999.tb01010.x>
- World Economic Forum. (2016, January). The future of jobs: Employment, skills and workforce strategy for the fourth industrial revolution. In *Global Challenge Insight Report*, World Economic Forum, Geneva.

## Gender Relationship on Accepting Reggio Emilia Approach in Rural Early Childhood Development Centres, among Parents in Katsina State, Nigeria

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### ABSTRACT

*Most rural areas in Africa are confounded with unfavourable gender relationship; strategies are needed, not only being representative but also participatory. This could help in educating the rural populace as the digital society and enhance integrating humanistic and Scientific Values. The study look at gender-based barriers for girl-children manifested more than that of boys due to the training in household chores, instead of schooling. There are many girls-children at school age, but engaged in household chores and street hawking in northern Nigeria. This suggests the need for sensitive gender policy, to focus at local government and rural community levels. In addition, strong advocacy in respect to gender relationship is required with support from religious and community leaders in both the urban and rural areas. The success story of Reggio Emilia Approach in Early Child Development (REA-ECD) acceptance in rural areas of Katsina State Nigeria may be a good motivating factor for governments, NGOs and other development partners to redesign their policies toward this course. To measure the acceptance of the rural populace as parents of digital children in today's society, Nominal Group Techniques (NGT) was conducted using two groups of twenty parents in each, (males and females) on the acceptance of REA-ECD program. The parents were selected randomly from the register list of the children of the REA-ECD centres. The analysis shows that, issue of female teaches, schools safety and friendly facilities are required to create favourable gender coexisting. The provision of basic facilities in ECD centres safe schools for girls-child and female teachers in rural areas increases gender parity in rural areas. In addition, access to educational opportunities which in long run, will ease rural life and decrease the urban-rural divide and migration. This study is the first of its nature in Katsina State in particular and northern Nigeria at large. The study measured influence of some variables on the acceptance of REA-ECD in rural area of Katsina state. It contributes towards more factors of acceptance in the area of REA-ECD in rural areas of Katsina State, Nigeria.*

**KEYWORDS:** Gender Relation, Acceptance Reggio Emilia, Early Child Development, Rural Area,

### 1.0 INTRODUCTION

In rural areas of northern Nigeria, gender inequality in education is closely linked to, and lie beneath, traditions, vulnerability and poverty (Abdullah, 2014). Resource-poor households with strong adhered to culture (Akunga, 2010), are the one eliminating their children, especially girls from schools (Care Malawi, 2010). The cultural practices and traditions encourage gender-based violent behavior as major causes of educational disparity between males and females as well as boys and girls in rural areas. The majority of population of Katsina (78.7%) is almost located in the rural areas (Haruna & Saifullahi, 2012). The gender violent behavior in rural areas takes forms of harassment; abuse; bullying; intimidation; and insults. In addition, gender violent behaviors can be in form of emotional threat and abuse, such as tempting someone into a marital relationship under fair or false pretences, and psychological threats to someone's life. In most rural settings these affect both boys and girls; however, the girls are more disadvantaged and victimized in rural Katsina because of their gender. Reggio Emilia Approach to Early Childhood Development (REA-

ECD) is an environmental friendly and gender-based approach for young children which was originates from Italy. The REA-ECD was introduced to Nigeria in 2014, however, presents a pivotal shift in educating the digital society in the rural of northern Nigeria.

The introduction of REA-ECD program in most northern states of Nigeria such as Jigawa, Kano, Katsina Sokoto and Zamfara focuses on pre-school rural children as innovative, capable and competent in expanding knowledge. Prior to this, there is a Girls Education Empowerment Program (GEEP), which operates in Katsina state. It is one of the guiding frameworks for education development and poverty reduction among rural girls and their families. This program may serve as a basis for mass acceptance of REA-ECD in the rural areas of Katsina state. However, both of the programs place human capital development through education as the central pillar to poverty reduction in rural areas. The expectation on these programs is that, this shift in educating rural children may be used to move Katsina states, northern regions and the country at large toward greater economic and social progress. This no has doubt will help in reducing pressing insecurity issue in the northern Nigeria. In addition, the REA-ECD program for rural children will create a strong sustainable school readiness and willingness among the digital rural children particularly girls-child in northern Nigeria. This was in line with Sustainable Development Goals (SDGs) that put the education for all children and girls and women education at the forefront. From the 19 states in Northern part of Nigeria, Katsina State is chosen for the study because it is the first area introduced to western education in the whole North of Nigeria.

The Katsina state government in collaboration with UNICEF and other development partners like Global Partisanship in Education (GPE) and Local Government Education Authorities (LGEAs) are responding positively to this program and acknowledge the evidence-based benefits of having educated female teacher's inclusiveness in rural educational environment. Some studies conducted in Southern African countries indicate that children are four times more likely to enroll and remain in school because of parental influence. This was in comparison to other factors such as availability of physical facilities at the schools which also need parents acceptance based on their knowledge of the usability. However certain traditional and cultural practices in rural areas of northern Nigeria such ceremonies prioritizes and enforced early marriages for both boys and girls. In most cases this often involves negative rather than positive parental influence that affects girls more than boys. The issue of early pregnancy is one of what affect girls-child that resulted from the early marriage at teenage. This problem is attributed to poverty on poor families who are majority and poor knowledge and education about the human values. There is a unique and persistent gender issue that has become unresolved for a long time (Kabir, 2012). This is issue of preference for sons over daughters, considering girls as property transferred from the fathers to the husband's house, as well as considering her education as less valuable and less important to the development of the society. However, the parent acceptance of REA-ECD program reveals that, quite numbers of family choose to make sacrifices necessary to keep their children (boys and girls) in school. Possibly this is a "function of the perceived benefits of schooling of both gender by both the parents and the pupils.

## **2.0 LITERATURE REVIEW**

The rural areas in Nigeria are inhabited by the bulk of the population that serves the country's markets for domestic products. Their primary economic activity is only subsistence agriculture and the foundation of the Nigerian economic development. In spite of these vast advantages, the rural areas of Nigeria remain unattractive for living (Steve & Williams, 2012). One of the reasons is insufficient fundamental infrastructural facilities for living, such as clean water supply, electricity, roads, network, schools and health care facilities. The rural women and men are dependent on seasonal agriculture for food and income. Rural poverty, according to Nwagwu (2003), is a stage of one being unable to have good control over his or her environment. This situation may leads to the inability to possess basic materials for sustaining livelihood. Olayemi (2012) reported that, the rural poverty in Nigeria is rising, and affects over 100 million people living on less than N360 (1USD) a day. Haruna and Saifullahi (2012) also observed that, the poor are excessively located in rural areas, and comprise more women and children than adult men. This may be due to the nature of high polygamy marriage practices in the rural areas and rural-urban migration in which more than 70% involves adult males.

Therefore this shows the need for policy on development to be gender-sensitive, because the rural poor are always synonymous with poor women (Jariah, Zumilah, & Lumayag, 2009). In other words, rural development policy that would combat the poverty needs to be designed for empowerment (Zumilah, 2010).

and Vijayanthi, 2002). There are many methods to empowerment, of which education is considered as one of the crucial ways in this direction. This has also added value and benefit on human capital development (Aseey 2010; Rabi 2007). According to Dauda, Asiribo, Akinbode, Saka and Salahu (2009), gaining access to information resources, and mentoring are important attributes for empowering the rural poor. Similarly, Blench and Ingawa (2004) recommended awakening the rural populace through education. It is believed that education, as in theory and practice; increase the awareness among the rural poor. Towards the importance of education, poor in the rural areas need to have information, enlightenment and more skills that may increase their living standard. To improve the rural poor and their poverty situation, there is need for analysis to understand gender issues as its dynamics is crucial (Jariah, 2012).

The rural area of Nigeria constitutes million of children (UNICEF, 2017 and NPC, 2014). These teaming children were recently having opportunity in the attending REA-ECD centers. Although the rural societies are conservatives, (Zumilah, 2010), for example in the rural areas of Katsina state, there is historical problem on enrolling children, especially girls-child into formal school system (Abdullahi, 2018; Abdullahi, 2014; Kabir, 2012; Akunga, 2010 and Rabi, 2007). However, the success story of accepting the REA-ECD program by the rural parents for their children in Katsina state has laid foundations for favorable gender relationship in the state. This encourages governments, NGOs and other development partners, to redesign their policies toward this course. Since the Governments and NGOs are putting efforts and resources in rural REA-ECD program (Patricia, Holly & Glenda, 2015). This opportunity for long time was deprived for the rural children, despite the benefits it is offering in lives of individuals. The REA-ECD being an environmental friendly and gender sensitive -based approach for pre-school children which was originates from Italy. It was introduced to Nigeria in 2014, with view to presents a fundamental shift in educating rural children within this digital era and society in northern Nigeria for their better tomorrow. The REA-ECD recommends the use of local resources from local environment at low or no cost, and collaboration among children, teachers and parents to explore the resources and expand the knowledge (Patricia, Holly & Glenda, 2015). The local environmental resources and pedagogical documentations as in Edwards, (2005), make learning visible and interested. The REA-ECD program also creates and improves the needed school readiness among the vast number of rural children.

### **3.0 METHODOLOGY**

In this paper, there are two step data collection and analysis processes employed. Firstly, the nominal group techniques (NGT) was conducted to explored factors influences the acceptance of REA-ECD program by the rural male and female parents. There are twenty (20) male and female participants whose were asked to write at least 3-reason for accepting to enroll their children in REA-ECD program. The data were analyzed through thematic analysis. Five themes were concluded as identified factors of acceptance namely 'Facilitating Condition' (Supports from Government, NGO and other development partners); 'Hope' (Parents future hope, ability hope, contribution hope, and enrolment hope); 'Awareness' (Parent access to information, access to network,, past experience, & personal awareness); 'Participation' ( participation in LGEAs, PTA, SBMS, MAs and others) 'Motivation'(Motivation by teachers, pupils, learning environment, government, development partners and general nature of the program ). The used of NGT in this study therefore, was considered as a scoping study (Arksey, & O'Malley 2005; and Wallang, 2018). The scoping study is an increasingly becoming popular approach to understand the research context (Wallang, 2018; Levac, Colquhoun, & O'Brien, 2010 Arksey & O'Malley, 2005). As in Daudt, van Mossel, & Scott, (2013), it is a process for mapping the key ideas about research areas that are not comprehensively studied before. These such research ideas be supported by recommended source hence the topics areas have not been reviewed comprehensively. (Wallang,2018; Conboy, Fitzgerald, & Mathiassen, 2012; Rumrill, Fitzgerald, & Merchant, 2010 and Walker, 2005). Generally, a scoping study is suitable when there is need for; (1) identifying what we know and what we do not know about a phenomenon (Wallang, 2018); (2) providing conceptual clarity on a specific topic (Davis et al., 2009); (3) clarifying and refining a complex concept in research inquiries; and (4) conduct a preliminary assessment on the main concepts underpinning the research area (Arksey & O'Malley, 2005), and used as a basis for next stage of research (Daudt, van Mossel, & Scott, 2013).

Secondly, Pearson product moment correlation was used to determine relationship between the identified factors from scoping study and acceptance of REA-ECD. The correlation analyses as suggested by (Kamariah, 2018; Conboy, Fitzgerald, & Mathiassen, 2012; Leech, Barrett & Morgan, 2007; and Cohen,

Manion & Morrison, 2007), were also conducted to figure out the relationship on gender among male and female respondents. This is used in the methods where there is need to explore and test a relationship based on the existing theories (Lodico, Spaulding, & Volgtle, 2006; and Gay, Ariesian, & McMillan (2010). Lodico, et,al (2006) have also established that, this type of research analysis is commonly used when involved collection and analysing the numerical data for the existing relationship. The justification for using correlation in this study is that, Lodico et, al. (2006) said it allows identifying direction as well as strengthen and weakness of the relationship from the data collected. The past studies also used correlation analysis in studying similar factors in technology acceptance studies (Wallang, 2018; Cohen, Cohen, West, & Aiken, 2013 and Asiri, 2012).

The structured questionnaire as instruments were prepared through adoption and adaption as suggested by Cohen, Manion, & Morrison (2007) that, researchers were in most case advised to adapt and use the previous validated instruments. The most appropriate mean for determining reliable information during data collected were using a structured questionnaire Cohen, West, & Aiken (2013). The research instrument used in this study as structured questionnaire was also re-validated by the expert in the fields and approved by the University Research Ethics Committee. The data was collected from the males and females parent of the rural REA-ECD children as the respondents of this study. The respondents of this study are those parents who accepted and agreed to enrol their children in REA-ECD program. These parents have become as parts of stakeholders in rural REA-ECD program. The stakeholders' involvement in a study as explained by Fine, Torre, Boudin, Bowen, Clark, Hylton, Martinez, Roberts, Smart and Upegui (2003), helps in ensuring reliable measurement. The study respondents were randomly selected from 11 local government areas (LGAs) of Katsina state. The random selection of the respondents were best to ensure that all members have equal chance to be selected in the sample (Ary, Jacobs, Razavieh, & Sorensen, 2006).

#### **4.0 RESULTS AND ANALYSES DISCUSSION**

The NGT processes used in this study is to map the key ideas about and identify all possible acceptance factors for REA-ECD and strengthen what was exist in the theories and previous related studies. The NGT findings from the thematic analysis of identified factors here are used to strengthen other findings from the quantitative analyses. In line with this the thematic analyses findings as conducted on identified factors, were presented in the following Table 1.

**Table: Presents Findings from NGT Thematic Analyses**

<b>Opinion on the REA-ECD Acceptance</b>	<b>Codes</b>	<b>Category</b>	<b>Code</b>	<b>Themes</b>
Government Building, salaries wages, & policy NGOs, & UNICEF facilities Development partners program Community infrastructures	[1a],1b,1c &1d [1b,], 1a,1c,&1d [1c], 1a,1b,&1d [1d],1a,1b,&1c]	Supports	[1]	Facilitating Condition
In Sch. Board Mgt Committee In Parent Teachers Association In Local Govt. Educ. Authority In Mothers Association (MA)	[2a] [2d] [2b] ,[2a, & [b2d] [2c] [3a, 3b, &3c] [2d] [2a,2b]	Meeting	[2]	Participation
To enrol other children To bright the future To improve ability To witness contribution To benefit	[3a][3e, &2d,] [3b] [3c] &[3e] [3c][4a,4b,4c&4e [3d][3e,4e] [3e][4b,4d]	Hope	[3]	Hopes
Due to listening current affairs Due to networking with others Due personal experiences Due to personal awareness Due to level of education	[4a][3a,3c, &5b] [4b][1c][2a,3e] [4c][3a][3c,]&[3e] [4d],[3a,3b,&3c] [4e] [2a,2c,&3e]	Information	[4]	Awareness
By serving teachers, By neighbouring pupils, By Government supports By development partners By nature of the program	[5a] [1a,1b,3c][3e] [5b] [3b,3c,&1d] [5c] [1a] [3b][2a] [5d] [1c] [1d] &[4c] [5e] [2b,&1b]	Captured	[5]	Motivation

The five factors identified from NGT scoping study were found responsible for acceptance of the REA-ECD by the rural parents as respondents of this study. These factors are described as follows:- 'Facilitating Condition' constitutes all supports from Government, NGO and any other development partners; 'Hope' encompasses parents hope for future, hope for ability, hope for contribution and hope for further enrolment; 'Awareness' covered Parent access to information, access to network, past experience, & personal awareness; 'Participation' include participation in LGEAs, PTA, SBMS, MAs and others official or personal meetings; 'Motivation' considered any motivation by teachers, pupils, learning environment, government, development partners and general nature of the program. Therefore the used of NGT in this study was considered as a scoping study (Arksey, & O'Malley 2005; and Wallang, 2018). The confirmation of strength of all the identified factors from the NGT scoping study and their existence in theories and previous literatures provided the ground for putting them into research instruments as mention above. This give next direction for further analysis using the quantitative process. Therefore the identified factors were considered to be parts of acceptance variables in the context of REA-ECD acceptance study as proposed and used in this study. This study was engendered with the focus on husbands and wives Zakiah, & Zumilah (2018), as parents of the REA-ECD enrolled children and respondents of the study.

The relationship between REA-ECD acceptance and the identified factors from the scoping study using NGT was captured through the Pearson Product-moment Correlation Coefficient value. The overall relationship between REA-ECD acceptance and the identified factors were found significant and positive with (0.485\*\* and 0.562\*\*), for both males and females respondents respectively. However the relationship between overall identified factors and REA-ECD acceptance was moderate ( $p < 0.000$ ). Furthermore, small and moderate, positive significant relationship between individual identified factors and acceptance of REA-ECD was also found. The small relationship were in facilitating condition ( $r = 0.317$ ), awareness ( $r = 0.347$ ), and hope (0.362)  $p < 0.000$  for male respondents. The positive moderate relationship are between the participation (0.522), motivation (0.667) and REA-ECD acceptance for male respondents. Wonderfully, there were moderate positive relationship throughout the identified factors and REA-ECD acceptance for female respondents. The beautiful correlation in the female respondents scores are found in the facilitating condition ( $r = 0.504$ ), awareness ( $r = 0.560$ ), participation (0.490), motivation (0.544) and hope (0.480) with  $p < 0.000$ . Table 2.

**Table 2: Correlation between NGT Identified Factors and REA-ECD Acceptance for Male and Female Respondents**

Variables	Y (REA-ECD Acceptance)		
	Dependent & Independent Variables (Y & X)	Pearson Correlation Sig. (2-tailed)	Y (REA-ECD Acceptance)
			Males Respondents (r values)
			Female Respondents (r values)
	Y(Acceptance of REA-ECD)	0.000	1.000
	X(Identified Factors)	0.000	0.485**
	x <sub>1</sub> (Facilitating Condition)	0.000	0.317**
	x <sub>2</sub> (Awareness)	0.000	0.347**
	x <sub>3</sub> (Participation)	0.000	0.522**
	x <sub>4</sub> (Motivation)	0.000	0.667**
	x <sub>5</sub> (Hope Expression)	0.000	0.362**

\*\* . Correlation is significant at the 0.01 level (2-tailed).

In general, there were positive significant correlations between all the identified factors and REA-ECD acceptance among both the respondents by sex disaggregated. These findings are in line with those of Azad and Maleki (2007), Rooster (2006), and Mahdavi and Saburi (2003) were the facilitating condition as educational support and awareness as well as the motivation from education and its future hope, found positively correlated with acceptance. The table 2, presents results of correlation between NGT identified factors and REA-ECD Acceptance for both male and female respondents. As stated earlier the overall correlation between REA-ECD acceptance and the identified factors were positive and significant (Table 2) for both males and females respondents. Although the correlation was moderate, but the sustainability on this type of program on children that involve both male and female parents, particularly in the rural areas of northern Nigeria, would poster rural development. This is because any development program particularly for future adults, is doom to failure when neglect the involving women (Jariah, 2012). The children program (innovation) for future, that involved both girls and boys as well as males and females have all possible tendencies to scale up and yield development. As such, researchers in Nigeria particularly rural areas of northern parts need to involve the opinions and perception of both sex (gender) consideration for appropriate measurement and reliable outcome. Furthermore, in REA-ECD training and capacity building policy should consider both males and females. This is because any program which is not engendered was endangered.

## 5.0 CONCLUSION

In the conclusion, this study identified and concluded 5-themes from the thematic analysis of the NGT scoping study. These five were considered part of the acceptance factors in the field of acceptance study. However this study has paid particular emphasis on the REA-ECD acceptance on the gender basis focussing on both males and females respondents respectively. The acceptance of the development program (as innovation) that involved males and females have all the tendencies to scale up, and be sustainable. This is because any program which is not engendered was endangered. Therefore in a research involving human opinions and perception gender consideration be given priority. Furthermore, in REA-ECD training and capacity building, the opportunities should be granted to both males and females. However, there is need for relevant policies and programs that could to enhance both males and females involvement in any most program and research work. The program that involve children need both male and female parents participation, particularly in the rural areas so as to poster sustainable rural development. The development program involving future adults need to policy that consider input of males and females to avoid failure. As such, researches in rural context, northern Nigeria in particular need to be considering gender in opinions and perception this is appropriate considering valid measurements and reliable outcome. In the context of REA-ECD training and capacity building, policy should consider both males and females participants. This is because any program which is not engendered at the end it will be endangered.

## REFERENCES

- Abdullahi I. (2014). *Impact of Girls Education Empowerment on the Economic Wellbeing of Katsina Rural Society Nigeria*, (Unpublished Master Thesis,) in Gender and Development, Universiti Putra, Malaysia.
- Akunga, A. (2010). Northern Nigeria: Approaches to enrolling girls in school and providing a meaningful



- education to empower change. In *Proceedings of Engendering Empowerment: Education and Equality Conference* (pp.17-20). Dakar, Senegal: UNGEI.
- Arksey, H. and O'Malley, L. (2005) Scoping Studies: Towards a Methodological Framework. *International Journal of Social Research Methodology*, **8**, 19-32. <http://dx.doi.org/10.1080/1364557032000119616>
- Ary, D., Jacobs, I., Razavieh, A., & Sorensen, C. (2006). *Introduction to research in education*. Belmont, CA: Wadsworth
- Asey, A. (2010, December). *Empowering rural girls through self initiative programmes: The case of Siwindhe Nyiri -Oruba mixed and Lifunga girls schools*. Paper presented at the Rehovot 2010 Conference on Inclusive Sustainable Development Initiatives: Sharing Regional and Local Best Practices, Rehovot, Israel.
- Asiri, M. S., (2012) Factors Influencing Utilization of Learning Management System, among University Faculty Members in Saudi Arabia, (Unpublished Thesis of Doctor of Philosophy) Universiti Putra Malaysia.
- Azad, T., & Maleki, A. (2007). Traditional and modern values: A study on their relationship, at macro and micro family levels. *Journal of Nameh-yel Olumea-e Ejtima*, **30**, 97-121.
- Blench, R. & Ingawa, S. A. (2004). *A practical guide for National Fadama Development II facilitators on conflict analysis and management*. Abuja, Nigeria: World Bank PCF/FGN Projects Co-ordinating unit.
- Care Malawi (2010) Girls' Empowerment Program (P2) for Rural Adolescent Girls of Primary and Post-Primary School Age, Approximately 10-18 Years.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2013). *Applied Multiple Regression and Correlation Analysis for the Behavioural Sciences*. Routledge.
- Cohen L., Manion L., & Morrison K. (2007), *Research Methods in Education*. New York: Routledge, Tylor and Francis Group.
- Conboy, K., Fitzgerald, G., & Mathiassen, L. (2012). Qualitative methods research in information systems: Motivations, themes, and contributions. *European Journal of Information Systems*, **21**(2), 113–118. <http://doi.org/10.1057/ejis.2011.57>
- Dauda, T. O., Asiribo, O. E., Akinbode, S. O., Saka, J. O., & Salahu, B. F. (2009). *An assessment of the roles of irrigation farming in the millennium development goals*. Abuja, Nigeria: Centre for Food and Agricultural Development.
- Daudt, H.M.L., van Mossel, C. and Scott, S.J. (2013) Enhancing the Scoping Study Methodology: A Large, Inter professional Team's Experience with Arksey and O'Malley's Framework. *BMC Medical Research Methodology*, **13**, 48. <http://dx.doi.org/10.1186/1471-2288-13-48>
- Davis, K.; Drey, N.; Gould, D. (2009). What are scoping studies? A review of the nursing literature. *Int. J. Nurs. Stud.* 2009, **46**, 1386–1400, doi:10.1016/j.ijnurstu.2009.02.010.
- Edwards, S. (2005). Children's learning and developmental potential: examining the theoretical informants of early childhood curricula from the educator's perspective. *Early Years*(25)1, 67-80.
- Fine, M., et al. (2003). Participatory action research: From within and beyond prison bars. In P. M. Camic, J. Jean, & L. Yardley (Eds.) *Qualitative research in psychology: Expanding perspectives in methodology and design* (pp. 173-198). doi:10.1037/10595-010
- Gay L. R., & Aresian, P., McMillan R, (2010), *Educational Research: Competencies for Analysis and Applications* (6<sup>th</sup> Ed.). Ohia Merill Pretice Hall, Pearson Education Inc.
- Jariah, M. (2012, February). *Four step process: A stakeholders analysis on vulnerable stakeholders*. Paper presented at the ASEM Aquaculture platform WP7 Workshop on Empowering Vulnerable Stakeholder Group in Aquaculture, FELDA Residence, Kuala Terengganu, Malaysia.
- Jariah, M., Zumilah, Z., & Lumayag, L. A. (2009). Rural women: From family farm to microenterprise. In Jamilah A. (Ed.), *Readings on women and development in Malaysia: A sequel: Tracing four decades of change* (pp. 311-341). Kuala Lumpur, Malaysia: MPH Publishing.
- Haruna, M. A., & Saifullahi, S. I. (2012). Does access to finance reduce poverty? Evidence from Katsina state. *Mediterranean Journal of Social Sciences*, **3**(2), 575-581. doi:10.5901/mjss.2012.v3n2.575
- Kabir, M. (2012). *The impact of British colonial policies on women education in Northern Nigeria: With particular reference to Katsina Emirate 1993-2003* (Unpublished doctoral thesis). Khartoum University, Sudan.
- Kamariah, A., (2018), *Validity and Reliability; Chapter eight of Franke & Wale: [A Lecturer Notes] Series*



- of the Research Methodology. Retreated from Faculty of Education, University Putra Malaysia, Serdang, Selangor.
- Lodico, M., Spaulding, D., & Volgtle, K. (2006), *Methodes in Eductional Resarch*; San Francisco: Jossy-Bass.
- Leech N. L., Barrett, K. C., & Morgan, G. A. (2008). *SPSS for intermediate statistics use and interpretation* (3rd ed.). Lawrence Erlbaum Associate, Taylor and Francis Group.
- Levac, D., Colquhoun, H. and O'Brien, K.K. (2010) Scoping Studies: Advancing the Methodology. *Implementation Science*, **5**, 69. <http://dx.doi.org/10.1186/1748-5908-5-69>
- National Population Commission (NPC) [Nigeria] and ICF International. (2014). Nigeria Demographic and Health Survey 2013. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF International.
- Nwagwu, J. U. (2003). Poverty reduction in rural Nigeria through targeting approach and legislations. *International Journal of Agriculture and Rural Development*, **4**(1), 124-130. doi:10.4314/ijard.v4i1.2555
- Olayemi, R. I. (2012, February 14). Nigeria: 100 million citizens in absolute poverty, bureau says. *Daily Trust*. Retrieved from <http://dailytrust.info>
- Patritia, F., Holly, N., and Glenda, B. (2015), Reggio Emilia: From Theory to Practice; A train-the Trainer Program for UNICEF-NCCE, Nigeria. Early Childhood Development Initiative.
- Rabi, M. (2007). Under representation of female in science, technology and mathematics: For UBE Program. In Nzewi (Ed.), *Proceedings of 50th Anniversary STAN Conference*. Sokoto, Nigeria.
- Rumrill, P.D., Fitzgerald, S.M. and Merchant, W.R. (2010) Using Scoping Literature Reviews as a Means of Understanding and Interpreting Existing Literature. *Work*, **35**, 399-404.
- Steve, O., & Williams, O. (2012). Community self-help projects and rural development in Ohafia local government area. *Journal of Sustainable Development in Africa*, **14**(4), 57-69.
- UNICEF. (2017). *UNICEF Annual Report 2017 Nigeria: A wake up call, situational assessment and analysis*. Abuja, Nigeria: National Planning Commission and UNICEF.
- Vijayanthi, K. (2002). Women empowerment through self-help group: A participatory approach. *Indiana Journal of Gender Studies*, **9**(2), 263.
- Wallang, M., (2018), *Determinants that Influence Citizen's Usage of Different E-Government Services: A Malaysian Case Study* (Unpublished Thesis) of Doctor of Philosophy at School of Social Science, University of Queensland.
- Zakiah, A. and Zumilah, Z., (2018) Exploring Female Involvements in Malaysian Micro and Small Scale Aquaculture Operation (MiSAO)
- Zumilah, Z. (2010). *Indicators of micro enterprise development for small family business in rural Peninsular Malaysia* (Unpublished doctoral thesis). University Putra Malaysia, Serdang, Selangor.

## Emotional Intelligence among Malaysian Young Adults in Community College, Jitra

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### ABSTRACT

*There is a rising tide of understanding among public, Emotional Intelligence (EI) researchers and psychologists that EI is the “missing piece” of education. Educators should give a serious consideration of infusing EI learning into the standard academic curriculum. Accordingly, transition to higher education is one of the major developmental challenges for young adults. The root causes of this challenge include management of emotions, adaption to new academic circumstance and establishment of healthy interpersonal relationship with others. In this regard, EI is said to be a protective factor for young adults, as it leads to a more effective coping and social relationship. Although the EI could have a positive impact on students’ development, there are just a few studies devoted to investigate EI among Malaysian young adults, particularly in Jitra. Thus, the study was to examine the level of EI among college students from four certificate programmes, including Automotive, Computer System and Support, Electrical Technology, and Draughtsman. In addition, the study also investigated the difference of the EI level between participants from four certificate programmes. Data collection occurred with cross sectional survey approach incorporating the Schutte Self-Report Emotional Intelligence Scale (SSREI). Samples of the research consisted of two hundred and twenty eight certificate students, with age range between 18 and 25 years old, from Bandar Darulaman Community College. The research revealed that 53.9% of students possessed medium level of EI, 43.4 % reported low level of EI and 2.6% scored highly in the EI assessment. Data analysis indicated that there were significant differences in EI among students from different programmes and majority of college students scored low in the aspect of emotional expression and appraisal of emotions in the self. In addition to academic knowledge and technical skills, this potentially represents Malaysian young adults need emotional and social skills to achieve their success in both academic and interpersonal context. As EI can be trained and educated, the implication of this study would be needed to formally establish online EI training and to provide concrete guidelines for EI practices in higher education institutes. Further research can be conducted to discover the influence of role expectation, gender, and cultural practices on EI among this population.*

**KEYWORDS:** Emotional Intelligence, Young Adults, Community College

### 1.0 INTRODUCTION

In Malaysia, majority of the college students are young adults with age between 18 and 25 years. Conceptually, early adulthood is a developmental stage where young adults are struggling with uncertainty, ambiguity and feeling in-between (Kok, 2015; Syed & Mitchell, 2013). This corresponds to a study by Cheng, McDermott, and Lopez (2015), who have identified emerging adulthood as a significant developmental stage for most of the young adult-aged college population. Entering higher education institutes is one of the developmental challenges for young adults as the transition process requires young adults to leave their family members, establish new social network, adapt to different academic circumstance, living arrangements and learning styles (Al-Qaisy, 2010). In general, a success transition adjustment to college will facilitate positive developmental changes. This enables young adults to become more independent, mature and competent in education. However, literatures revealed that this is not the case. Mental health problems, such as emotional disorders, suicidal ideation, adjustment issues, anxiety and depression are more likely to occur in early adulthood, particularly in the initial stage of transition to higher education (Abdullah, Elias, Uli, Mahyuddin, 2010; Kok, Van Schalkwyk, & Chan, 2015; Ramli, Alavi, Mehrinezhad, & Ahmadi, 2018). The huge obstacles to college experience might due to the poor emotional regulation, unhealthy interpersonal relationship, and malfunctioning coping strategies (Abdullah et al., 2010; Görgens-Ekermans, Delpont, & Du Preez, 2015). This situation can become deteriorate when students failed to meet lecturer and family’s expectations on academic achievement. The inadequate and helpless feeling may threaten their self-esteem and subsequently, the psychological wellness of students will be affected. For these reasons, young adults’ developmental issues should be highlighted in Malaysia to find ways to address young adults’ transition challenges in higher education.

Fortunately, a growing amount of studies have emerged on Emotional Intelligence (EI) as yet another protective factors that may have positive impacts on young adult development (Cheung, Cheung, & Hue, 2014; Hill & Maggi, 2011; Howell & Miller-Graff, 2014). Goleman (1995) offered a rational argument for emotional intelligence. He believed that EI is important because it relates to health, emotional wellness, family relationship, career, and performance in everyday life. Torubeli and Ambakederemo (2013) also verified that people with high EI have better problem solving skills, interpersonal relationship and performance than those who deficit in EI skills. As described by Mayer and Salovey (1989), EI is the core element of social intelligence that involves the ability to administer one's own and others' emotions, to differentiate emotions, and to use emotions in guiding their thinking and behaviours (as cited in Akduman, Hatipoğlu & Yüksekbiçgili, 2015). Individuals' ability to voluntarily regulate, activate, inhibit and display emotional response to fit social events have been considered as a basic demonstration of EI. An another significant line of study related to EI is the differential effects between general mental ability and EI in academic achievement and social interaction among undergraduates with a mean age of 22 in higher education institutes. After controlling for personality traits and general mental health, the findings revealed that EI have significant impacts on students' academic achievement and social interaction (Song et al., 2011). The results might imply that, traditional cognitive intelligence is not the most unique power in determining students' success. While the "non-intellective" quality such as EI is as significant as, or contributes beyond cognitive in determining students' achievement in both academic circumstance and society.

In summary, professionals, psychologists, educators, counsellors, indeed, every person should care deeply about young adults' development. Examination of young adults' EI in this developmental stage is necessary as it serves as a stepping stone of establishing EI training for young adults as well as helps educators to have better understanding on young adults' emotional competence. However, a review on EI showed that a very few studies have been devoted to understand the level of EI among Malaysian young adults in higher education institutes, such as a college (Ebinagbome & Nizam, 2016). Therefore, in order to address the literature gap, the central objective of this quantitative study was to examine the level of EI among young adults in education.

### **1.1 Objectives of the study**

Specifically, present study seeks to investigate the following objectives:

1. To determine the level of EI among young adults in Bandar Darulaman Community College.
2. To examine the difference of the EI level between participants from four certificate programmes in Bandar Darulaman Community College.

## **2.0 LITERATURE REVIEW**

EI is one of the most widely discuss aspect of intelligence in the current literature. Concept of EI has gained popularity in public, in part, because it plays significant role in human life. EI skills of each individual can be difference and the ability to perceive, use, understand and manage emotions always influences the adaptive outcomes in various situations (Cherniss, 2010). Basically, there are many different conceptions and ideas about what EI really means. Although many disagreement and bitter criticism have been made over EI, still, many researchers have adopted the ability-based model developed by Mayer and Salovey (2000) as one of the EI definitions in their studies (Cherniss, Roche, & Barbarasch, 2016; Ciarrochi, Forgas, & Mayer, 2006). Concept of EI is still in its exploratory stage and there is much of to be investigated about its attributes as and the best way to measure it.

The abilities of appraising, utilizing, understanding, and managing emotions constitute the core of EI (Fernández-Berrocal & Extremera, 2006; Maul, 2012; Mayer, Caruso, & Salovey, 1999; Schutte, Malouff, & Thorsteinsson, 2013). Emotional perception involves the capability to recognize inputting information from emotional systems. For instance, identify facial expressions, objects, postures, gestures, and voices of tones are under emotional perception. The second EI skill is emotional understanding and it is regarded as the ability of knowing the meaning of emotions, emergence of emotions, and complexity of emotions in the human interaction. Competence in utilizing emotions involves using emotions to improve cognitive processes. It is believed that positive and negative emotions have significant effects on human memory and information processing patterns. People in positive moods are more creative, open minded,

flexible, and efficiency in decision making (Healy, Proctor, & Weiner, 2013). While, the other side of the coin, negative moods apparently elicited a more analytic, careful, systematic and vigilant processing style. Lastly, the management of emotions implies the ability to execute emotional regulation in the self and others. Often, people use emotional regulation strategies to maintain healthy interpersonal relationship, control their impulse and aggression, as well as manage emotional distress in social arena (Aldao, Kim, Bigman, & Tamir, 2015).

The interconnection between cognition and emotion has been contended for centuries. Date back to the era of 1900 to 1969, emotion and cognition were conceived in separate ways by the earlier pioneers of the research area in intelligence. During that time, emotion was viewed as dangerous and largely a product of mental illness (Ciarrochi et al., 2006). Until the year of 1990, researchers began to realize that sweeping generalizations on human intelligence were too often made on the basis of an Intelligence quotient (IQ) score (Cherniss et al., 2016). IQ test is regarded as a standardized instrument that used to determine human intelligence in several domains such as comprehension, perceptual, reasoning, processing, fine motor coordination, memory, among others (Oommen, 2014). Although IQ test have been widely used in education, however in western society, large numbers of people are showing active opposition towards this intelligence test. These controversies on IQ test might due to the misapplication and overgeneralization of the results to human competence (Matthews, Zeidner, & Robert, 2002).

The arguments had shift from the period where emotions was being perceived as disruptive to where it is considered as an important component to motivate, assist and facilitate performance at complicate intellectual tasks (Gayathri & Meenakshi, 2013). Until recently, there is a growing recognition among psychologists and educators that emotional learning should give a serious consideration of promoting in school settings. It is argued that students' emotional competence could be crucial to sustained students' success as empirical findings demonstrated that EI could enhance other adaptive resources such as healthy social connection, academic achievement, positive coping strategies, and helping behaviour (Austin, Saklofske, & Mastoras, 2010; Görgens-Ekermans et al., 2015; Song et al., 2010). Thus, current study presumed that examine students' EI can be beneficial as it helps to discovering college students' level of EI. Since there is still a very limited research in exploring young adults' level of EI, therefore the researchers decided to bring up this topic in current study.

### **3.0 METHODOLOGY**

This study adopted a quantitative approach using a cross sectional survey approach. The respondents in this study were two hundred and twenty eight certificate students studying at Bandar Darulaman Community College in Jitra. All the intended respondents from diverse cultures, socioeconomic backgrounds and ethics were selected using random sampling. For the measurement instrument, the researcher employed SSREI to assess the level of EI among certificate students. The SSREI is a self-reported instrument that has been widely applied to measure students' EI in college and university (George & Agnes, 2011; Gong & Paulson, 2016). This instrument has 33 items categorized into 7 emotional dimensions which included appraisal of emotions in the self (AES), appraisal of emotions in the others (AEO), expression of emotions (EE), emotional regulation of the self (ERS), emotional regulation of the others (ERO), utilization of emotions in problem solving (UEPS), and uncategorized as indicated in Table 1 (Gignac et al., 2005). As provided by Schutte et al. (1998), internal consistency of this measure was .87 with a test-retest reliability of .78 (as cited in George et al., 2011).

Table 4. Dimensions and Items of SSREI

<b>Dimensions</b>	<b>Items</b>
AES	5, 15, 18, 25, 29, 30, 33
AEO	9, 22
EE	1, 11
ERS	2, 3, 10, 12, 14, 23, 28, 31
ERO	4, 13, 16, 24, 30
UEPS	7, 17, 20, 27
Uncategorized	6, 8, 19, 21, 26

### 3.1 Procedures of data collection

To achieve the objectives of study, students from Bandar Darulaman Community College were asked to rate their emotional attributes on a five point likert scale that ranges from 1 (strongly disagree) to 5 (strongly agree). The researcher took 15 minutes to inform the respondents about the purpose of study, rights and responsibilities, as well as inform consent to participate in the research before distributing the SSREI research questionnaires to samples. Generally, the SSREI was easy to administer and participants only need to use 5 to 10 minutes to answer the questionnaire. After completion, data collected from samples was analysed using Statistic Package for Social Science (IBM SPSS) software.

## 4.0 RESULT

The ratio for age groups in the analysis showed that 88.6 % of samples were between 18 to 19 years old (n=202), 7.5 % of participants were between 20 to 21 years old (n=17), 2.2% of participants were between 22 to 23 years old (n=5), and 1.8% of them were between 24 to 25 years old. Besides, the demographic also illustrated that 25.9% of respondents were selected from Automotive certificate programme (n=59), 25% were Computer System and Support certificate students (n=57), 24.6% of them were Electrical Technology students (n=56), and lastly, 24.6% of respondents were appointed from Draughtsman programme (n=56). Total EI scores of respondents within 7 emotional dimensions were classified into three level of EI, including high, average and low level of EI (George et al., 2011). In the table 2, the results of the survey indicated that 53.9% of respondents scored average level of EI, 43.4 % possessed lower level of EI and 2.6% scored highly in the SSREI.

Table 2. EI Scores of the Certificate Students

Categories	EI scores	Frequency	Percentage (%)
High	143 and above	6	2.6
Average	Below 143 and above 117	123	53.9
Low	117 and below	99	43.4

Using the descriptive statistic, the findings of the study also revealed that majority of students scored lowest in the domain of AES, followed by EE, UEPS, ERO, Uncategorized, ERS, and AEO. For AES, there were 7 items in total with the highest and lowest score of 14 and 31 in the domain. The median score of AEO of certificate students was 8 with a minimum of 4 and a maximum of 10. The result on EE showed that the median score was 7 and the minimum score was 2 and the maximum score was 10. For ERS, the findings illustrated that the minimum and maximum score were 20 and 40 respectively with a median score of 31 in this dimension. The median score of ERO and Uncategorized were 19 with a total of 5 items in respective dimensions. Lastly, it showed that the median score of UEPS was 15 with a minimum of 10 and a maximum of 20. The findings were presented in Table 3.

Table 3. Findings on Students' EI dimensions

Dimensions	Sample size	Number of items	Median	Min.	Max.	Total score of each emotional dimension (%)
AES	228	7	23	14	31	65.71
AEO	228	2	8	4	10	80.00
EE	228	2	7	2	10	70.00
ERS	228	8	31	20	40	77.50
ERO	228	5	19	5	25	76.00
UEPS	228	4	15	10	20	75.00
Uncategorized	228	5	19	9	25	76.00

The research used one-way ANOVA to determine the differences in the level of EI between participants from four certificate programmes. The analysis revealed that there was significant different in EI between students from Electrical Technology, Computer System and Support, Draughtsman, and

Automotive programmes,  $F(3, 224) = 3.052$ ,  $p < .05$  as shown in table 4. More specifically, the Post Hoc tests indicated that a significant difference exists between students from Computer System and Support programme and Electrical Technology programmes in the level of EI.

Table 4. ANOVA test for EI among Participants from Four Certificate Programmes

	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Between Groups	1246.268	3	415.423	3.052	.029
Within Groups	30489.241	224	136.113		
Total	31735.509	227			

\* $p < .05$

## 5.0 DISCUSSION AND CONCLUSION

As proved, EI is the dominant driver of most adaptive outcomes in higher education institutes (Görgens-Ekermans et al., 2015; Howell et al., 2014; Jameson, Carthy, McGuinness, & McSweeney, 2016). Utilizing EI in meaningful way, young adults may have the ability to adjust well in the transition process as well as establish healthy interpersonal relationship with others in higher education settings. The results of present study, however, revealed that most of the young adults in community college scored a medium level of EI in the assessment and around 43.3% of them reported low level of EI. Furthermore, there were only a few college students able to obtain higher score in the SSREI. Hereupon, the present study presumed that young adults with low EI skills as being the highest risks group of adjustment issues compare to the others. In addition to academic knowledge and technical skills, this potentially indicates college students need emotional and social skills to achieve their success in both academic and interpersonal context.

In addition, the present study disclosed an interesting finding that most of the young adults in community college were good in the dimension of AEO, yet major of them reported a very low rating in the AES and EE. It is claimed that individuals from collective cultures are more inclined to suppress their emotions in the social arena (West & Turner, 2011). However, suppression of emotions doesn't mean that young adults don't have emotions, it might simply because young adults from collective culture selectively restraint or display emotions that suited the expectations of family and society (Satterfield, 2017). Another study conducted by Gendron, Roberson, van der Vyver, and Barrett (2014) revealed that emotional perception and facial expression are not culturally universal. Maybe some of the emotional expressions are universal, but how, when and where emotions are expressed and perceived is determined by culture. Commonly, female have better emotional expression than male in the domain of EI (Naghavi & Redzuan, 2011). With these justifications, current research assumed that Malaysian college students may think express emotions in front of other people is not appropriate and should be avoided in public circumstances. As a result, they may selectively express their emotions to those who close to them. The present study suggested that cultures, social role as well as gender can be the influential factors that are worth further investigation.

Lastly, the results illustrated that there was significant difference in the level of EI among students from four certificate programmes. Learning circumstance, peer interaction, teaching contents and interests in learning could be the potential factors that lead to the difference. Regarding this, the present study recommended Malaysian researchers to further investigate or to look at students' EI competence in different programmes, so that a good principle and knowledge can be added to this point. The results discovered that the effort of developing emotional competency among Malaysian young adults through EI learning still lags behind. Yet, the challenges can be met by infusing emotional learning into higher education curriculum as a path of enhancing their emotional literacy. Therefore, the implication of this study would be needed to formally establish online EI training for young adults and to provide concrete guidelines for EI practices in higher education institutes. At the end, the researchers support the opportunity of implementing EI research related to the influence of role expectation, gender, and cultural practices among young adults.

## REFERENCES

- Abdullah, M. C., Elias, H., Uli, J., Mahyuddin, R. (2010). Relationship between coping & university adjustment & academic achievement amongst first year undergraduates in a Malaysian Public University. *International Journal of Arts and Sciences*, 3(11): 379 – 392.
- Akduman, G., Hatipoğlu, Z., & Yüksekbilgili, Z. (2015). A research about emotional intelligence on generations. *International Journal of Advanced Multidisciplinary Research & Review*, 3(4), 124-133.
- Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review*, 30, 217-237. <http://dx.doi.org/10.1016/j.cpr.2009.11.004>
- Al-Qaisy, L. M. (2010). Adjustment of college freshmen: The importance of gender & the place of residence. *International Journal of Psychological Studies*, 2(1), 142-150.
- Austin, E. J., Saklofske, D. H., & Mastoras, S. M. (2010). Emotional intelligence, coping & exam-related stress in Canadian undergraduate students. *Australian Journal of Psychology*, 62, 42-50 doi: 10.1080/00049530903312899
- Cheng, H.-L., McDermott, R. C., & Lopez, F. G. (2015). Mental health, self-stigma, & help-seeking intentions among emerging adults. *The Counseling Psychologist*, 43(3), 463–487. doi:10.1177/0011000014568203
- Cherniss, C. (2010). Emotional intelligence: Towards clarification of a concept. *Industrial and Organizational Psychology*, 3(2), 110–126. DOI: 10.1111/j.1754-9434.2010.01231.x
- Cherniss, C., Roche, C., & Barbarasch, B. (2016). Emotional intelligence. *Encyclopedia of Mental Health*, 108–115. doi:10.1016/b978-0-12-397045-9.00207-x
- Cheung, C.-K., Cheung, H. Y., & Hue, M.-T. (2014). Emotional Intelligence as a basis for self-esteem in young adults. *The Journal of Psychology*, 149(1), 63–84. doi:10.1080/00223980.2013.838540
- Ciarrochi, J., Forgas, J. P., & Mayer, J. D. (2006). *Emotional intelligence in everyday life*. NY: Psychology Press.
- Ebinagbome, M. E., & Nizam, I. (2016). The impact of emotional intelligence on students' academic performance: A study on Malaysian tertiary institution. *International Journal of Accounting & Business Management*, 4(1), 10-18. DOI: 10.24924/ijabm/2016.04/v4.iss1/10.18
- Fernández-Berrocal, P., & Extremera, N. (2006). Emotional intelligence: A theoretical and empirical review of its 15 years of history. *Psicothema*, 8, 7-12.
- Gayathri, N., & Meenakshi, K. (2013). A literature review of emotional intelligence. *International Journal of Humanities and Social Science Invention*, 2(3), 42-51.
- Gendron, M., Roberson, D., van der Vyver, J. M., & Barrett, L. F. (2014). Perceptions of emotion from facial expressions are not culturally universal: Evidence from a remote culture. *Emotion*, 14(2), 251–262. doi:10.1037/a0036052
- George, T. B. S., & Agnes, L. W. L. (2011). Emotional intelligence of distance learners at the school of distance education, Universiti Sains Malaysia. *Malaysian Journal of Distance Education*, 13(2), 33-48.
- Gignac, G. E., Palmer, B. R., Manocha, R. & Stough, C. (2005). An examination of the factor structure of the Schutte Self-Report Emotional Intelligence (SSREI) scale via confirmatory factor analysis. *Journal of Personality & Individual Differences*, 39, 1029-1042. doi:10.1016/j.paid.2005.03.014
- Goleman, D. (1995). *Emotional intelligence*. New York: Bantam.
- Gong, X., & Paulson, S. E. (2016). Validation of the Schutte Self-Report Emotional Intelligence Scale with American college students. *Journal of Psychoeducational Assessment*, 36(2), 175–181. doi:10.1177/0734282916669245
- Görgens-Ekermans, G., Delpont, M., & Du Preez, R. (2015). Developing emotional intelligence as a key psychological resource reservoir for sustained student success. *SA Journal of Industrial Psychology*, 41(1), 1-13. Retrieved from <http://dx.doi.org/10.4102/sajip.v41i1.1251>
- Healy, A.F., Proctor, R.W., & Weiner, I. B. (2013). *Handbook of psychology: Experimental psychology*. US: John Wiley & Sons Inc.
- Hill, E. M., & Maggi, S. (2011). Emotional intelligence and smoking: Protective & risk

- factors among Canadian young adults. *Personality and Individual Differences*, 51(1), 45–50. doi:10.1016/j.paid.2011.03.008
- Howell, K. H., & Miller-Graff, L. E. (2014). Protective factors associated with resilient functioning in young adulthood after childhood exposure to violence. *Child Abuse & Neglect*, 38(12), 1985–1994. doi:10.1016/j.chiabu.2014.10.010
- Jameson, A., Carthy, A., McGuinness, C., & McSweeney, F. (2016) Emotional intelligence & graduates-employers' perspectives. *Procedia Social and Behavioural Science*, 228, 515-522.
- Kok, J. K. (2015). Life transition for the emerging adults & their mental health. *International Journal of Social Science & Humanity*, 5(12), 1035-1039. DOI: 10.7763/IJSSH.2015.V5.600
- Kok, J. K., Van Schalkwyk, G. J., Chan, A.H. W (2015). Perceived stressors of suicide & potential prevention strategies for suicide among youth in Malaysia. *International Journal of School & Educational Psychology*, 3(1), 55-63. DOI: 10.1080/21683603.2014.920285
- Maul, A. (2012). The validity of the Mayer–Salovey–Caruso Emotional Intelligence Test (MSCEIT) as a measure of emotional intelligence. *Emotion Review*, 4(4), 394-402.
- Matthews, G., Zeidner, M., & Roberts, R. D. (2002). *Emotional intelligence: Science & myth*. USA: MIT Press.
- Mayer, J., Caruso, D. & Salovey, P. (1999). Emotional intelligence meets traditional standards for an intelligence. *Intelligence*, 27, 267-298.
- Naghavi, F., & Redzuan, M. (2011). The relationship gender & emotional intelligence. *World Applied Sciences Journal*, 15 (4): 555-561. DOI: 10.14204/ejrep.30.12204
- Oommen, A. (2014). Factors influencing intelligence quotient. *Journal of Neurology & Stroke*, 1(4).
- Ramli, N. M. H., Alavi, M., Mehrinezhad, S. A., & Ahmadi, A. (2018). Academic stress & self-regulation among university students in Malaysia: Mediator role of mindfulness. *Behavioural Science*, 8 (1), 1-9. DOI: 10.3390/bs8010012
- Satterfield, J. M. (2017). *Boosting your emotional intelligence: Course guide book*. USA: The Great Courses.
- Schutte, N. S., Malouff, J. M., & Thorsteinsson, E. B. (2013). Increasing emotional intelligence through training: Current status & future directions. *The International Journal of Emotional Education*, 5(1), 56-72.
- Song, L. J., Huang, G., Peng, K. Z., Law, K. S., Wong, C.-S., & Chen, Z. (2010). The differential effects of general mental ability and emotional intelligence on academic performance & social interactions. *Intelligence*, 38(1), 137–143. doi:10.1016/j.intell.2009.09.003
- Syed, M. & Mitchell, L. L. (2013). Race, ethnicity, and emerging adulthood: Retrospect & prospects. *Emerging Adulthood*, 1(2), 83-95. DOI: 10.1177/2167696813480503
- Torubeli, V. A., & Ambakederemo, E. T. (2013). Emotional intelligence training & global security challenges among young adults in Nigeria's Niger Delta University. *Jorind*, 11(12), 1596-8303.
- West, R., & Turner, L. H. (2011). *Understanding interpersonal communication: Making choices in changing Times*. USA: Wadsworth, Cengage Learning.



# **COUNSELLOR EDUCATION AND COUNSELLING PSYCHOLOGY**

## Let's Refresh Decaying Knowledge: Viewing Rare Complications in Practicing Confidentiality

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### ABSTRACT

*Discussions about ethical and legal issues especially confidentiality are becoming more prevalent in the practice of professional counselors. Ethics is defined as code of regulations, refers to restrictions to avoid punishment, and involves effort to become astute counselors. On the other hand, confidentiality involves the practice of keeping and holding all the information shared throughout the client-counselor relationship. Protecting clients' privacy allows free flow of information between client and counselor. Furthermore, protecting clients' privacy is not only a matter of moral aspect, it is vital in retaining the bond of trust between counselors and clients. Counselors who fail to uphold clients' confidentiality will have to face prosecution, clients' termination of counseling sessions at premature stage, flounder of counselor-client relationship when trust is broken, clients' mental and emotional instability, and being sued for violating clients' personal rights. Thus, the primary aim of this article is to address the need to protect clients' privacy, to discuss issues, and complications in practicing confidentiality in counseling. A total of six articles, although not the latest publications, were randomly selected and studied to enhance understanding about confidentiality and the fundamental of protecting clients' privacy as a part of good counseling management. Multiple rare complications were reported as obstacles in protecting clients' privacy: (a) type of focus; (b) working space; (c) corporate ideology; (d) parental consent; and (e) competency level. The counselors are obligated to follow the code of ethics and overcome all the complications by using available counseling guidelines as the benchmark for all the conducts. Furthermore, counselors are expected to help clients to transit from their public persona to a personal one through trustworthy client-counselor relationship. It is increasingly important to raise awareness among counselors and decision makers about ethical and legal issues associated with confidentiality. The complexities of confidentiality issues may warrant interdisciplinary collaborations to improve counseling outcomes.*

**KEYWORDS:** Confidentiality, Complications, Ethics in Counseling

### 1.0 INTRODUCTION

Counselors play significant role in raising public awareness on the counseling profession. In addition, counselors are obligated to conduct respective behaviors based on the Ethics Code introduced by American Psychological Association (APA). APA outlined five general ethical principles for the benefit of counseling professionals which are: (a) beneficence; (b) non-maleficence; (c) fidelity; (d) justice; (e) autonomy; and (f) veracity. Counselors who fail to uphold the operating ethical principles will have to face prosecution, clients' termination of counseling sessions at premature stage, flounder of counselor-client relationship when trust is broken, clients' mental and emotional instability, and being sued for violating clients' personal rights.

Counselors should consistently maintain positive behaviors to hold the integrity, standard, and identity of the counseling profession. Furthermore, counselors must always evaluate and increase their competencies which encompass skills, knowledge, and attitudes while monitoring their effectiveness as professional counselors. Counselors also must perform their duties honestly, objectively, and efficiently with a great sense of responsibility and dedication in maintaining high standards of professionalism. The effort to maintain effective counseling behaviors would result in declined number of ethical and legal issues in counseling.

Discussions about ethical and legal issues are becoming more prevalent in the daily practice of professional counselors. Ethics is defined as code of regulations, refers to restrictions to avoid punishment,

and involves effort to become astute counselors (Corey, 2009). Ethics is also a traditional philosophy branch which provides guidelines about what a counselor should or should not do (Nystul, 2005; Mohd Jaladin & Lau, 2013). There are various ethical standards that counselors use to formulate clinical judgments such as clients' welfare, informed consent, confidentiality, and dual relationships.

On the other hand, privileged communication in counseling, legal issues in managed care, and malpractice are the branches of legal issues in counseling. Legal issues in counseling are defined as laws that guide counselors' practice (Mullen, Lambie, & Conley, 2014). The knowledge of law in counseling is essential to avoid ethical issues. Furthermore, the knowledge about legal and ethics in counseling are essential in managing counseling efficiently. As what was mentioned earlier, counselors should apply positive ethics to present their genuine performance that would benefit them and clients. Table 1 illustrates the summarized components of ethics and legal standards in counseling.

Table 1 highlights one of the ethical issues which is confidentiality. According to Kell (1999), confidentiality is modified from its origin word 'confidence' and it refers to one's mental attitude of relying on or trusting in, having strong faith, and firm trust. He further explained that confidence enables clients to experience the inner sense of security. The inner sense of security allows clients to experience regression, reliance, and revelation of hidden parts of the selves.

Table 1. Ethics and Legal Standards in Counseling

Components of ethics and legal standards	
Ethics	Client's welfare
	Informed Consent
	Confidentiality
	Dual relationships
Legal	Privileged communication
	Legal issues in managed care
	Malpractice

## 2.0 LITERATURE REVIEW

Confidentiality refers to the obligations of counselors and every counselor must respect clients' confidentiality (Butt, 2011). Confidentiality involves the practice of keeping and holding all the information shared throughout the client-counselor relationship (Butt, 2011). In short, counselors must keep clients' secrets. Protecting clients' privacy allows free flow of information between client and counselor and acknowledges that clients' problems belong to them (Abdalrahma et al., 2015). Not only that, protecting clients' confidentiality is the trademark towards successful counseling. Furthermore, it is the manifestation of good counseling practices. The three C's which are: (a) convenience; (b) confidentiality; and (c) credibility are the ingredients of good counseling practice (Angotti et al., 2009). The practice of confidentiality provides a venue for the clients to respond at an optimal level (Butt, 2011). This is because protecting clients' privacy is not only a matter of moral aspect, it is vital in retaining the bond of trust between counselors and clients (Abdalrahman et al., 2015).

Clients are willing to share their developmental problems with the counselors and acknowledge the care shown by their counselors (Butt, 2011). At this stage, the key essence which is confidentiality in the relationship leads and develops confidence in clients. This process helps clients to transit from their public persona to a personal one when communicating with counselors. The transition occurs when clients feel safe to communicate and this condition will give them opportunity for self-development.

As a method to build trust in clients, it is compulsory for counselors to do structuring before proceeding with the clients' issues. In the structuring process, counselors should inform about confidentiality to their clients which are: (a) all that information shared by a client and communication between the client and counselor are private and confidential; and (b) counselor will have to breach the confidentiality when client has intention to harm self or others. If client has intention to harm self or others, counselor will have to report the case to authorized party such as police officers and lawyers. The conflict usually exists when there are two options in protecting clients which are either to keep information shared by clients as confidential although clients confessed their intention to harm others or to report the case to police to save the victim's life. The situation where clients intended to harm others would place counselors

in dilemma. However, counselors may seek consultation from the senior counselors to assist them in the decision making.

Counselors have to be mindful that breaching confidentiality unnecessarily can ruin the client-counselor relationship and subsequently, make the helping process difficult. Thus, counselors still have to make decisions individually on which circumstances are likely and what causes negative effect that has reached to a serious stage which requires reporting (Taylor & Adelman, 1998). Table 2 shows the summary of the literature that discussed confidentiality in various aspects. The selected journals, although not the latest publications, were studied to enhance understanding about confidentiality and the fundamental of protecting clients' privacy as a part of good counseling management. This primary aim of this paper is to discuss on various complications in practicing confidentiality in counseling.

**Table 2. Summary of Selected Literatures**

<b>Author (Year)</b>	<b>Journal Title</b>	<b>Key highlights</b>	<b>Relevant Findings</b>
Butt (2011)	Can you keep a secret? Pretences of confidentiality and treatment in Eastern Indonesia	Teaching and enact the concept of confidentiality.	Humanitarian and moral attitude of protecting clients' rights seems to be not important. The focus is on identifying, labeling, and regulating clients.
Harman (2011)	Confidentiality in family dispute resolution and family counseling: Recent cases and why they matter.	Confidentiality in family counseling.	Legislative requirements affect the preservation of confidentiality in family counseling.
Kell (1999)	Confidentiality and the counselor in general practice.	The need to protect clients from harm.	Corporate ideology is affecting the integration of confidentiality in the counseling services.
Ledyard (1998)	Counseling minors: Ethical and legal issues	Confidentiality issue faced by counselors who are working with minors in the school system.	Parental consent and competency level of minors affect counselors' effort to protect clients' confidentiality.
Stoop (2001)	Does "confidentiality" have limits?	Issue of confidentiality faced by church related counseling centers whose practice depends on pastoral referrals.	Referral sources and counselor-pastor relationship affects protection of clients' confidentiality.
Taylor & Adelman (1998)	Confidentiality: Competing principles, inevitable dilemmas	Confidentiality among minors, right to privacy, and solving dilemmas.	The trend toward interagency collaboration and school-community partnerships has affected minors' confidentiality.

*Note.* The six articles are unique since they discuss various rare complications.

### **3.0 METHODOLOGY**

Six articles were chosen randomly to study on the complications in practicing confidentiality in counseling. All the six articles reflect rare complications that affect the practice of confidentiality. The articles were published in the decades of 1990s, 2000s, and 2010s. The articles were evaluated and the main highlights in the articles were extracted to meet the study objective. The objective of this study is to study on the rare complications encountered by counselors in practicing confidentiality.

#### **4.0 FINDINGS AND DISCUSSION**

Six articles were reviewed and the papers revealed various complications that may occur when confidentiality is practiced among the counselors. The complications block the proper conduct of counseling and place counselors in dilemmas. One of them is the type of focus. There are cases where counselors tend to focus on identifying, labeling, and regulating clients. These focuses seem to be biased and harm clients indirectly. For instance, counselors who demonstrate poor cultural competence would most likely reject clients with stigmatization experiences at premature stage. In this case, humanitarian and moral attitude of protecting clients' rights seems to be not important. There are even cases where confidentiality is poorly taught such as in Papua highlands, Eastern Indonesia, and it is systematically violated in the counseling practice. Counselors are encouraged to inform their clients not to worry that others will know about their situation. Instead tell them that they can share and make self-disclosure without fear, openly, and honestly. It is not appropriate for counselors to express judgmental attitudes when clients approach seeking for guidance. Intake procedures encourage counselors to keep the clients' secrets, to discuss cases with other staff, and emphasize counselors on the learning about implementing confidentiality. Thus, in any situation, labeling clients still should be avoided to ensure the conduct of counseling practice is not violated.

Besides type of focus, working space also affects the practice of confidentiality. Counselors need a proper and conducive place to conduct any type of counseling services. In addition, proper space to work offers counselors to work with confidential materials anonymously, explore, and integrate information safely. The three objectives for protecting clients' confidentiality during the intake procedures are: (a) to promote careful record-keeping; (b) to respect clients' rights on their privacy; and finally (c) to minimize clients' fear. Therefore, space to work and objective for protecting privacy overlaps on each other and both always goes together in a good counseling practice. There are situations where confidentiality is being neglected. However, the number of cases related to confidentiality issues is very few compared to the number of times counselors worked to create safe working space.

Furthermore, corporate ideology is one of the reasons why the practice of confidentiality is affected. This scenario occurs when one environment is compatible with counseling ethics while the other environment might disagree with certain aspects of counseling ethics. There are few components of corporate ideology that we may ponder. Those components are: (a) organizational culture; (b) management style; (c) attitude towards confidentiality; (d) communication with counselors; and (e) consequences for the counselors. For instance, a traditional hierarchical system and a flat self-managing system are different from each other. In a traditional hierarchical system, contracted staff is not considered as the members of primary care team. While in a flat self-managing system, all staffs are treated equally. Thus, organizational structure would affect counselors' efforts to be a part of the system and practice counseling ethics. As mentioned earlier, attitude towards confidentiality also varies. In some organizations, counselors are allowed to meet clients when there is time and space such as in a private or communal area. While in some settings, sessions are conducted privately and discussions are done between individual members of the team.

Besides type of focus, working space, and corporate ideology, parental consent and competency level of minor also affects the practice of confidentiality. Parents or guardians may be included in the counseling process if the clients are minor individuals. The process of informing minor clients about their rights to privacy and the exceptions of protecting confidentiality are part of the process of obtaining informed consent. However, debate and controversies about the minors' competency in making decision took place often. The decision made by children seems not respected although they are treated autonomously. This happens because a child is seen as someone who is still immature, not competent to make decisions independently, and lack of wisdom.

Therefore, counselors have to make young clients understand about the elements of confidentiality before obtaining informed consent such as describe about the purpose of counseling, what clients will be doing in the sessions, inform about the risk and benefits, tell them about alternative actions to achieve desired results, and assure clients that they do not need to elicit and answer all the questions. The process for minor clients to understand about what the counselors are explaining is complicated. Thus, counselors may need to present and explain in a variety of ways such as written communications, getting feedback, question and answer, follow ups, and media presentations. Parents of the minor clients may get involved in the process of obtaining informed consent or even in the counseling sessions. Here, the counselors will be in

dilemma either to care and protect clients' confidentiality, reveal those stories shared by minors to their parents, or not to allow clients' parents to participate in the counseling sessions. However, based on the review, it is suggested that the minor clients should be included in the decision-making process whether to release information to parents or not to.

In the other perspectives, informing clients' parents about their decisions to enter into a counseling relationship or even to include parents in the counseling process may avoid complications. The organization or counseling centers should play important role in conducting appropriate services and they have to make sure that counselors are practicing confidentiality. The counselors are also obligated to follow the code of ethics and overcome all the challenges by using available counseling guidelines as the benchmark for all the conducts.

## **5.0 IMPLICATIONS AND CONCLUSION**

### **5.1 Implications**

First, client should know their rights. The rights can be about limits of confidentiality, informed consent, and parental legal rights. Moreover, clients need to be alert and aware of all the consequences that they have to bear upon any decisions made. The most crucial method in handling the issue of confidentiality is by educating the public about the availability of counseling services and various issues that may occur during the process of counseling especially confidentiality. In addition, clients need to be open in receiving knowledge and applying them at the right place and right time.

There are people who always find for something new from other people including about information that a person revealed or disclosed currently to another person. Teachers and parents can even intervene and try to get more information about clients from the counselors. However, the counselors have to be firm, determined, and help to protect clients' confidentiality. The counselors should not share the stories about clients before eliciting consent from the clients. The interveners have to remember that two difficult needs will arise if they proceed without the permission from clients. Those two difficult needs are: (a) the need to tell or inform the clients why confidentiality was breached and secondly, (b) the need to work to correct any damage caused to the helping relationship.

Furthermore, every counselor shall determine the level of confidence, knowledge, and pedagogical strategies to overcome ethical and legal issues especially issues of confidentiality. Counselors may start avoiding when they could not solve any issues related to confidentiality. Counselor may even feel uncomfortable and may lead to poor decision making. Moreover, counselors may have low confidence in making decisions due to surface or shallow level of knowledge about confidentiality. Depth knowledge permits rational decision making especially when issues of confidentiality are involved. The basic five ethical principles that every counselor should know and practice are non-maleficence, beneficence, autonomy, justice, veracity, and fidelity. Therefore, these principles would help counselors in maintaining trust levels, keep counseling relationship intact, and finally, maintain good counseling services.

### **5.2 Conclusion**

It is practically significant to remember that the counseling professionals with codes of ethics, counseling experiences, and knowledge should be able to maintain good helping relationship. Issues such as type of focus, corporate ideology, and age of client can affect the practice of confidentiality in counseling practice. Moreover, intervenes also can be the major source of issues in confidentiality. All the counselors should be aware that intervenes do not set the code of conducts and they do not hold the law. It is the licensing board of professional counselors that supervises and observes all the counseling related matters. Thus, the certified counseling professionals should stay firm and unitedly fight for the clients' rights.

Authorized person should take legal actions on those counselors who did not practice confidentiality, breached the confidentiality without proper reason, and failed to maintain good record keeping which disclosed the clients' information. Authorized person also should take legal actions on those individuals other than counselors if they are found stealing or taking clients' records without the consent of counselors. It is the duty of counselors to be mindful that confidentiality is the key to gain clients' trust and maintain good counseling conduct.

As a conclusion, the practice of counseling is a unique and complex aspect which needs proper administration. It reflects the value of responsibility, trustworthiness, genuineness, and counselors' respect on the code of ethics. Counselors should always be the mirror where clients could see the purity of

counseling, the shimmering goals that clients would achieve later in the counseling process, and the counselors as 'self' who are there to protect clients. The secret of clients may spread without the clients' acknowledgment and proper code of ethics that provides benchmark for counselors' conduct. Thus, counselors and clients have to work together to protect confidentiality and always be sensitive to issues that may occur related to confidentiality.

## REFERENCES

- Abdalrahman, I. B., Osman, A. M. A., Ali, B. M. A., Mustafa, E. I. E. S. M., Ali, E. E. H., & Muneer, M. S. E. (2015). Autonomy and confidentiality: Patients' perspectives. *Tropical Doctor*, 45(2), 79-83.
- Angotti, Bula, Gaydosh, Kimchi, Thornton, & Yeatman (2009). Increasing the acceptability of HIV counseling and testing with three C's: Convenience, confidentiality and credibility. *Social Science & Medicine*, 68(12), 2263-2270. <https://doi.org/10.1016/j.socscimed.2009.02.041>
- Butt, L. (2011). Can you keep a secret? Pretences of confidentiality in HIV/AIDS counseling and treatment in Eastern Indonesia. *Medical Anthropology*, 30(3), 319-338. <https://doi.org/10.1080/01459740.2011.560585>
- Corey, G. (2009). *Theory and Practice of Counseling and Psychotherapy* (8th ed.). Belmont, CA: Thomson Brooks.
- Harman, J. (2011). Confidentiality in family dispute resolution and family counseling: Recent cases and why they matter. *Journal of Family Studies*, 17(3), 204-212.
- Kell, C. (1999). Confidentiality and the Counselor in general practice. *British Journal of Guidance & Counseling*, 27(3), 431-440. <https://doi.org/10.1080/03069889908256282>
- Lamont-Mills, A., Christensen, S., & Moses, L. (2018). Confidentiality and informed consent in counseling and psychotherapy: A systematic review. Melbourne: PACFA.
- Ledyard, P. (1998). Counseling minors: Ethical and legal issues. *Counseling & Values*, 42(3), 171-177. Retrieved from <http://psycnet.apa.org/doi/10.1002/j.2161-007X.1998.tb0042>
- Mohd Jaladin, R. A., & Lau, P. L. (2013). *Isu Profesional dan Etika dalam Kaunseling dan Psikoterapi (Professional Issues and Ethics in Counseling and Psychotherapy)*. Kuala Lumpur: University of Malaya Publisher.
- Mullen, P. R., Lambie, G. W., & Conley, A. H. (2014). Development of the ethical and legal issues in counseling self-efficacy scale. *Measurement and Evaluation in Counseling and Development*, 47(1), 62-78. <https://doi.org/10.1177/0748175613513807>
- Nystul, M. S. (2005). *Introduction to Counseling An Art and Science Perspective* (3rd ed.). Boston: Allyn & Bacon, Inc.
- Stoop, D. A. (2001). Does "confidentiality" have limits? *American Journal of Pastoral Counseling*, 3(3), 37-44. [https://doi.org/10.1300/J062v03n03\\_03](https://doi.org/10.1300/J062v03n03_03)
- Taylor, L., & Adelman, H.S. (1998). Confidentiality: Competing principles, inevitable dilemmas. *Journal of Educational and Psychological Consultation*, 9(3), 267-275.

## Play and Fun in Learning Ethics Education

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### ABSTRACT

*Ethical competency is critical to the well-being of professionals. Ethical issues and decision-making process permeate the profession, and living ethically can be articulated as projecting the highest standard of belief system. In this research, the engineering ethics education instructor will use gamification in disseminating knowledge and conducting course activities. Gamification introduces a new idea which brings together the elements of play and fun in learning such a cut and dry course. Gamification in teaching engineering ethics education enables creative and intuitive skills, which may engage learners to experience course contents in more attractively and effectively. For this research, there will be a mobile application called Ethoshunt<sup>TM</sup> to be utilized in teaching engineering ethics education course. The objective of this conceptual research is to identify how ethics education is learned, understood, experienced and applied by the engineering students which utilizes gamification to their evolving professional identity and work in the program. This research will employ qualitative research design and use interpretive case study genre. The research will involve classroom observations and individual in-depth interview sessions. The interview information will be transcribed and documentations will be collected from course assignments. The researchers will comprehensively review the relevant literature to frame and refine the emergent findings. Coding categories will be developed using data analysis software on an ongoing basis, until the tentative sub-themes emerge and become the emergent master themes. This research may have impact on development and quality of teaching and learning new paradigm towards improving the quality and competitiveness of graduates. This research may also contribute a substantial change within engineering programs and generate a new strategy in teaching ethics education for future engineers.*

**KEYWORDS:** Ethics education, Engineering ethics education, Gamification

## 1.0 INTRODUCTION

The emergence of advanced technologies and their successful integration in teaching and learning has been modifying the current educational system (Osipovskaya & Miakotnikova, 2020). Gamification, a popular method has become one of the modern technologies and recently, it is a source of interest in educational setting (Garett & Young, 2019). Majority of the fundamental courses in educational field is always perceived as cut and dry courses. For instance, the courses such as ethics, theories, histories, philosophies and many more are reflected as complex and challenging. These courses are also seen to have



a broad range of topics as well as there are no specific methods to teach to assist teaching and learning. The current education system also requires holistic changes across time in line with the cognitive development and educational needs of the millennials. The new millennial generation learn and process knowledge differently (Osipovskaya & Miakotnikova, 2020). Thus, a gamification-based mobile application innovation can further be enhanced its innovation to complement conservative teaching and learning methods in disseminating instructional information to ensure the adaptability of knowledge among students in real-life situations.

Initially, the invention of Ethoshunt™ as a mobile application is to complement gamification, which can be utilized in teaching and learning ethics education for counseling program. This innovation of Ethoshunt™ can be expanded into other disciplines that involve ethics education as one of the graduate attributes in engineering, medicine, nursing, law, architecture and many more. Therefore, this research is intended to expand the usability of the innovation of Ethoshunt™ in engineering education. Engineering education is taught in Engineers and Society course; which all engineering students are compulsory to register for this course and pass, in order for them to pass in the program. Universiti Putra Malaysia offers eight engineering programs: aerospace, civil, mechanical, chemical, food process, agriculture and biosystem, electrical and electronics, and computer and communication systems. All eight programs have made mandatory for the students to register for this course.

Based on initial systematic review of ethics courses in counseling as well as in engineering, it is found that there are similarities in terms of the required moral conduct for both professions. This finding is interesting, considering that the nature of both professions is different, whereby counselors will be working with people compared to engineers will be working mostly with machines and equipment. The similarities have been studied in detailed and a conclusion have been derived that a common teaching and learning delivery technique can be used for both professions to achieve the learning outcomes of the course as well as instilling the ethics in students.

### **1.1 Research Objectives**

The overall aim of this research will be to identify how ethics education is learned, understood, experienced, and applied in a course which utilizes gamification by the learners to their evolving professional identity and work in the training program. To achieve the overall aim, these objectives will be embarked:

- (i) To improve the overall invention of Ethoshunt™ as a mobile application which include its mechanics, mechanism and work process;
- (ii) To expand the applicability of the original invention of Ethoshunt™ as a mobile application in counseling field to a new discipline, which will be in engineering field;
- (iii) To identify appropriate hints, points, and rewards that can be associated with engineering ethics education learning acquisition; and
- (iv) To capture the experience in utilization of Ethoshunt™ in teaching and learning engineering ethics education course.

### **2.0 LITERATURE REVIEW**

The word “ethics” comes from the Greek word “ethos”, which means to describe character or custom. Among professionals, ethics usually refers to performing good behaviors (Birrell & Bruns, 2016; Sommers-Flanagan & Sommers-Flanagan, 2007). Moreover, learning to be an ethical professional is comparable to the process of becoming an effective member of a new culture (Handelsman, Gottlieb, & Knapp, 2005). In the journey of becoming a professional, an individual learns skills essential and expected for a specific profession. To learn ethics, a learner needs to learn, understand, experience, and apply ethics information and knowledge through direct ethics instruction and direct life experiences, which can be developed over time (Birrell & Bruns, 2016; Israel & Lassonde, 2007; Jungers & Gregoire, 2013; Zakaria & Warren, 2016).

Ethics education is an important competency in professional endeavor. Lifelong knowledge acquisition and continuous professional development are crucial to improve professionals’ ethical awareness. It is notable that teaching ethics is complex (Kitchener, 1984; 1986; Warren, Zavaschi, Covello, & Zakaria, 2012); and teaching ethics is challenging since there is a broad range of topics, there is no

unification about its goals, and subsequently, there is no specific method to teach (Hill, 2004; McDonald, 2008; Urofsky & Sowa, 2004; Zakaria, 2013). On the other hand, the goals for ethics education are diverse. Ultimately, an ethics education course includes learning outcomes such personal wellness, to stimulate insights into therapeutic change and eventually to transform the learners' intellectual paradigm towards personal and professional well-being.

Ethics education is anticipated to instill ethical awareness and integrate professional ethics knowledge within learners; and equally encourage wellness and self-care appreciation among professionals (Warren, Morgan, Morris, & Morris, 2010). Even with the complexities of ethics education, an ethics instructor must be able to work with the learners who have diverse social, cognitive, and ego developmental levels. At the heart of a sound ethical practice, there lies a framework of respect, care, and sensitivity toward others in ensuring the highest professional standard of services within the professions' realm. This framework guarantees the care of self, care of clients, and care of colleagues, which are all based upon professional's personal and professional morals, values, principles, and personhood quality (Zakaria & Warren, 2014). Thus, there is an urgency to conduct a research on how this important framework of ethics theory and practice comprehension can be learned, understood, experienced and applied in a course; which utilizes gamification by the learners to their evolving professional identity and work during the training programs.

Gamification has an incredible prospective in the learning space. Through gamification, learners as the game players potentially exhibit positive learning attitudes and behaviors. Gamification supports the application of game design and mechanics to upgrade non-game contexts and to make difficult tasks more palatable. Gamification could be in the form quizzes, badges, points, rewards, leader boards, achievements, trophies and levels (Wiggins, 2016). Gamification motivates users through engagement, which can make the most tough, demanding, and boring tasks become more gratifying (Cheong, Cheong, & Filippou, 2013).

Gamification enables learners to meaningfully reflect and link to what they actually would do when they are in their work settings. It can transform an extrinsic experience into internal meaning and help the learners to reflect upon and reshuffle their learning familiarities (Charlier & De Fraine, 2012; De Freitas, 2013). Furthermore, gamification is related with creativity, which is the ability to design inventions, produce works of art or solve problems using an original and unconventional approach. The creative perspective includes the ability to quickly see multiple methods to solve a problem and consider various options, which at the same time resulting in something extraordinary.

Professionals are vulnerable to the emotional demands of the work and thus, they have high risk of having compassion fatigue and vicarious traumatization especially if self-care and well-being is not maintained (Schure, Christopher & Christopher, 2008; Warren & Douglas, 2012; Zakaria, 2007). The learners in this course will be preparing themselves toward becoming professionals at various settings. Lack of ethics knowledge and self-care awareness can contribute to poor ethical decision-making ability. Gamification in teaching ethics education enables creative and intuitive skills, which may engage learners to experience ethics education contents more attractively and effectively.

### **3.0 METHODOLOGY**

The research will employ a qualitative research method and utilize the interpretive case study genre. A qualitative research is not intended to generalized the findings; rather, it is meant to capture the participant's experience in certain selected phenomenon under observation. In this research, the researchers will only be interested to capture the in-depth and breadth engineering students' experience in learning engineering ethics using Ethoshunt™. Throughout the semester, the course instructor will adopt gamification in teaching and learning ethics education course called Ethoshunt™. The Ethoshunt™ is created by the researchers through the understanding of game mechanics from traditional treasure hunt concept to aid learning ethics education; which normally would not be seen as a game or even particularly fun at all. It triggers exploration in finding information about ethics education and involves competition element. Apparently, it is a combination of game elements and motivational drivers.

#### **3.1 Population**

The research population will include all learners enrolled in the ethics course for engineering. The learners will represent diversities in age, gender, racial, and cultural identity.

### **3.2 Participants and Sampling Procedures**

The participants during the first phase of research progression will be all learners enrolled in the ethics course in engineering. The first phase of the study will involve weekly classroom observations and selected participants' documentations throughout learning ethics education. The participants during the first phase of the study will be selected based on three sampling procedures, which include intensify sampling, maximum variation sampling and typical case sampling procedures.

During the second phase of research progression, there will be a number of participants chosen from the same population who voluntarily participate in individual in-depth interview sessions during the study week of that particular semester, as well as several follow-up individual interview sessions for several participants to gain additional information needed for this research. In addition, these participants will also be involved in individual member check sessions to ensure the credibility of this research. These participants will be selected based on purposive sampling procedures, which include criterion sampling, confirming cases sampling and emergent sampling.

### **3.3 Instrumentation**

The researchers will be the primary instruments specifically for data collection and data analysis. As the human instruments, the researchers will be expected to provide immediate responses and adaptations to any particular participants' experiences. The researchers will also be expected to expand the understanding of these experiences through verbal and nonverbal constant communication, to process the information gained from the participants immediately, to clarify and summarize the materials gathered, to check with the participants on the accuracy of the interpretation as well as to explore the unusual or abnormal responses.

During the first phase of research progression, the researchers will make weekly classroom observations from the ethics education class through the Week 12 of the semester. To assure the researchers will gain more in-depth and breadth information about the phenomenon under investigation, the researchers will maintain observational journals of the classroom as well as write field notes and memos to self, to record any additional information that may seem important to this research.

During the second phase of research progression in the study week of that same semester, the researchers will conduct the individual in-depth interview sessions, several follow-up individual interview sessions for several participants to gain additional information needed for this research and individual member check sessions with the participants selected. It is anticipated that the researchers will personally be involved with the participants and conveyed an empathic understanding, that inquiries as such are always value bounded. The researchers will identify subjectivities, monitor biases and remain objective during data collection, data analysis, and data interpretation process as to censor how these elements might be shaping the collection and interpretation of data.

### **3.4 Data Collection Methods**

There will be three data collection methods used to produce multiple sources of data:

- (1) Weekly classroom observations: During the first phase of the research progression, the researchers will conduct the weekly classroom observations throughout the 12-weekly class scheduled.
- (2) Participants' classroom documentations: Learners who agree to be involved in this research will complete the demographics information on a provided form. The researchers will conduct weekly classroom observations and prepare weekly field notes, journals and memo writings from the three-hour class for the entire semester. With the permission from the participants in assisting the researchers with data acquisition, interpretation process and research background identification, the graded individual ethics education assignments will be collected and kept by the researchers as documentations.
- (3) Individual in-depth qualitative interview sessions: During the second phase of research progression, the researchers will conduct individual in-depth interview sessions, individual follow-up interview sessions when needed and individual member check sessions with all 10 selected interview participants. The researchers will adopt semi-structured interviews with participants. Each semi-structured interview has five open-ended questions, prepared together with planned and unplanned

probes and arranged with reasonably logical order to cover the inquiry. The interviews will be transcribed from a digital audio-tape recorder and the excerpts from the interview transcriptions will be analyzed.

### 3.5 Data Analysis

The researchers will obtain data mostly in words and pictures revealed by the participants. Prior to conducting this research, the researchers will explore their own experiences related to ethics education to examine biases and assumptions. The researchers will keep a personal daily reflective journal and memo to record personal thoughts, feelings, assumptions, motives and rationales, just to be mindful of the value bound inquiry issues.

Data analysis procedures will take place simultaneously with data collection process. From the outset of the first observation, first interview and first document read/analyze, the researchers will reflect on the meaning of the phenomenon seen, develop hunches about what it means, figure emerging insights and seek tentative hypotheses to confirm or disconfirm the hunches in subsequent observations, interviews and documents read/analyze.

## 4.0 CONCLUSION

In the journey of becoming a professional, a person learns skills important for the specific profession. Ethics education is one of the most important areas of knowledge acquisition in all professions. Therefore, ethics instructors have an instrumental responsibility to prepare learners to learn, understand, experience and apply ethics education to their personal and professional work. Ethoshunt™ has many advantages and very promising in producing excellent human capitals. The past research reported that learners who utilize mobile application in learning process have better academic performance compared to those who are not exposed to mobile application. The communications and multimedia report in 2018 recorded the highest percentage of penetration rates at a glance for the mobile-cellular category (135.5%). The statistics showed that most Malaysians have internet access including those in B40 Group. Hence, the innovation of Ethoshunt™ can benefit all levels of society. On the other hand, the communications and multimedia report in 2016 recorded that the age category of 20-24 as the highest internet user category. Most of the university students also fall under this age category. Thus, the utilization of mobile application such as Ethoshunt™ encourages youngsters to fill the time with beneficial activities and concomitantly, reduces social issues among youngsters.

## REFERENCES

- Birrell, P. J., & Bruns, C. M. (2016). Ethics and relationship: From risk management to relational engagement. *Journal of Counseling & Development*, 94, 391-397.
- Charlier, N., & De Fraine, B. (2012). Game-based learning in teacher education: A strategy to integrate digital games into secondary schools. *International Journal of Game-Based Learning*, 2, 2, 1-12.
- Cheong, C., Cheong, F., & Filippou, J. (2013). Quick quiz: A gamified approach for enhancing learning. *Pacific Asia Conference on Information Systems (PACIS) Proceedings*.
- De Freitas, S. (2013). Towards a new learning: Play and game-based approaches to education. *International Journal of Game-Based Learning*, 3, 4, 1-6.
- Garrett, R., & Young, S. D. (2019). Health care gamification: A study of game mechanics and elements. *Technology, Knowledge and Learning*, 24(3), 341-353. <https://doi.org/10.1007/s10758-018-9353-4>
- Handelsman, M., Gottlieb, M., & Knapp, S. (2005). Training ethical psychologists: An acculturation model. *Professional Psychology: Research and Practice*, 36, 1, 54-65.
- Hill, A. L. (2004). Ethics education: Recommendations for an evolving discipline. *Counseling & Values*, 48, 183-203.
- Israel, S. E., & Lassonde, C. A. (2007). *The ethical educator: Integrating ethics within the context of teaching and teacher research*. New York, NY: Peter Lang.
- Jungers, C. M., & Gregoire, J. (2013). *Counseling ethics: Philosophical and professional foundation*. New York, NY: Springer.

- Kitchener, K. S. (1984). Intuition, critical evaluation and ethical principles: The foundation for ethical decisions in counseling psychology. *The Counseling Psychologist*, 12, 43-55. doi:10.1177/0011000084123005
- Kitchener, K. S. (1986). Teaching applied ethics in counselor education: An integration of psychological processes and philosophical analysis. *Journal of Counseling & Development*, 64, 306-310.
- McDonald, T. M. (2008). *How secondary school counselors make ethical decisions in their work*. (Unpublished doctoral dissertation). Temple University, United States of America.
- Osipovskaya, E., & Miakotnikova, S. (2020). Using gamification in teaching public relations students. *Advances in Intelligent Systems and Computing*, 916, 685-696. Advance online publication. https://doi.org/10.1007/978-3-030-11932-4\_64
- Schure, M. B., Christopher, J., & Christopher, S. (2008). Mind-body medicine and the art of self-care: Teaching mindfulness to counseling students through yoga, meditation and qigong. *Journal of Counseling and Development*, 86, 47-56.
- Sommers-Flanagan, R., & Sommers-Flanagan, J. (2007). *Becoming an ethical helping professional: Cultural and philosophical foundations*. Hoboken, NJ: John Wiley.
- Urofsky, R. & Sowa, C. (2004). Ethics education in CACREP-Accredited counselor education programs. *Counseling & Values*, 49, 37-47.
- Warren, J., & Douglas, K. (2012). Falling from grace: Understanding on ethical sanctioning experience. *Counseling and Value*, 57, 131-145.
- Warren, J., Morgan, M. M., Morris, L. B., & Morris, T. M. (2010). Breathing words slowly: Creative writing and counselor self-care. The writing workout. *Journal of Creativity in Mental Health*, 5, 1-16. doi:10.1080/15401383.2010.485074
- Warren, J., Zavaschi, G., Covello, C., & Zakaria, N. S. (2012). The use of bookmarks in teaching counseling ethics. *Journal of Creativity in Mental Health*, 7, 2, 187-201.
- Wiggins, B. E. (2016). An overview and study on the use of games, simulations, and gamification in higher education. *International Journal of Game-Based Learning*, 6, 1, 18-19.
- Zakaria, N. S. (2013). Counseling ethics education experience: An interpretive case study of the first year master's level counseling students (Doctoral dissertation). *ProQuest Dissertations and Theses (UMI 3562075)*.
- Zakaria, N. S. (2007). Peer counseling empowerment and ethical considerations. *Educational Resources Information Center (ED 499793)*.
- Zakaria, N. S., & Warren, J. (2014). Inquiry-based teaching and learning in counseling ethics education. In P. Blessinger, & J. M. Carfora (Eds.), *Inquiry-Based Learning for the Arts, Humanities, and Social Sciences: A Conceptual and Practical Resource for Educators (Innovations in Higher Education Teaching and Learning*, 2, 147-167. Bingley, UK: Emerald Group Publishing. doi.org/10.1108/S2055-364120140000002018
- Zakaria, N. S., & Warren, J. (2016). Counseling ethics education: Teaching and learning development reformation. In I. Hussein Amzat & B. Yusuf (Eds.), *Fast forwarding Higher Education Institutions for Global Challenges: Perspectives and Approaches*, 83-96. Singapore: Springer. doi: 10.1007/978-981-287-603-4

## On Becoming Ethical Counselors: Measuring Counseling Ethics Competency

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### ABSTRACT

*The Board of Counselors (Malaysia) supports advancing the registered counselors through excellence practices in counseling ethics competency. Ethics competency is salient to ensure fair and consistent ethical decision-making process; protect clients and public in general; promote practices that reflect openness to growth, change and collaboration; create and strengthen standards that reflect the society needs; respect the diversity of instructional approaches and strategies; as well as encourage program improvement and best practices. Although the significance of counseling ethics competency is evident, to date there is limited empirical research to measure counseling ethics competency, and there is no valid and reliable instrument available to measure counseling ethics competency among registered counselors. This research aims to develop an instrument to measure counseling ethics competency, determine perceived level of counseling ethics competency, and determine factors that influence counseling ethics competency. The research will involve a survey using an instrument developed during the initial stage of research and the participants will be all Malaysian registered counselors working at various settings. The researchers will employ cluster sampling in recruiting the participants. This research will describe the outline of counseling ethics competency among Malaysian registered counselors and will also provide insights for counselor educators to have more thoughtfulness in teaching and learning endeavors within the scope of counselor education training programs. Future scope may not just to focus on traits, characters and skills building to produce good counselors; but to emphasis more on ethics comprehension towards best practices of ethics application and internalization to become self-sufficient counselors.*

**KEYWORDS:** Counseling ethics, Counseling ethics competencies, Registered counselors

## **1.0 INTRODUCTION**

The Ministry of Women, Family and Community Development Malaysia has indicated the current scenario in the country for a very high demand of counseling services not just in the school setting, but across settings within the community. By the year 2020, the Government of Malaysia is targeting the ideal ratio for a counselor per its people is from 1:5800 to 1:300. To date (31 July 2019), there are a total of 8,695 counselors who are registered with the Board of Counselors (Malaysia). The recent projections by the Board of Counselors (Malaysia) found that the country needs more registered counselors and the counseling profession is expected to surge to 11,000 by the year 2020 [Board of Counselors (Malaysia)], 2014). The increment in demand of counseling services as well as the projection of registered counselors needed in the country translate the awareness of the community to appreciate the counseling services rendered ethically by the registered counselors as ethical practice is the cornerstone of counseling.

Counseling profession requires counseling ethics competency among counselors. The Board of Counselors (Malaysia)'s overarching mission is to promote the professional competence of the counseling profession through the development of preparation standards, encouragement of excellence in program development, and accreditation of professional preparation programs. Furthermore, the Board of Counselors (Malaysia) supports advancing the counselors through their excellence in counseling ethics competency to ensure fair and consistent ethical decision-making process; to serve as responsible leaders in protecting the public; to promote practices that reflect openness to growth, change, and collaboration; to create and strengthen standards that reflect the needs of society; to respect the diversity of instructional approaches and strategies; as well as to encourage program improvement and best practices. Although the significance of counseling ethics competency is evident, to date there is very limited empirical research to measure counseling ethics competency; and there is neither valid and reliable offline instrument nor online instrument available to measure counseling ethics competency among counselors (Kocet, 2006).

This proposed research is substantial as it may address the gap in the literature indicating the need to measure counseling ethics education comprehension and application (Urofsky & Sowa, 2004). Enhanced counseling ethics education comprehension and application certainly may improve counseling services delivery to the clients and advance the counseling profession. Thus, lack of ethical knowledge, awareness, and skills can contribute to poor ethical decision-making process and affect the personal and professional wellness of the counselors (Moleski & Kiselica, 2005). Eventually, this proposed research offers an online survey instrument which can be utilized to identify levels of counseling ethics competency among Malaysian registered counselors. An online survey instrument can ensure research process and activity's efficiency with time, cost, and human resource effectiveness as well as reduce human dependency and errors.

## **2.0 LITERATURE REVIEW**

The guidance and counseling profession stretched Malaysia as well as many other parts of the world through the leadership and effort of counseling movement in the United States of America (Lloyd, 1987; Pope, 2000). In Malaysia, counseling began with school guidance in 1960s and being recognized now as a profession in school and community settings. Historically in 1963, the Ministry of Education Malaysia acknowledged the importance of counseling; thus, accepted the idea to include school guidance to become an integral part of education aimed at stimulating gradual holistic of students' development. Unfortunately, there was a hiatus to the school guidance establishment effort due to financial and human resources constraints throughout the country (See & Ng, 2010). After two decades, the effort revived as the Ministry of Education Malaysia announced the need for guidance and counseling teachers. In 1981, the Universiti Putra Malaysia pioneered the first guidance and counseling program offered for pre-service and in-service teachers to cope with the community and nation's need; followed by other public universities, teacher training institutes, as well as few private universities and colleges. In 1982, the development of counseling in Malaysia reached its first professional breakthrough with the establishment of the Malaysian Counseling Association [Persatuan Kaunseling Malaysia (PERKAMA)]. Taking a step further toward association's internationalization, PERKAMA is now rebranded as PERKAMA-International to provide more emphasis of its establishment at global atmosphere.

Then, in 1998, counseling in Malaysia seized its first major milestone toward professionalization and gained legitimacy when Seri Paduka Baginda Yang di-Pertuan Agong with the advice and consent of

Dewan Negara and Dewan Rakyat in Parliament assembled, and by the authority of the same enacted the Counselors Act 1998 (Act 580) to regulate the practice of professional counseling in the country (Board of Law Research, 2003). The Counselors Act 1998 (Act 580) led to the establishment of the Board of Counselors (Malaysia) to function as: (a) to oversee the provision of counseling services; (b) to evaluate the need for counseling services in Malaysia; (c) to regulate the training of counselors and determine the types and levels of counseling to be made available in Malaysia; (d) to determine the qualifications entitling a person to be registered under this Act; (e) to determine the standards of counseling training program; (f) to make recommendations to the Government in relation to the standard of counseling services; (g) to register qualified counselors; (h) to regulate the fees which can be charged by a registered counselor for the counseling services; (i) to appoint members of the Board to sit on any board, committee or body formed for any purpose affecting the counseling profession; (j) to regulate the conduct of the counseling profession, including prescribing the code of ethics for the counseling profession; and (k) to do such other things as may be necessary to enable it to carry out its functions effectively. To regulate the conduct of the counseling profession in the country, one of the significant contributions by the Board of Counselors (Malaysia) is the publication of Counselors Code of Ethics [Board of Counselors (Malaysia), 2011].

The Counselors Code of Ethics is designed to provide common standards, minimize conflict, and guide counselors to address the difficult issues in practice [Board of Counselors (Malaysia), 2011; Ponton & Duba, 2009]. It covers eight main areas which include: (a) The Counseling Relationship; (b) Confidentiality, Communication, Privilege and Privacy; (c) Professional Responsibility; (d) Relationships with other Professionals; (e) Evaluation, Assessment and Interpretation; (f) Supervision, Training and Teaching; (g) Research and Publication; as well as (h) Resolving Ethical Issues. These eight areas can measure the counseling ethics competency such as ethical awareness, informed consent, supervision, confidentiality, record keeping, boundaries, setting, and cultural sensitivity among Malaysian registered counselors. Ethics is complex and no clear guidelines that counselors can depend on to make decisions when they encounter ethical dilemmas. Although the counseling profession's codes provide guidelines to counselors, they do not provide all the answers to difficult ethical situations; nor do they guarantee knowledge and skills needed for ethical practices. In addition to the codes, counseling ethics committees and professional organizations also guide the counseling profession. These committees and organizations update ethical codes, create licensing boards, and expect professional competency, knowledge, and skills in counselors (American Counseling Association [ACA], 2014; Kocet, 2006).

In counseling profession, counselors make many decisions within situations in which valid choices equally exist. Professional work in counseling is characterized with unclear problems, multiple dimensions, and commonly fraught with values and ethical implications (McAuliffe & Eriksen, 2011). There are multiple ethical challenges faced by counselors; therefore, counselors need to be prepared for complexities in their counseling work, which is illustrated in many challenges such as ethnicities, gender expectations, multiple society values, moral centers, and ethical judgments (Warren & Douglas, 2012; Zakaria, 2007; 2013; Zakaria & Warren, 2014; Zakaria & Warren, 2016). To meet these professional expectations, counselors need to develop competence in ethical standards of professional organizations and credentialing bodies, as well as competence in application of ethical and legal considerations. Ethical competence is a core competency and critical to the professional well-being of counseling professionals; and ethical issues and decision-making permeate the counseling profession (ACA, 2014; Herlihy & Corey, 2006). Counselors are expected to have significant ethical knowledge, skills, and awareness to provide effective services to clients. An astute counselor would acknowledge the need to master ethical knowledge and skills to avoid ethical pitfalls. Counselors are expected to focus on how they behave when they are confronted with ethical dilemmas and respond rationally, considering ethical values in making decisions. Throughout the career, counselors must maintain ethical awareness, update ethical knowledge and skills, and utilize current ethical guidelines and standards (Welfel, 2005; Zakaria, 2013). Thus, this proposed research offers an opportunity to measure counseling ethics competency among Malaysian registered counselors. The current research aims to: (a) develop an online-based instrument in measuring counseling ethics competency; (b) determine perceived level of counseling ethics competency; and (c) determine factors that influence counseling ethics competency.



### **3.0 METHODOLOGY**

This proposed research aims to measure counseling ethics competency among Malaysian registered counselors. The design will be an online survey research to be conducted among registered counselors throughout Malaysia.

#### **3.1 Population**

The participants will be all Malaysian registered counselors working at various settings including both public and private sectors. The estimated population size is 10,000 consisting of counselors who are registered with The Board of Counselors (Malaysia).

#### **3.2 Sample Selection**

This proposed research will employ simple random sampling, meaning every Malaysian registered counselor has an equal chance to be selected without any exception. The researchers will select the sample using a random number generated by computer software or from a readily available table of simple random. To simplify the process of determining the sample size of current Malaysian registered counselors (N=8,695), the researchers will utilize Sample Size Formula Table for Finite Population by Krejcie & Morgan (1970). The sample size for this proposed research will be 367 to 368 (N=8,000 to 9,000).

#### **3.3 Instrument Development**

The instrument development will follow the process and procedure of instrument development indicated by Brown (1983) as written in Mohd. Noah (1995). The initial stage of instrument development will require the researchers to conduct a thorough review of literature on the outlines of counseling ethics competency locally and globally. Then, the researchers will conduct a document analysis of the Counselors Act 1998 (Act 580) and Regulations. A document analysis of the Counselors Code of Ethics by the Board of Counselors (Malaysia) will be conducted and the measurable components of the Counselors Code of Ethics covering the eight areas will also be extracted: (a) The Counseling Relationship; (b) Confidentiality, Communication, Privilege and Privacy; (c) Professional Responsibility; (d) Relationships with other Professionals (e) Evaluation, Assessment and Interpretation; (f) Supervision, Training and Teaching; (g) Research and Publication; as well as (h) Resolving Ethical Issues. The process of instrument development in this proposed research is adapted from Brown, 1983 in Mohd. Noah (1995) as shown below:

1. Objectives for instrument's development,
2. Literature review and document analysis,
3. Items construction and development,
4. Contents validity analysis,
5. Items and instrument structure refining,
6. Pilot testing and reliability analysis,
7. Development of online-based survey, and
8. Implementation of online-based survey

#### **3.4 Instrument's Analyses on Validity and Reliability**

Validity analysis refers to determination of the degree to which an instrument measures an intended content area. Hence, this proposed research will seek experts' opinion and judgment on all content areas of counseling ethics competency from five (5) different counseling ethics educators of Malaysian Public Higher Education Providers. In addition, there will be another five (5) members who currently are serving the Board of Counselors (Malaysia) to be requested to validate all content areas of the instrument. The validity analysis will cover both item validity as well as sampling validity. On the other hand, reliability analysis refers to determination of the accuracy and precision on the instrument, which also refers to instrument's consistency in measuring what researchers' intent to measure. In this proposed research, reliability can be tested by using correlations, split sample comparisons or methods such as Cronbach's Alpha.

### **3.5 Data Collection**

For this proposed research, data collection will be using the newly developed online instrument which could identify the measures of ethical competency and provide the researchers a means to measure counseling ethics competency among Malaysian registered counselors.

### **3.6 Proposed Analyses**

For this proposed research, there will be two analyses conducted which will be involving two types of statistics:

1. Descriptive statistics to explore and summarize a large amount of data into meaningful information, particularly respondents' profiles and demographics background. The statistics that will be involved are percentage, means, and standard deviations; as well as
2. Inferential statistics to test the hypotheses. The statistics that will be involved are correlation, which is to find the relationship of continuous data; and multiple regression, which to predict dependent variables based on independent variables.

## **4.0 CONCLUSION**

This research will describe the profile of counseling ethics competency among registered counselors throughout Malaysia. The profile would eventually assist registered counselors to become aware of the need to be ethically competence to prepare them become better decision makers, to provide more confident in dealing with ethical dilemmas, and more important to make them feel competent in tackling any issues presented by the clients. Furthermore, the findings would provide insights for counselor educators to have more responsibilities within the scope of counselor education training program in providing better counseling ethics education teaching and learning experience for counseling students. We hope that this research would provide future scope which may not just to focus on traits, characters, and skills building to produce good counselors but to emphasis more from ethics comprehension toward the best practice of ethics application and internalization to become self-sufficient counselors.

## **REFERENCES**

- American Counseling Association. (2005). *ACA code of ethics and standards of practice*. Alexandria, VA: Author.
- Board of Counselors (Malaysia). (2011). *Counselors code of ethics*. Putrajaya: Board of Counselors (Malaysia).
- Board of Law Research. (2003). *Counselors Act 1998 (Act 580) and regulations*. Petaling Jaya: International Law Book Services.
- Herlihy, B., & Corey, G. (2006). *ACA Ethical standards casebook (6th ed.)*. Alexandria, VA: American Counseling Association.
- Hill, A. L. (2004). Ethics education: Recommendations for an evolving discipline. *Counseling and Values*, 48, 183-203.
- Kocet, M. M. (2006). Ethical challenges in a complex world: Highlights of the 2005 ACA code of ethics. *Journal of Counseling and Development*, 84, 228-234.
- Lyod, A. P. (1987). Counselor education in Malaysia. *Counselor Education and Supervision*, 26, 221-227.
- McAuliffe, G. J., & Eriksen, K. (2011). *Handbook of counselor preparation: Constructivist developmental, and experiential approaches*. Thousand Oaks, CA: Sage Publications.
- Moleski, S. M., & Kiselica, M. S. (2005). Dual relationships: A continuum ranging from the destructive to the therapeutic. *Journal of Counseling and Development*, 83, 3-11.
- Ponton, R. F., & Duba, J. D. (2009). The ACA code of ethics: Articulating counseling's professional covenant. *Journal of Counseling and Development*, 87, 117-121.
- Pope, M. (2000). A brief history of career counseling in the United States. *The Career Development Quarterly*, 48, 194-211.

- See, C. M., & Ng, K. M. (2010). Counseling in Malaysia: History, current status, and future trends. *Journal of Counseling and Development*, 88, 18-22.
- Urofsky, R., & Sowa, C. (2004). Ethics education in CACREP-accredited counselor education programs. *Counseling and Values*, 49, 37-47.
- Warren, J., & Douglas, K. (2012). Falling from grace: Understanding on ethical sanctioning experience. *Counseling and Value*, 57, 131-145.
- Welfel, E. R. (2005). Accepting fallibility: A model for personal responsibility for non-egregious ethics infractions. *Counseling and Values*, 49, 120-131.
- Zakaria, N. S. (2007). Peer counseling empowerment and ethical considerations (Educational Resources Information Center, ED 499793). University of North Carolina, Greensboro, NC: ERIC.
- Zakaria, N. S. (2013). Counseling ethics education experience: An interpretive case study of the first year master's level counseling students (Doctoral dissertation). ProQuest Dissertations and Theses (UMI 3562075).
- Zakaria, N. S., & Warren, J. (2014). Inquiry-based teaching and learning in counseling ethics education. In P. Blessinger, & J. M. Carfora (Eds.), *Inquiry-Based Learning for the Arts, Humanities, and Social Sciences: A Conceptual and Practical Resource for Educators (Innovations in Higher Education Teaching and Learning*, 2, 147-167. Bingley, UK: Emerald Group Publishing. <https://doi.org/10.1108/S2055-364120140000002018>
- Zakaria, N. S., & Warren, J. (2016). Counseling ethics education: Teaching and learning development reformation. In I. Hussein Amzat & B. Yusuf (Eds.), *Fast forwarding Higher Education Institutions for Global Challenges: Perspectives and Approaches*, 83-96. Singapore: Springer. <https://doi.org/10.1007/978-981-287-603-42>

## Inserting the Value of *Tri Hita Karana* into Instructional Content of Blended Learning to Enhance Students' Competencies

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### ABSTRACT

Bali is one province in Indonesia that has various indigenous values that support its society to live in harmony, one of it is *Tri Hita Karana*. This value guides the Balinese community to have three harmonic relationships: harmony with God, harmony with others, and harmony with the environment. In the era of 4.0 industrial revolution, *Tri Hita Karana* must be maintained and strengthened as the source of living value in the community and school system. Thus, the use of technology in teaching and learning processes requires much concern from educators, specifically in the aspect of learning content development. The content must be carefully designed by inserting the value of *Tri Hita Karana*. The current research is therefore focused on the development of learning content that accommodate the value of *Tri Hita Karana*. The contents of six courses that are offered in blended setting were developed. During the study of the development, there are four methods that were used to collect the data namely: documentation, interviews, questionnaires and tests. The collected data were then analysed and the findings are detailed in the paper. Future recommendations were made to continuously enrich the adoption of indigenous values into teaching and learning process in order to enhance students' competencies

**KEYWORDS:** *Tri Hita Karana*, blended learning, students' competencies

### 1.0 INTRODUCTION

Human resources hold important roles in the development of education sciences and technology. Not only are they responsible for the development of technology (e.g. industrial revolution 4.0), but they also ensure the technology will be able to facilitate a better and happy life for society (e.g. society 5.0). In other words, current and future human resources must be able to combine science and technology with humanistic values.

In every country, its society has their own humanistic values that are derived from their indigenous values. Harmsworth (2002) stated indigenous values and knowledge provide a platform for diversity and enrichment of culture. Therefore, even though indigenous values are varied and unique in each environment, the values will contribute to the global community. Indigenous environmental values support sustainability and become human values (Gratani, *et.al*, 2016).

Bali as one of the provinces in Indonesia has various indigenous values that support its society to live in harmony. One of the values is *Tri Hita Karana*. This value guides the Balinese community to have three harmonic relationships. First is harmony with God known as *Parahyangan*. Second is harmony with others known as *Pawongan*. The third is harmony with environment known as *Palemahan*. The world's happiness, peace and prosperity is believed to be achieved if the three harmonic relationships coexist (Donder, 2007).

*Tri Hita Karana* has been chosen as living value of the Balinese community, including on campus or higher education system. *Tri Hita Karana* is clearly stated as the university's vision of the Universitas Pendidikan Ganesha. Currently, the value has been discussed in many events of the campus in order to be implemented immediately. The next question is: what is the best way to concretely insert *Tri Hita Karana* value, not only into campus management system but also into learning content?

In addition, the rapid development of information communication and technology (ICT) is another challenge that requires the university to modify its delivery of learning strategy. One of the efforts is introducing the campus community with innovative delivery learning strategy namely blended learning. Blended learning as one forms of integration of technology into instruction combines times and modes of learning, integrates the best aspects of face to face and online interactions for each discipline, and uses appropriate ICTs (Saliba, Rankine dan Cortez, 2013). The next challenge is to provide blended learning that adopts the indigenous value, such as *Tri Hita Karana*.

### 1.1 Blended Learning

A combination of face to face and e-learning is called hybrid instruction or blended learning (Smaldino, *et. al.*, 2008). It is a strategic and systematic approach that integrates the best aspects of face-to-face and online interactions for each discipline (Marsh, 2012). By using appropriate ICT, blended learning is combining times and modes of learning. It will work well with the support of the system, such as human resources, infrastructure and academic aspect (Marsh, 2012; Hande, 2014). The type of blended learning that will be developed must be based on careful need analysis. Staker and Horn (2012) classified several blended learning models that can be considered by educators in implementing blended learning. The models are: rotation model, flex model, self-blend model, and enriched-virtual model.

### 1.2 *Tri Hita Karana*

The terms *Tri Hita Karana* basically came from Sanskrit Language then entered the old Javanese Language and finally became part of the Balinese Language. It consists of three words: *Tri* means three, *Hita* means prosperity or happiness, and *Karana* means the cause (Pendit, 2009). The meaning of these three words combined becomes the three things that cause prosperity or happiness. The three things are: *Parahyangan*, *Pawongan*, and *Palemahan*. (1) *Parahyangan* which means harmonic relationship between human and his/her God, (2) *Pawongan* which means harmonic relationship between people. (3) *Palemahan* which means harmonic relationship between humans and the environment. The three harmonic relationships bring prosperity and happiness to Balinese people (Donder, 2007).

### 1.3 Students' Competencies

A set of competencies targeted for mastery by students in certain levels. It has an impact on the structure of education plan (Ronald, *et.al*, 2002). Therefore, in developing blended learning, it must be based on identified competencies for every course/instruction. Soland, *et.al.* (2013) had identified three major students' competencies for the 21<sup>st</sup> century including: cognitive competency, interpersonal competency and intrapersonal competency. To achieve the three competencies, the use of technology is crucial as it is stated by Shyamlee and Phil (2012), they found that technology plays a very important role for students to be successful in learning, specifically in learning English. Beside the use of technology, the insertion of humanistic values is also significant to achieve the three competencies as revealed by Chen and Schmidthe (2017), they found that humanistic elements in education practice will allow the instructors in helping their students to develop skills, e.g. team work, problem-solving, lifelong learning and other skills in order to be successful in the workplace.

## 2.0 METHODOLOGY

### 2.1 Research Design

Current research is research development of learning content in blended setting by inserting *Tri Hita Karana* as indigenous value of Balinese community. The research design is quasi experiment to test the new learning delivery strategy and content. The development of learning strategies, learning activities as well as learning content followed research model and procedure as follows.

### 2.1.1 Research Model

Debra dan John (as cited in Hanan & Mervat, 2015, p. 360 ) stated that there are four steps in developing blended learning. The four steps are: 1) planning, 2) design and development, 3) implementation and 4) review (evaluation).

### 2.1.2 Research Procedure

Referring Debra dan John model in developing blended learning, the following procedures were conducted throughout the research. There were four main phases.

**Phase one:** planning. The first phase was modifying the face to face lesson plans into blended learning lesson plans for six courses, namely: Counseling Psychology, ICT Development for Early Childhood students, Learners' Development, Education Profession, Descriptive Statistics for Educational Technology Department, and Descriptive Statistics for Elementary School Teacher Department. The lesson plans were modified in terms of learning setting and the insertion of *Tri Hita Karana* value. There were four lesson plans that had been modified for each of six different courses so that there were 24 lesson plans in total.

**Phase two:** designing and developing. Based on modified six lesson plans, then the learning strategies, activities and contents were designed and developed for both settings, online and face to face. The value of *Tri Hita Karana* was then indicated in the learning activities. Learning activities and contents of six different courses were implemented consecutively and covered four topics respectively. The structure of the online module can be viewed in Figure 1.

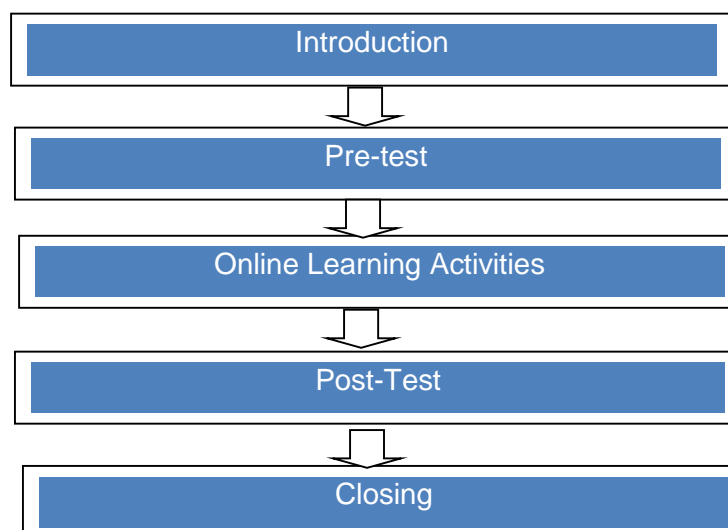


Figure 6: The Learning Implementation Cycle of *Tri Hita Karana* Values for Online Module

**Phase three:** implementing. The developed blended learning strategies, activities and contents were then implemented. The implementations of four lessons were taking time of two months, in December 2017 and January 2018.

**Phase four:** review (evaluation). After the implementation, the review processes for the developed blended learning were conducted. The review results were used to discuss future improvements and recommendations.

## 2.2 Research Subjects

The subjects of this research are students who were taking the six developed blended courses in the Faculty of Educational Sciences at Ganesha University of Education.

### 2.3 Data Collection Methods

In order to gather the data to answer the research questions, the following methods were used. First is documentation to gather data regarding the design of blended learning that inserting the values of *Tri Hita Karana*. Second is interview to gather data of lecturers' opinion toward practical qualities of the developed blended learning. Third is a questionnaire to collect the data of developed blended learning validities. Last, test was used to collect the data of students' competencies.

### 2.4 Data Analysis Techniques

The collected data were then analysed. All collected data were analysed carefully. Data collection and its analysing techniques can be seen in Table 1.

Table 1. Data Collection Methods and Data Analysis Techniques

Data Collection Methods	Data Analysis Techniques
1. Documentation	1. Descriptive techniques
2. Interview	2. Descriptive qualitative techniques
3. Questionnaire	3. Descriptive quantitative techniques
4. Test of Students Competencies	4. t-test

### 2.5 Instrument Development

Referring to data collection methods, the following instruments were developed.

Table 2. Instruments to Collect the Data

Data Collection Methods	Instruments
5. Documentation	5. Agenda of development report
6. Interview	6. Interview guidelines
7. Questionnaire	7. Questionnaire sheets
8. Test of Students Competencies	8. Six Set of test kit

Based on the questionnaire sheets, seven experts (one expert of learning design and sixth experts of learning content) were involved in validating the developed blended learning and they filled the questionnaires. The results are shown in point 2.6.

### 2.6 The validity of Developed Blended Learning based on *Tri Hita Karana*

The result of data analysis toward data gathered from questionnaire shows the developed blended learning based on *Tri Hita Karana* for six courses were valid. **First**, the results of content validity can be seen on Figure 2.

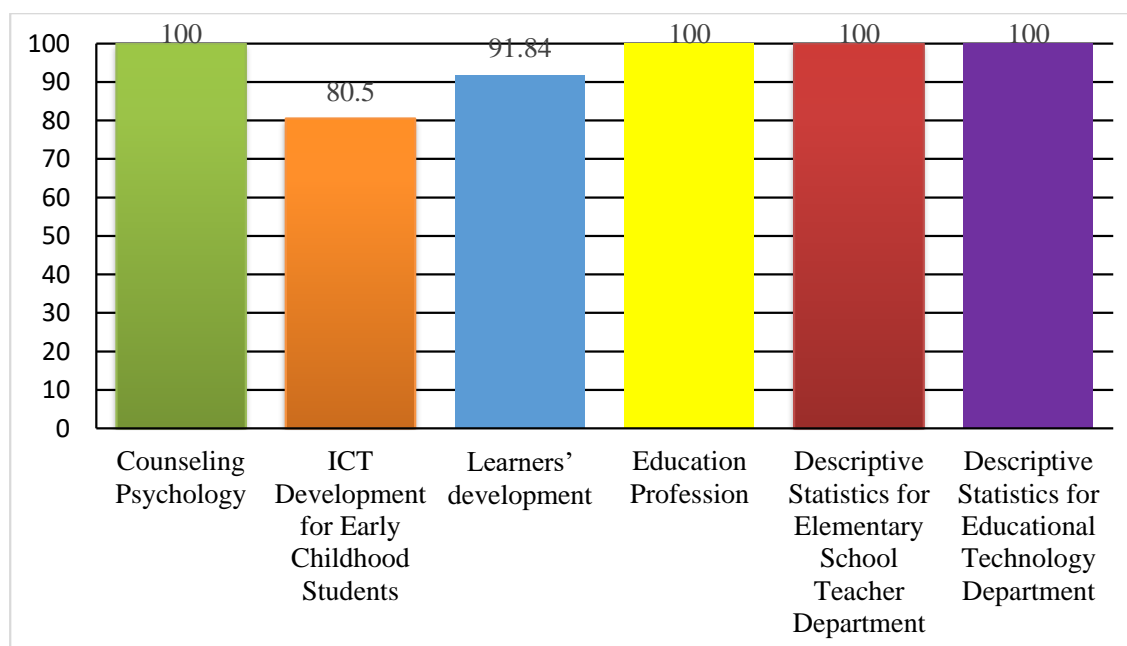


Figure 2: Content Validity of Developed Blended Learning Based on *Tri Hita Karana*

Figure 2 presents content validity of six developed blended learning based on *Tri Hita Karana*. Overall data shows that the blended learning were valid. Four blended learnings were 100% valid reviewed by content experts. Only one blended learning gained score under 85% there was ICT Development for Early Childhood Students. This was one course offered by the Department of Early Childhood Education in which the students were rarely used of technology and the content relatively specific and must be offered carefully to meet the standard that has been determined by the Department. The expert also suggested that there must be more motivation strategy toward the presentation of the learning content for both settings, face to face and online. This is in line with the research result conducted by Adelstein and Barbour (2016) that showed motivational strategies hold an important role in students' success, specifically in taking the online part.

**Second**, the results of instructional design and technology expert review can be viewed on Figure 3.

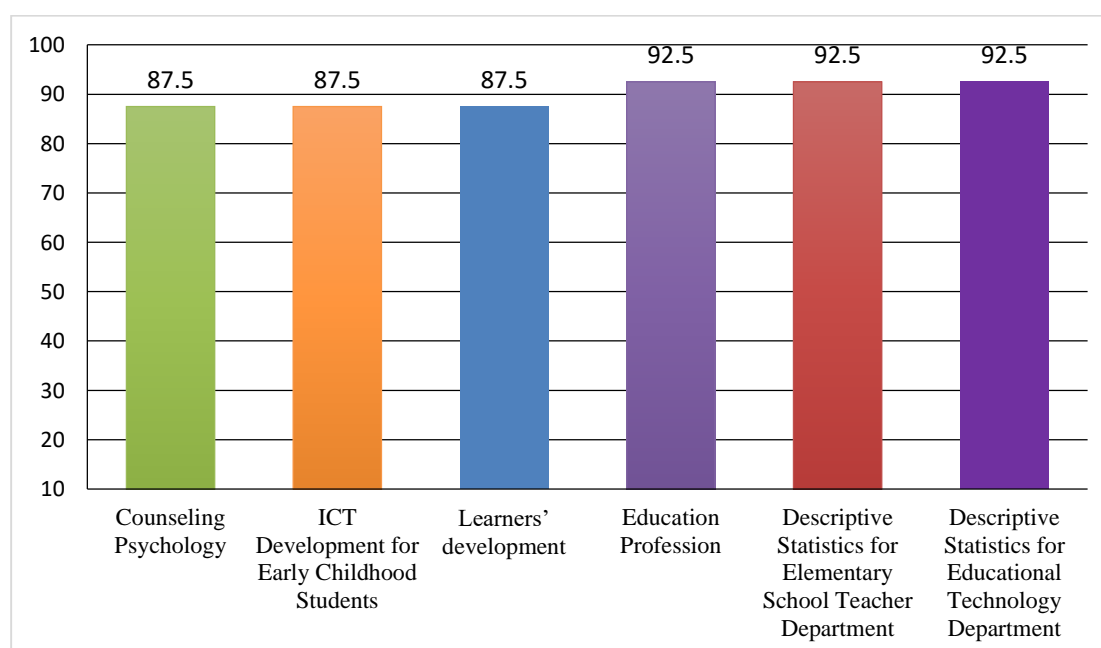


Figure 3: Content Validity of Developed Blended Learning Based on *Tri Hita Karana*



Figure 3 shows the instructional design and technology validity of six developed blended learnings based on *Tri Hita Karana*. The developed blended learnings were valid reviewed by instructional design and technology expert.

### 3.0 FINDINGS AND DISCUSSION

Based on the development documentation result, the design of inserting *Tri Hita Karana* value in teaching and learning process can be seen in Table 3.

Table 3. Design of Inserting *Tri Hita Karana* Values into Learning Activities and Content of Blended Learning

Blended Learning					
Online Learning			Face to Face Learning		
Learning Strategies	Learning Activities	Learning Content Format	Learning Strategies	Learning Activities	Learning Content Format
1. Online learning by using computer	1. Learning introduction (greetings and friends with “Om Swastyastu” which by mean safe in God’s bless- <b>Parahyangan</b>	1. Video 2. Audio 3. Animation 4. Slide presentation 5. Interactive module	1. Classroom meeting 2. <i>Synchronous</i> 3. <i>Bidirectional communication</i>	1. Introduction by saying “Om Swastyastu” which by mean safe in God’s bless, then continued by praying- <b>(Parahyangan)</b> 2. Group presentation by appreciating each group member to present <b>(Pawongan)</b> 3. Practice 4. Evaluation 5. Closing by returning all facilities as it seen before the class started- <b>(Palemahan)</b>	Text book, module, handout
2. <i>Synchronous</i>	2. Concept exploration by citing learning resources properly- <b>Palemahan</b>				
3. <i>Asynchronous</i> (email)	3. Practice				
4. <i>Bidirectional communication</i>	4. Independent study				
	5. Discussion by uploading and responding other student politely <b>(Pawongan)</b>				
	6. Group work- <b>(Pawongan)</b>				
	7. Assignments				
	8. Evaluation				

#### 3.1 The practical quality of developed blended learning based on *Tri Hita Karana*

The interviews with six lecturers show that the developed blended learning based on *Tri Hita Karana* practically have good qualities. The lecturers shared their practical experiences during the implementation of developed blended learning into three categories: learning content characteristics, students’ enthusiastic, and the support of the facilities and environment.

Table 4. Lecturers' Practical Experiences in Implementing the Developed Blended Learning

Lecturers' Views	Practical Experiences in Implementing Blended Learning
Counseling Psychology Course	"I am so delighted to teach the learning content by considering the harmonic relationship integrated in the content. My students become enthusiastic with the activities and technology, they become more disciplined. But the internet connection must be improved for future implementation".
Education Profession Course	"I had touched one class in blended setting last semester, but there was no <i>Tri Hita Karana</i> value that integrated in the learning content. So this was my first time teaching by using technology and at the same time delivering the learning content and learning activities that contain <i>Tri Hita Karana</i> value. My students were not comfortable at first with the online part system for Module 1 but on Module 2 they get used to it".
ICT Development for Early Childhood Students Course	"I had some challenges in teaching my students with the developed blended learning. The challenges were not only on how to use the technology for online part of the learning but also on how to motivate my students to take it consistently for every module. At the end, we made it although we had struggled to learn, particularly for the online part. But this struggle made us as lecturer and students become closer since we tried to do our best for the course. Internet connection must be improved".
Learners' Development Course	"I am so happy to be part of the implementation of the developed blended learning on Learners' Development Course. The learning contents and activities were rich, update, and contextual. My students become more motivated to learn. Sometimes the internet connection was trouble, but overall my students and I really enjoyed the blended learning".
Descriptive Statistics for Educational Technology Department Course	"Teaching statistics with online setting was new for me. But with the developed blended learning, teaching statistics, especially descriptive statistic, made my students become interested in the course. Through the activities and learning content provided online and in face-to-face, they can learn from each other and they can use the technology to help them to study better. Internet connection is good enough since the students can work offline first in Excel before they uploaded their assignment online".
Descriptive Statistics for Elementary School Teacher Department Course	"I had gained wonderful experience in teaching statistics in blended setting. The learning contents were contextual and the learning activities were motivated my students to be active in the class and also online. There should be an improvement toward computer facilities and their connection so the learning process, particularly for the online setting would run smoothly".

From the lecturers' views above, it can be stated that all lecturers had positive practical experiences in implementing the developed blended learning. Although there were sometimes technical problem for online session, specifically the Internet connection disruption, the developed blended learning practically has good quality. Lalima and Dangwal (2017) revealed the success of practical use of blended learning requires hard efforts, good moving, enough budget, and students' and teachers' high motivation. In this study, lecturers' and students' effort to make the blended learning work well were occurred. Lecturers were enthusiastic in teaching with developed blended learning, not only using the new technology but they were also learned that there were humanistic values integrated into the course content that become their expertise.

The six lecturers also shared their views toward students' activities and content being developed into blended learning. The students become more active in both setting and personally have good relationships with their lecturers and other class members. This made the relationships among lecturers and students become closer and the caring value occurred, in and outside of the class.

### 3.2 The effectiveness of developed blended learning based on *Tri Hita Karana*

Considering the data of students' competencies for five courses were not distributed normally and its homogeneities were varied, the data were then analysed by using Wilcoxon test. The other course (Education Profession) was analysed by using t-test. Details results can be seen in Table 5.

Table 5. The effectiveness of the blended learnings based on *Tri Hita Karana*

Analysis Technique	Courses	Provision	Results
Wilcoxon test	Counseling Psychology	Z	-4.327 ( $\alpha$ )
		Asymp.Sig (2-tailed)	0.000
	ICT Development for Early Childhood Students	Z	-4.393 ( $\alpha$ )
		Asymp.Sig (2-tailed)	0.000
	Learners' Development	Z	-4.400 ( $\alpha$ )
t-test		Asymp.Sig (2-tailed)	0.000
	Descriptive Statistics (Edtech Dept.)	Z	-3.581 ( $\alpha$ )
		Asymp.Sig (2-tailed)	0.000
	Descriptive Statistics (Elementary School Teacher Dept.)	Z	-4.292 ( $\alpha$ )
		Asymp.Sig (2-tailed)	0.000
	Education Profession	df=26	0.032
		Sig.( 2-tailed) 0.05	

The results of Wilcoxon tests for five blended learning were significantly improved students' competencies. The other one, result from t-test also shows students' competencies were significantly improved. From these results, it can be stated that the developed blended learning with the insertion of the *Tri Hita Karana* value were effective in improving students' competencies. Not only students' cognitive competencies, but the improvement was also on students' interpersonal skills and performances. All of the learning elements gathered together to support the students to learn their best. The successful of blended learning must be seen from situation, course, individual and outcome (Bowyer & Chamber, 2017).

The implementation of blended learning must deeply look at the right moment of the implementation, in other words, the right situation. Matching activities and contents between face to face meetings and online is brought consistency on students in internalizing the value of *Tri Hita Karana* into their study and everyday lives. The characteristics of the courses that had been developed into blended setting were possible to be inserted with the value of *Tri Hita Karana*. The students who were taking the developed blended learning obtained improvement in mastering the determined competencies. Moreover, after taking the four modules of the courses, the students were reminding eager to continue studying the next modules. It is realized that inserting certain value into teaching and learning needs uncertain time with sustainable efforts from all of education elements. In the future, further studies on outcome aspect are required since in current study, the outcome cannot be seen immediately.

## 4.0 CONCLUSION

The findings derived the following conclusions. *First*, inserting indigenous value such as *Tri Hita Karana* in the content and activities of blended learning require systematic procedure and continuous efforts from educators supported by the environment. *Second*, the developed blended learning based on *Tri Hita Karana* was valid viewed from expert reviews and it was effective viewed from students' competencies. *Third*, the impacts of inserting indigenous values in teaching and learning process provide positive views from lecturers.

Based on conclusions, the following recommendations were made. (1) Inserting indigenous values in the content and activities of blended learning must be conducted systematically and continuously. (2) Valid blended learning that adapt local community values should be implemented continuously and widely to obtain more general view of its effectiveness and as references for others. (3) All possible indigenous values that maintain and strengthen human resources development should be inserted properly into campus and community system for sustainable development of technology-based humanistic values.

## REFERENCES

- Adelstein, D., & Barbour, M. (2016). Building Better Course: Examining the Content Validity of the iNACOL National Standards for Evaluating Online Course. *Journal of Online Learning Research*, 2(1): 41-73.
- Bowyer, J., & Chambers, L. (2017). Evaluating Blended Learning: Bringing the Elements Together. *Research Matters: A Cambridge Assessment Publications*. <http://www.cambridgeassessment.org.uk/research-matter/>
- Chen, P., & Schmidhe, C. (2017). Humanistic Elements in the Educational Practice at a United States Sub-Baccalaureate Technical College. *International Journal for Research in Vocational Education and Training (IJRVET)*, 4(2): 117-145.
- Donald, E.T, Herb, J.N., William, C.H., & Wilding, W.V. (2002). Definition of Students Competencies and Development an Education Plan to Assesst Mastery Level. *International Journal Enganging Education (IJEE)*, 18(2): 225-235.
- Donder, I K. (2007). *Kosmologi Hindu*. Surabaya: Paramita.
- Dwaik, R., Jweiless, A, & Shrouf, S. (2016). Using Blended Learning to Enhance Student Learning in American Literature Courses. *The Turkish Online Journal of Educational Technology*, 15(2), 126-137.
- Dziuban, C., Graham, C.R., Moskal, P.D., Noberg, A., & Sicilia, N. (2018). Blended Learning: The New Normal and Emerging Technologies. *International Journal of Educational Technology in Higher Education*, 15(3), p. 1-p.10. <https://educatoontechnologyjournal.springeropen.com/article/10.1186/541239-017-0087-5>.
- Gratani, M., Sutton, S.G., Butler, J.R.A., Bohently, E.L., & Foale, S. (2016). Indigenous Environmental Values as Human Values. *Cogent Social Science* 2, 1-17. <http://dx.doi.org/10.1080/23311886.2016.1185811>.
- Hanan, A. & Mervat, M. (2015). Blended Learning Possibilities in Enhancing Education, Training and Development in Developing Countries: A Case Study in Graphic Design Courses. *TEM Journal*, 4 (4), 358-365.
- Hande, S. (2014). Strengths Weaknesses Opportunities and Threats of Blended Learning: Students' Perceptions. *Annals of Medical Health Science Research*. <https://ncbi.nlm.nih.gov>
- Harmsworth, G.R. (2002). Indigenous Concepts, Values and Knowledge for Sustainable Development: New Zealand case studies. <http://www.researchgate.net/publication/228742301>.
- Lalima, & Dangwal, K.L (2017). Blended Learning: An innovative Approach. *Universal Journal of Educational Research*, 5(1): 129-136.
- Marsh, D. (2012). *Blended Learning: Creating Learning Opportunities for Language Learners*. New York, USA: Cambridge University Press.
- Pendit, N. (2009). *Glosari Sansekerta*. Denpasar-Indonesia: Sarad.
- Saliba, G., Rankine, L., & Cortez, H. 2013. *Fundamentals of Blended Learning*. Australia: University of Western Sydney.
- Shyamlee, S.D., & Phil, M. (2012). Use of Technology in English Language Teaching and Learning: An Analysis. *International Conference on Language, Medias, and Culture IPEDR*, 33: 155-156.
- Smaldino, S.E., Lowther, D.L., & Russell, J.D. (2008). *Instructional Technology and Media for Learning* (9<sup>th</sup> ed.). Upper Saddle River, NJ: Pearson Education.
- Soland, J., Hamilton, L.S., & Stecher, B.M. (2013). *Measuring 21<sup>st</sup> Century Competencies: Guidance for Educators*. Asia Society: Rand.
- Staker, H., & Horn, M.B. (2012). *Classifying K-12 Blended Learning*. <http://www.christenseninstitute.org>.

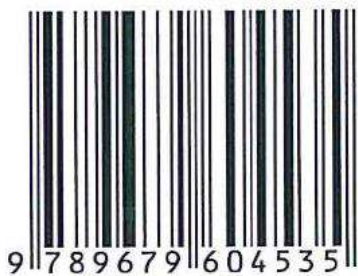
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eISBN 978-967-960-453-5



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