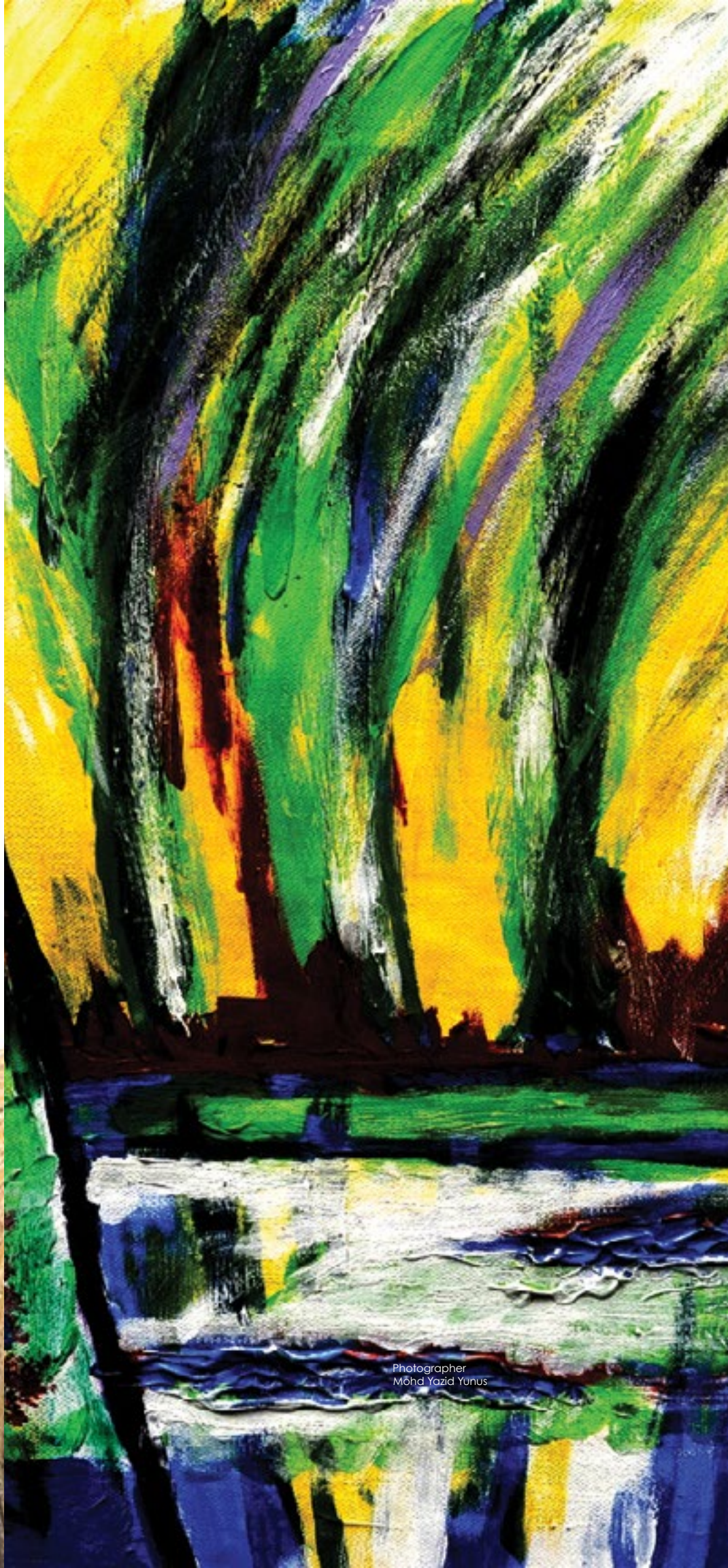




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Breaking the Glass Ceiling of S&T Publications - A Design Perspective

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INTRODUCTION

The pursuit of excellence among academicians is pressuring design researchers to publish in high impact journals. Writing and publishing are becoming mantras at research universities and enforced in performance appraisal by university's management. It is becoming very obvious that any school of arts or built environment in the nation's research universities are at the bottom if not almost at the bottom. The purpose of this feature article is to debunk the S&T myth that writing and publishing a journal article is the only way to increase citation-indexed articles for a research university. We are arguing that there is an alternative way to achieve similar publication goals that are equally rigorous but in line with the background nature of design works.

This feature article highlights a valuable knowledge gem—somewhat obscure among design schools—which existence since 1977 has been taken for granted by many design-and humanities-based academicians worldwide. The knowledge gem is the arts and humanities indexes. This feature article describes how design schools could take advantage of them and obtain equal recognition for design researchers as per their peers in science or social science fields. Hence, allowing design academicians to contribute in creative ways to boost the citation-indexed need for supporting a research university.

This is the story about initiatives by the Faculty of Design and Architecture, Universiti Putra Malaysia (UPM) to increase its citation-indexed articles as we wish to share with colleagues in Malaysia and other parts of the world. This feature article will first present the background problems among design academicians and our approach to inculcate design research at the faculty. Then, it will describe the highlights of the available arts and humanities indexes before explaining the strategies to meet citation-indexed quality publication. It concludes with recommendations on how research universities could overcome the pain of dealing with the unconventional nature of design academicians compared to their colleagues in other established science or social science fields.

THE PROFESSIONAL VERSUS RESEARCHER DICHOTOMY

It was truly a historic day for the Faculty of Design and Architecture on 5th December 2008. It was a day to remember because never before a large numbers of design academicians and management of the faculty casted their commitments to change how "business" should run in the faculty. It was a "do it" or otherwise "die" situation. They were serious about breaking the status quo of the faculty and in doing so, willingly braving the challenges that are expectedly forthcoming. It was profoundly obvious that there were always two groups of design academicians: the professionals and the researchers. The greatest misconception is, the professionals do not write (let alone publishing) while the researchers have an easier time publishing their research outcomes. Not publishing has always been the bane of any design school and our faculty is guilty in part—if defined in the conventional perception of "writing". The challenge is, is it possible to inculcate a "research" culture in a dominantly "professional" design environment. Can design academicians perform like scientists and social scientists in other fields? Can the faculty allow design academicians to continue doing what they do best—teaching design studios—while publishing indexed articles concurrently. Those present on that day saw hope in the unlimited possibilities of reaching the citation-indexed requirements by continuing to do what every design academicians are good at and trained for—teaching design studios.

INCULCATING A DESIGN RESEARCH CULTURE

The Faculty of Design and Architecture is located in the centre of excellence for agricultural education of Malaysia. The faculty is blessed with this position as it is bestowed with agricultural excellence opportunities beyond the mere raw materials, machineries and processes involved in producing high quality agricultural products. Agricultural excellence includes the development of high quality living environment—man-made and natural—that would support the well-being of farmers and entrepreneurs, the artifacts they use and the environment they interact with. Hence, the United Nations Agenda 21 challenged design researchers to look deeply into the social, economic and environmental components while majority of UPM's faculties spearhead further innovations in agriculture. We have come to realize that to move forward, design researchers and practitioners must reach out to collaborate with others in order to understand and embrace their uniqueness for us to excel as the creative integrators. We shall lead in collaborative research and teaching.

The faculty had initially thought that by introducing three research niche areas: a) Environmental Design Behaviour, b) Environmental Design Technologies and Systems and c) Environmental Design Integration, it will be able to inculcate the necessary design research culture on campus. The first Environmental Design Behaviour Research Group focuses on both applied and theoretical developments pertaining to environmental behaviour in the natural and built environments. The second Environmental Design Technologies and Systems Research Group include research and application of advanced technologies and systems in promoting sustainable products and their green development. The final Environmental Design Integration Research Group focuses upon research and practice activities throughout the product development lifecycle with emphasis on the design phases that influence their implementations and post-operations.

Alas, the number of new authors is not encouraging after three years running while the pool of existing authors excelling ahead as the research niche areas support their research programs. Informal observations and interviews informed us that lacking of writing skills and having weak scientific research skills are main culprits. Imposing the pursuit of a doctoral degree to junior design academicians after certain period of appointment has been quite successful in producing researchers though it is a timely process. On the other hand, it was not the lack of creative ideas that discourages publication. It was rather the lack of writing skills that impede design academicians. No matter how many so-called scientific or academic writing workshops the faculty conducted, the responses were not encouraging to design academicians. An obvious answer is, design academicians were not trained to write. Instead, they have been trained to visually communicate their ideas using available visualisation tools either manually or virtually. Therefore, we strategise how faculty can exploit these visual communication skills for creating its citation-indexed articles for a research university. There are two other related factors that require further studies if faculty intents to forge ahead in this direction. Firstly, where these visually communicated articles would be accepted for publication and secondly, how can these articles qualify as citation-indexed articles. It is here that our indexing journey starts.

THE CITATION-INDEXING MYTH

In this section, we will first describe the background of the arts and humanities indexes before explaining the faculty's strategy. The Office of the Deputy Dean of Research was instructed by the Dean to prepare some strategies to overcome the publication problem prior to the 5th December 2008 workshop. Many internet searches by staff about indexing in environmental design studies strongly pointed to several indexes involving arts and humanities.

Among the prominent ones are the *Arts and Humanities Index* (AHI) in SCOPUS and the *Arts and Humanities Citation Index* (A&HCI) under the Institute for Scientific Information (ISI). The ISI is now called Thomson Reuters Scientific. More in-depth searches—limited by what were available at UPM's library on both indexes and other open sources—had given us insights on how different these indexes were from the norm *Sciences Citation Index* (SCI) or the *Social Sciences Citation Index* (SSCI). Indeed, our most profound finding and most welcoming was to know that the A&HCI is at par as one of the three major indexes of Thomson Reuter Scientific's *Web of Science* (WoS). It has now become our targeted opportunity to publish to be counted as a citation-indexed article.

We quote Testa (2006) who did an analysis of the WoS index to provide a view about the A&HCI for readers below:

"Art and Humanities Citation Index. The A&HCI covers 1123 journals. Although they all meet Thomson Scientific selection criteria, citations in the Arts and Humanities do not necessarily follow the same pattern as citations to social sciences and natural sciences articles. In addition, arts and humanities journal articles frequently reference non-journal sources (e.g., books, musical compositions, works of art and literature). Consequently, citation data, while sometimes useful, are frequently much less important in journal evaluations in the arts and the humanities."

- Testa (2006, p. 137)

From our neighbouring Chulalongkorn University in Thailand, we quote from its database's website on one prominent indexed database to allow readers another glimpse of the breadth of the arts and humanities indexes.

"Avery Index to Architectural Periodicals. AIAP... the only comprehensive American guide to the current literature of architectural and design, surveys more than 2,500 U.S. foreign journals. Three-fourth of these is not indexed in any other source. This database covers the international scholarly and popular periodical literature, including the publications of professional associations, U.S. state and regional periodicals, and major serial publications in the architecture and design of Europe, Asia, Latin America, and Australia....approximately 400 current and over 1000 retrospective architectural and related periodicals with primary emphasis on architectural design and history but coverage as well of archaeology, landscape architecture, interior design, furniture and decorative arts, garden history, historic preservation, city planning, urban design, real estate development and environmental studies...."

- www.car.chula.ac.th/curef-do/

It was indeed a totally different worldview these arts and humanities indexes had given us and their contents shamed us for not giving enough credit to their very existences. It is very unfortunate that UPM does not fully subscribe to the A&HCI, thereby not giving similar accord to journals and databases in arts and humanities for counterchecking in Thomson Reuters's listing. On the other hand, perhaps design academicians are so naïve about design research that we had historically saw our path being set up by other dominant scientists and researchers in the university. Discussions with peers in other local and foreign universities also confirm that our faculty is not alone in facing similar problem. It is going to be a nightmare to design academicians trying surviving in a research university establishment. We will never admit that we are experts on information sciences, but we now do have some knowledge on how to utilise these newfound indexes to our advantages which we believe will facilitate faculty to support UPM's research university's status.

The late Robert L. Hayne, ISI's Chief Editor, had asked Eugene Garfield in 1977 to never forget to mention that "the history of science is replete with great scientists who combined both art and science to produce the quintessence of both". Eugene Garfield is the Founder and Chairman Emeritus of ISI, now Thomson Reuters. He gave the example of Leonardo da Vinci (combining mathematics and arts) and Isaac Newton (combining philosophy and science). In an article about establishing the A&HCI in ISI in 1977, Garfield ponders whether it would revolutionise scholarship. The A&HCI was eventually introduced in 1978 by ISI then after a two-year intensive marketing research program to determine its needs. Garfield describes a worldwide survey ISI had undertaken and found that "the arts and humanities, no less than the sciences, need a large-scale index that provides multi-disciplinary coverage; an up-to-date service issued on a current basis and cumulated annually would be welcomed; and there was widespread belief in the potential effectiveness of citation and title-word indexing in arts and humanities information retrieval". In fact, he also commented that the A&HCI "will index "implicit" citations, which occur when an article refers to and substantially discusses a specific work but does not formally cite it. Even reproduced works of art and music scores will be picked up as implicit citations,

with a code indicating that the "cited" work is an illustration". However, due to the ambiguity surrounding "implicit" citations, Garfield acknowledges the challenge of defining the arts and humanities. The A&HCI needs to consider the wide variety of items in the form of articles, book reviews, review articles, bibliographies, letters, record and performance reviews, literary criticisms and works of fiction such as stories, plays and poems. Therefore, it is pertinent that design schools or faculties must convince and direct their universities to confer similar recognitions as their scientists and social science researchers.

PREREQUISITES FOR INDEXING DESIGN ARTICLES AT INSTITUTIONAL LEVEL

We have mentioned earlier two related factors for us to be successful in our indexing goals. The first required us changing the criteria for the university's annual academic performance. These proposed criteria are expected to motivate design academicians to attain the best possible annual evaluation marks by doing what they were good at. Credit should be given to the Dean's Office for ensuring our voices were heard at UPM's management level. There were a number of strategic planning workshops, management meetings and technical meetings where members of the faculty's management team were present to convey our message across. We found the formation of alliances and collaborations with like faculties in UPM during the determination of academic evaluation criteria for the social sciences division fruitful. We were given suggestions during the course of our participations that our design faculty could not really park itself under either the social science or science and technology division. At this instant, the faculty is more comfortable leaning on the social science root. Nevertheless, the faculty would like UPM to seriously consider this matter since Thomson Reuters (formerly ISI) has acknowledged these independent differences more than 30 years ago by establishing the A&HCI. The faculty is pleased to inform that it has successfully integrated its visual communication outputs or activities leading towards those endeavours into the university's academic performance evaluation criteria albeit under the social science's division.

The second factor is qualifying visual and audio artifacts as citation-indexed articles in selected indexed databases. Our case's defense was mostly founded on Garfield's (1977) position in establishing the A&HCI by the reputable ISI. Let us remind ourselves about a typical publishing process in a scientific journal. When we submit a journal article, the chief editor of the journal will review and ascertain its acceptance to the journal's theme. He or she will then distribute the journal article to at least two blind reviewers to review the content and contribution to the field's body of knowledge. The reviewers will provide comments to the chief editor and inform him or her about the acceptance level of that journal article. The Chief Editor then provides the reviewers' comments to the author and informs him the review process's result. Upon the journal article's acceptance, a number of activities will take place such as preparation for printing, confirmation of artwork, obtaining the necessary authenticity agreement from the author and transfer of copyrights to the publisher. A design artifact is required to go through a similar process although it is slightly different in the overall outcome.

A registered exhibition to an authority body conveys similar weightage as a journal issue. The museum is the ultimate "impact factor journal" for a design artifact especially if it is among the established ones. When a call for artifacts is

made for a registered exhibition, artisans will submit their works to be reviewed by independent members of the design communities. The curator of an exhibition plays similar role as the editor for a special journal issue. A review will be made by several layers of review panels as the organiser selects the best artifacts that would represent the theme of the exhibition. These reviews are very important and are indexed in various arts and humanities databases. Eventually, the artifacts are also catalogued and indexed but the biggest challenge is storing them safely before, during and after the exhibition. Hence, the need of a well-designed gallery or museum with properly controlled indoor environment for its protection is critical. The faculty is currently in the process of developing its own gallery at the faculty for this purpose.

We are grateful to receive UPM Management's support that the ultimate place for our design output is in an exhibition. UPM has applied to be a member of an international organisation for museums through its local regional office with the faculty as the secretariat. UPM's membership under the university category will be the first in the country since other members are galleries or museums to date. The level and place of exhibition determines the significance and impact factor of the design output. The levels of exhibition may range from departmental, faculty, university, national and international synonym to seminar, conference, refereed journal, citation-indexed journal and impact factor journal for a written article. Each registered exhibition has its own checklist of things to do to meet the necessary quality. One key criterion is developing the indexing database at each exhibition level. We are starting to develop our own design index through our "Sustainable Tropical Environmental Design Exhibition (STEdex)" with the assistance and support of UPM's library this year and will keep building on it in the future. Moreover, we are grateful that the Office of the Deputy Vice Chancellor (Research and Innovations) has already included important steps and quality criteria into its quality manual documents that would support our exhibition endeavour.

RECOMMENDATIONS AND CONCLUSIONS

In conclusion, the faculty believes that a design school or faculty in Malaysia has an untapped avenue to publish citation-indexed articles in reputable arts and humanities indexes to support a research university. Our faculty has identified two factors to promote this opportunity. They are ensuring the production of design artifacts receive recognition in the university's annual academic performance appraisal process and ensuring the qualification of visual and audio artifacts as citation-indexed articles. We proposed utilising learning outputs from the design studios that are evaluated at studio, departmental and faculty level by independent reviewers. A cataloguing method is recommended as per any regular exhibitions held by public or private organisations. It is anticipated that the accumulated selected works of arts and design would one day become a valuable collection and referral about our tropical civilisation. Hence, more concerted efforts must be done by all design schools or faculties to facilitate this opportunity. Perhaps a similar international concerted effort could be done to place design schools or faculties at par with their colleagues in the sciences and social sciences schools or faculties.

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