MAKING MALAYSIAN RESEARCH AVAILABLE THROUGH PUBLISHING IN OPEN ACCESS E-JOURNALS AND E-PRINTS

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ABSTRACT

Individual authors are making their research available by posting their articles to personal or institutional Web pages and to disciplinary repositories. The recent trend is to publish or self-archive in open-access journals and "e-print" (i.e., preprints or postprints) repositories, both of which make the full text of scholarly articles freely available to everyone on the open Internet. Electronic journals and electronic archives which are OAI compliant would help to solve Malaysian research visibility problems. Malaysian authors are already contributing to these archives since there is none locally. The open archives serve the authors by facilitating their self-archiving, ensuring the long-term preservation of their documents and by providing word-wide easy access to their papers. Shedding light on open access reveals that scholars in diverse disciplines are both adopting open access practices and being rewarded for it as that articles deposited in these repositories have begun to receive citations and have also begun to achieve impact value.

Keywords: Open Access Initiative (OAI); Open Access E-Journals, Open Access E-Prints, Open Access Archives; Electronic publishing, Scholarly publishing; Self-archiving

INTRODUCTION

The World Wide Web facilitates and speed up the process of knowledge dissemination and has provided the means for researchers to make their research findings available to anyone, anywhere and at anytime. This applies to journal articles regardless or not their library has the subscription to the journal in which the articles were published as well as to other types of research output such as conference papers, theses or research reports. This is known as Open Access. Researchers publish their research findings to establish claim to the research and to enable other researchers to build upon them. In the case of journal articles, not all academic institutions have been able to afford a reasonable proportion of all the expensive subscription-based scholarly journals and so accessing such articles has not been easy for most researchers. In fact, the researcher, the author of the paper, has to pay to access his on paper. Open Access changes all this.

The Open Access research literature comprises of free online copies of peer-reviewed journal articles and conference papers as well as technical reports, theses and working papers. In most cases there are no licensing restrictions on their use by readers. They can therefore be used freely for research, teaching and other purposes. Open Access is not self-publishing. It is not a way to bypass peer-review and publication. It is simply a means to make research findings freely available online to the whole research community.

There are two primary vehicles for delivering Open Access (OA) to research articles, OA journals and OA archives or repositories. Open Access Archives (OAA) are electronic repositories that include already published articles (post-prints) and other digital institutional products. The primary goal of OA archiving is to maximize the accessibility of the research publications and their impact. The chief difference between OA journals and OA archives is that the former conduct peer review and the latter do not. There are also other OA vehicles, which are not focused here, such as personal web sites, ebooks, listservs, discussion

forums, blogs, wikis, RSS feeds, and P2P and file-sharing network. The steady growth of OAA is due to the adoption of a common protocol of metadata retrieval defined by the Open Archive Initiative (http://www.openarchives.org) this enabling OAI-compliant archives to be searched seamlessly. This is of great benefit to authors of developing countries since institutions in these regions with compliant servers become part of the international community and their published research part of the global digital library of research.

Willinsky (2003) attempts to categorize the publication models of OA journals and OA archives and this is summarized in Table 1. E-print archive often carries on in co-existence with the journal system, as the policies of the journal enable authors to file their published papers in OA archives. Best known of this is the arXiv.org which began in high energy physics a decade ago and now provides access to a substantial portion of literature in a number of related areas. In terms of OA journals, the peer-reviewed First Monday which deals with issues related to the Internet serves as a good example of a journal that is immediately, completely and exclusively free to read and as such Willinsky (2003) referred to it as unqualified OA journal. The dual mode open access model exemplified by Journal of Postgraduate Medicine publishes an immediate and complete edition online of its print version to which it continues to sell subscriptions. An economically more conservative version of the dual mode is found with delayed open access, as in the case of the New England Journal of Medicine which provides complete free access six months after initial publication for subscribers. Then there is a form of author fee open access exemplified by Bio-Med Central which offers complete access to more than 90 electronic journals by charging author fees for successful papers. Another variation in open access is the partial open access which makes a portion of the journal free to read. Per-capita open access model includes the World Health Organisation's and the International Network for Scientific Information's successful effort to convince publishers of medical journals to make makes online versions of journals free to those living in countries with low per capita income. Scholarly journals too have developed an

approach to increase access to the journals with the provision of open access abstracts. Reed Elsevier for example provides access through its ScienceDirect portal to the e-abstracts of its 1,700 journals. In whatever way it is organized, Open Access means a gain in the circulation, exchange and advancement of knowledge.

Table 1: Types of open access archives and journals (Willinsky, 2003*)

Type of Open Access	Description	Journal or portal example
Eprint archive	Authors archive preprints and/or postprints in OA archive	Arxiv.org
Unqualified	Immediate and full OA publication of journal	First Monday
Dual mode	Both subscription print and OA journal editions offered	Journal of Postgraduate Medicine
Delayed	OA editions available some months later after initial publication	New England Journal of Medicine
Author fee	Authors pay fee to support OA publication	Bio-Med Central Entomological Society of America
Partial OA	Some articles in an issue are OA	New York Review of Books
Per capita	OA made available to country based on per capita income	HINARI (World Health Organisation)
Abstract	OA to journal table of contents and abstract	ScienceDirect

* Willinsky, J. 2003. The Nine Flavours of Open Access Scholarly Publishing. Journal of Postgraduate Medicine. 49: 263 - 267

OPEN ACCESS SELF-ARCHIVING: MAXIMIZING PUBLIC ACCESS TO RESEARCH FINDINGS

To self-archive is to deposit a digital document in a publicly accessible website, preferably an OAI-compliant Eprint Archive. Depositing involves a simple web interface where the depositor types in metadata (such date, author name, title, and journal name), and then attaches the full-text document. The purpose of self-archiving is to make the full-text of the peer-reviewed research output of scholars or scientists and their institutions visible, accessible, harvestable, and usable by any potential user with access to the Internet. This will maximize public

access to research findings online and in turn maximizes its visibility, usage and impact.

The practice of self-archiving has its roots in the field of computer sciences where researchers were depositing results in ftp archives some decades ado, and later on websites. A preprint culture had been in place for many years in print form in the computer science community and as the digital age arrived, the practice migrated from paper to electronic form. Today there are more preprint and postprint research articles freely available through self-archiving in computer science than in any other subject (Alma & Brown, 2004). CiteSeer, the online computer science library for example has almost 723,000 articles that have been harvested from distributed sites (such as websites and ftp archives) around the world where authors have deposited their work. This not only indicates the size of the corpus of computer science research available on open access, but it also clearly demonstrates the success of harvesting from distributed sites for creating a subject-based open access archive.

Another mechanism for creating a subject-based archive is for authors to deposit their work directly into a centralized repository of e-print archives. In the e-Print Archive, scholars make scientific findings to the community in advance of the often lengthy print production process. This model is based on the physics e-print archives arXiv.org, (at http://arxiv.org/help/general) developed in 1991 for the high-energy physics community. This is a fully automated electronic archive over a distributed server system for research papers in physics and related disciplines, nonlinear science, mathematics, computer science and quantitative biology. As on February 2006, the repository held roughly 355,953 full text e-prints and grew at a rate of 40,000 new submissions per year (Zainab and Abrizah, 2006). Its usage grew because physicists need to communicate quickly and easily. The types of materials communicated are scholarly and submissions are archived and indexed for future arbitrary retrieval. This pre-print archive model focuses on the needs of users and authors and plays down the role of the

publisher as processes are highly automated. Users can retrieve papers from the archive either through an online web interface, or by sending commands to the system via e-mail. Similarly, authors can submit their papers to the archive, either using the web interface, ftp or using e-mail. Authors can update their submissions if they choose to, and previous versions of articles remain available for users to view. Users can also register to automatically receive a listing of newly submitted papers in areas of interest to them. In this environment, authors are writing not for direct financial remuneration in the form of royalties, but to communicate information so that it would indirectly benefit their career and professional reputations. This type of publication channel soon becomes indispensable to physicists, especially for those in developing countries.

Apart from CiteSeer and arXiv.org, there are other fine examples of subject-based archives such as Cogprints for cognitive science, RePec for economics and E-LIS for library and information science. Apart from arXiv, most have been filling slowly. Cogprint (www.cogprints.soton.ac.uk), for example despite its 8-year existence still houses around 2000 articles. Subject-based centralized archives can be very useful to researchers, but are most probably more effectively created by service providers (search and retrieval services) that harvest relevant subject-focused information from all repositories and organize it to form a one-stop research center to the research community.

In her effort to determine Malaysians contribution in open access archives, Zainab (2006) submitted a search for "Malaysia" to the arXiv repository and a total of 103 hits were returned. A closer study of the records retrieved indicates 49 contributions by individual Malaysian scholars. An individual from Ampang seems to find this channel useful and has contributed a total of 15 preprints. The rest of the 49 submissions came from Malaysian universities and colleges. Only 3 hits were returned for a search the authors made on Malaysia in E-LIS. All three submissions came from articles published in the Malaysian Journal of Library and Information Science. This indicates that Malaysian scientists are

using and submitting to this archive probably to receive comments or to obtain wider access to their published work. It shows that some Malaysian authors are ready and are already contributing to foreign archives since there is none locally. However Malaysians scholars are clearly years lagging behind in open access self-archiving initiative.

DO OPEN ACCESS JOURNALS AND E-PRINTS HAVE IMPACT?

Wider accessibility of journals has helped in increasing research citations, and many open access journals have impact factors and are indexed by the Institute for Scientific Information (ISI) for its Web of Knowledge or Web of Science service. There is accumulating evidence that shows that research articles that have been self-archived in are cited more often than those that have not. This means that research has much more impact than before. The research cycle, where work is published, read, cited and then built upon by other researchers, is enhanced and accelerated when results are available on an Open Access basis.

Harnad and Brody (2004) studied articles from seven thousand journals from the ISI Web of Science database and found a increase in the research impact for open access articles in physics. Harnad and Brody also studied articles in CiteBase and found that papers which were more likely to be cited. The ISI (2004) reported a study on the impact of open access journals in which it compared impact factor and the number of citations of open access journals in the natural sciences with non open access journals. The study found that open access journals received broadly similar citation pattern to non open access journals but seems to be cited earlier.

A study of authors who published in open access journals was carried out by the Joint Information Systems Committee in the United States and found that authors contributed to open access journals for the following reasons: a) faster publication time; b) free access for all readers; c) perceived larger readership; and d) the higher chances of being cited (JISC, 2004). Hitchcock et al (2002)

used data from the CiteSeer repository and found that the peak of citation occurs higher and sooner for papers deposited in open access journals. Antelman (2004) studied ten leading journals in the disciplines of mathematics, electrical and electronic engineering, political science and philosophy as listed by the *Journal Citation Report* for 2002. He then used the ISI Web of Science to measure research impact. The results showed a significant difference in the mean citation rates of open access articles and those that are not freely available online in all four disciplines. Both scientists and social scientists prefer to access their research materials online. As such, the availability of the articles act as a "pull" factor towards open access journals contributions and a "push away" factor for print.

Harnard (1999) appropriately observed that contributing to electronic journals or publishing electronic journals is slow to catch on and wondered why "having been led to water, researchers in all the other disciplines have been taking so long to get around to drinking". This is so true for journal initiatives in Malaysia. The number of electronic journals in Malaysia is small. It is expected that Malaysian authors and publishers might "catch on" once benefits of publishing electronically on open access, the benefits of having refereed literature available to all Malaysian researchers everywhere at any time gratis, and the benefits of being led to related papers in other repositories through hyperlinks is understood. In general, publishing in open access has not "caught on" in Malaysia.

THE MALAYSIAN ELECTRONIC JOURNALS

Md. Sidin (1996) estimated the number of active Malaysian scholarly print journals to be about 214. Out of these numbers, Zainab (1997) found that 43 titles from the fields of science, technology and medicine and 11 in the arts, humanities and social sciences are covered by 23 international indexing and abstracting agencies. If the inclusion in international databases helps to increase the availability of Malaysian research activities, then the achievement of only 25% of total scholarly journals attaining such status is a poor showing.

Availability or "Visibility" of scholarly Malaysian journals in this context refers to the degree of ease with which Malaysian scholarly articles can be accessed to similar domain global academic community. As the 1990s saw an increasing acceptance and use of electronic journals to communicate research activities, the most feasible solution is to go on Open Access to make Malaysian research more available. A few journals in Malaysia are now available free of cost in electronic form. Roosfa (1999) identified six Malaysian electronic journals in 1999. This increased to 11 in 2002 (Zainab and Edzan, 2002) and 13 in 2005 (Zainab, Ang and Abrizah, 2005). At the latest count in January 2006, two additional refereed titles were found (Zainab and Abrizah, 2006) bringing the total number of electronic journals in Malaysia to 15 (Table 2). This shows that academic journal publishers seem still cautious of this medium to disseminate their research findings. The majority of the Malaysian e-journals are single journal systems, where access to journals' abstracts and full-text articles are provided through browse able table of contents. This is a tedious way of searching for relevant articles especially when the journal system contains several issues over a range of years. Very few of these journal systems provide users with subject or keyword search options or options to search for an author's names across articles in the various issues and year of publication.

Table 2: Malaysian Electronic Journals on the Net (Zainab and Abrizah, 2006*)

Journal Title	URL/Publisher/Field	Features
Akademika	http://www.penerbit.ukm.my/jademik.htm Publisher: Penerbit Universiti Kebangsaan ISSN 0126-5008 Field: Social sciences and humanities Same status in 2000 and 2004	Refereed; Full-text & free only for volumes 54 & 55, 1999 in PDF; Table of contents display for the rest of the volumes; Frequency: June & December; Bilingual; Subscription for print copies RM20.00 and US20.00. First issue: Volume , 1972; Latest issue: Volume 64, 2004
Biomedical Imaging and International Journal	http://www.biij.org/ Publisher: Department of Biomedical Imaging, University of Malaya Field Medicine	Refereed; full-text & free for Vol.1, no.1 July Sep 2005, Vol.1, no.2 Oct Dec 2005, Vol.2, no.1 Jan-Mar 2006). An open access e-journal; Subscribers will get online alerts; ISSN:18235530. Electronic version only; No searching option is given, articles obtained through browsable contents of each issue. References are linked to citation in Medline.

Current Law Journal or *CLJ-Online*	http://www.cljlaw.com Publisher: Current Law Journal Field: Law; Same status in 2000 and 2004	Host CLJ journals, cases, legislations, practice notes. Full-text for subscribers.
EJUM (Electronic Journal of University of Malaya)	http://ejum.fsktm.um.edu.my Publisher: Faculty of Computer Science and Information Technology, University of Malaya Journal host Same status in 2000 and 2004	Hosts: *Malaysian Journal of Computer Science, Malaysian Journal of Library & Information Science, Journal of Problem-based Learning*
Electronic Journal on Information Systems in Developing Countries	Host in rotation by University Malaysia Sarawak, City University of Hong Kong, Erasmus University of Rotterdam & Delft University of Technology. Current host: City University of Hong Kong, http://www.cjisdc.org; ISSN:16814835 Field: Information systems; Computer Sciences. Same status in 2000 and 2004	Refereed; Full-text (PDF) & free; First issue: Vol.1, 2000, Latest issue, volume 7, 2004 . Only Vol.1-3, 2000 was hosted by Universiti Malaysia Sarawak Single e-journal system
Journal Problem Based Learning	http://ejum.fsktm.um.edu.my Publisher: Faculty of Computer Science and Information Technology, University of Malaya Field: Education Accessed in 2004	Refereed; Full-text (PDF); Free access; English; Only one issue so far, Vol ; 2004 Only e-version is available
Jurnal Ekonomi Malaysia	http://www.penerbit.ukm.my Publisher: Faculty of Economics, Universiti Kebangsaan Malaysia; ISSN: 0127-1962 Field: Engineering Accessed in 2004	Refereed; Full-text (PDF) only for volumes 34,(2000) and volume 35 (2001); free access; Bilingual; Frequency: Annual; First issue: volume 1 (1980), latest issue: volume 36, 2002.
Jurnal Pendidikan	http://www.penerbit.ukm.my Publisher: Education Faculty, Universiti Kebangsaan Malaysia ; ISSN: 0126-6020 Field: Information Technology. Accessed: in 2004	Refereed; Full-text (PDF) only for volumes 27 (2000) and 28 (2002); free access; Frequency: annual; Earliest issue, volume 5, 977, latest issue: volume 28 (2002)
Jurnal Pengurusan	http://www.penerbit.ukm.my Publisher: Faculty of Business Management, Universiti Kebangsaan Malaysia ISSN: 0127-2713 Field: Information Technology. Accessed: in 2004	Refereed; Full-text (PDF) only for volumes 21 (2002); free access; Frequency: annual; Earliest issue, volume 1, 1982, latest issue: volume 21 (2002)
Malaysian Journal of Computer Science	http://www.fsktm.um.edu.my Publisher: Faculty of Computer Science and Information Technology, University of Malaya. Field: Computer Science and Information Technology Same status in 2000 and 2004	Refereed; Full-text & free; English; Frequency: June & December since 1996 - ; latest issue June 2004; Search options: browse volumes, author, country and affiliation index, Boolean operators; keyword in article; Indexed by INSPEC; Hosted by EJUM Subscription: RM40 or US$40 per year is imposed on print version only – the electronic version is free

Malaysian Journal of Library & Information Science	http://www.fsktm.um.edu.my Publisher: Faculty of Computer Science and Information Technology, University of Malaya. ISSN:394 6234 Field: Information and Library Science Same status in 2000 and 2004	Refereed; Full-text; Free access; Language: English; Frequency: July & December since 1996 ; latest issue July 2004; Indexed by LisaPLUS, Library Literature & INSPEC; Hosted by EJUM Subscription: RM40 or US$40 per year for print version – the electronic version is free
Malaysian Online Journal of Instructional Technology (MOJIT)	http://pppjj.usm/mojit/mojit.html Publisher: Universiti Sains Malaysia ISSN18231144 Field: Education and tecnology	Refereed, Full-text, Free access to Vol.1, no.1August 2004, Vol.1, no.2 Dec 2004, Vol.2, no.1 April 2005
Medical Journal of Malaysia	http://www.mma.org.my/info/mmj.htm Publisher: Malaysian Medical Association. Field: Medical Sciences	Refereed; Full-text only for short communications; Also provide summary for articles; Free access; Frequency: Quarterly; Latest vol.59 (1), 2004
Multimedia Cyberscape Journal	http://www.cyberscape,mmu.edu.my Publisher: Multimedia University ISSN:675 928 Field: Multimedia; Engineering; Computing and Information Technology; Human Machine Interface; Creative Multimedia; E-commerce Accessed in 2004	Refereed; First issue: vol.1, 2002; latest vol.2, 2004; Abstract and full-text (PDF); Free access; Provide search options: browse volumes and broad keywords; Only e-version is available
Sari	http://www.penerbit.ukm.my Publisher: Institute of the Malay World and Civilization, Universiti Kebangsaan Malaysia ISSN:027 2721 Field: Humanities; Malay world and civilization Accessed in 2004	Refereed; Latest issue: volume 20 (2002); Free access; has an online version (PDF) where 157 titles from all issues are listed A-Z by author's names. Subscription is available for print version.

* Zainab, A.N and Abrizah Abdullah. 2006. Scholarly communication: Making Malaysian research available through electronic jurnal publishing. Paper presented at the *Conference on Libraries for the Future: Towards World Class Academic Libraries*, 25-26 April 2006, Grand Blue Wave, Shah Alam. 21p.

WHAT CAN WE DO TO PROMOTE OPEN ACCESS?

There are various ways that can be done to promote Open Access and effectively bring about the practice of self-archiving. Research Institutions and universities should create an institutional OAI-compliant E-print archive for all their researchers. Universities may also install OAI-compliant E-print archives using free E-print software. There are numerous open source repository software for different purposes, such as preprint archives, open access e-journals, and institutional repository tools, that can be "plucked", enhanced, used and developed in collaboration with the original developers (e.g. arXiv.org and

DSpace set up by MIT). Universities need to mandate the self-archiving of all peer-reviewed research output in order to maximize its research impact for exactly the same reasons they mandate publishing. Researchers or faculty should submit their research articles to appropriate OA journals in their field. They should also self-archive their pre-prints and post-prints in the institutional archive or other OA, OAI-compliant archive. Faculty should also consider to launch an OA journal.

Where do libraries fit in this situation? University libraries should launch and open-access, OAI-compliant institutional e-print archive for both text and data and help faculty deposit their research articles in the institutional archive. Subject librarians can also give exposure by making presentations at the various faculties highlighting not only the types of OA journals available in the respective disciplines but also including information such as the referee status of the journals, and their impact factor if any. On top of this, the OA journals should be catalogued as a resource, searchable in the library's OPAC and actively linked to the actual electronic journals using the 856 Marc tag. They may also help OA journals launched at the university become known to other libraries, indexing services, potential funders, potential authors and potential readers. Librarians may consider canceling journals that cannot justify their high prices and issue public statement why. They may also design impact measurements (such as citation correlator) to take advantage of the many kind of usage data available for OA sources.

The university administrators have also role to play in promoting open access. First they have to see to it that the university has an open access, OAI-compliant archive. They can adopt policies encouraging or requiring faculty to fill in the institutional archive with their research articles and preprints. The university administrators may also adopt a policy where all theses and dissertations upon acceptance must be made openly accessible, for example through the institutional repository or one of the multinational OA archives for theses and

dissertations. Some of the archives providing OA to electronic theses and dissertations are the Networked Digital Library of Theses and Dissertations (NDLTD), Cybertheses, Digitale Dissertationen in Internet, Theses Canada and Australian Digital Theses Programme. All conferences hosted by the university will provide open access to their presentations and proceedings, even if the conference also chooses to publish them in a priced journal or book. This is compatible with charging a registration fee for the conference. All journals hosted or published by the university will be either OA or take steps to be friendlier to OA. For example UK 's Research Assessment Exercise ensures that institutional research output is OA and that the faculty use standardized, online CV's linking to OA versions of their journal articles.

Finally, publishers can also support self-archiving by explicitly allow and encourage their authors to self-archive their pre-refereeing preprints or their peer-reviewed postprints, as the American Physical Society (APS) and so many other publishers are doing, rather than, as indicated by Harnad (2003) "attempting instead to use copyright or embargo policy to prevent or retard self-archiving".

CONCLUSION

The World Wide Web appears to be able, through various model of Open Access publishing, to do more to extend the circulation of knowledge and to increase participation around that knowledge than print has been able to achieve. Editors, scholarly associations, researchers and scholars are now changing their opinion about Open Access Archives and Open Access E-journals as a channel for scientific communication and publication. Publishing in Open Access e-journals and e-print archives should be considered seriously by academics in Malaysia as recent published literature have shown that articles deposited in these repositories have begun to receive citations and have also begun to achieve impact value. It is only through electronic publishing in the form of Open Access

E-print archives or E-journals that Malaysian research writings can become available and visible to the global academic community, and increase the chances for use and exchange of ideas among scholars within similar disciplines. There are various ways that researchers and their institutions can do to promote Open Access. The future of scholarly communication will definitely be dominated by open access e-journals as a channel for communication, and there would be also an increase in open access initiatives in various focused subject areas as exemplified by arXiv, E-LIS and CiteSeer which encourage authors to self-archive their articles to the e-print repositories.

REFERENCES

Alma, S and Brown, S. 2004. Authors and open access publishing. *Learned Publishing*, 17(3): 219 - 224

Antelman, Kristin. Do open access articles have greater research impact? *College and Research Libraries,* September 2004: 373-382.

Harnard, S. 1999. *The future of scholarly skywriting.* In: I in the sky: Visions of the information future. Scammel A (ed). ASLIB

Harnad, S. 2003. Open access to peer-reviewed research through author/institution self-archiving: Maximizing research impact by maximizing online access. *Journal of Postgraduate Medicine*, 49:337 – 342.

Harnad, S. and Brody, T. 2004. Comparing the impact of open access (OA) vs non-QA articlesin the same journals, *D-Lib Magazine* 10 June 2004. Available at: http:www.dlib.org/dlib/june04/harnad/06harnad.html

Hitchcock, Steve; Bergmark, Donna, Brody, Tim, et al. Open citation linking. *D-Lib Magazine* 8 (Oct 2002). Available online at, http//www.dlib.org/dlib/october02/Hitchcock/10hitchcock.html

ISI. 2004. *The impact of open access journals: a citation study from Thomson ISI*. Available at: http://www.isinet.com/media/presentrep/acropdf/ impact-oa-journals.pdf

JISC. 2004. *JISC and publishers work together to open up access to journals.* Available at: http://www.jisc.ac.uk/index.cfm?name=news_openaccess. 0304

Md Sidin Ahmad Ishak. Penerbitan jurnal ilmiah di Malaysia. Paper presented at the *Seminar Penerbitan Jurnal Ilmiah [Seminar on Scholarly Journal Publishing],* 19 November 1996, Universiti Utara Malaysia, Sintok Malaysia.

Roosfa Hashim. 1999. *Status serta sikap ahli akademik di Malaysia terhadap e-jurnal.* MLIS dissertation, Faculty of Computer Science and Information Technology, University of Malaya, Kuala Lumpur

Willinsky, J. 2003. The nine flavours of open access scholarly publishing. *Journal of Postgraduate Medicine.* 49: 263 – 267

Zainab Awang Ngah. 2006. *Scholarly skywriting: E-print archives and e-journals, panacea or problem?* Inaugural lecture, 23 August 2006. Kuala Lumpur: University of Malaya

Zainab, A.N and Abrizah Abdullah. 2006. Scholarly communication: Making Malaysian research available through electronic journal publishing. Paper presented at the *Conference on Libraries for the Future: Towards World Class Academic Libraries*, 25-26 April 2006, Grand Blue Wave, Shah Alam. 21p

Zainab, A.N. 1997. The coverage of Malaysian scholarly journals by international indexing and abstracting services: an assessment of their visibility and common characteristics. *Malaysian Journal of Library and Information Science*, 2(1): 13-30

Zainab, A.N.; Ang Tan Fong and Abrizah Abdullah. 2005. E-journal publishing in Malaysia: from single journal system to publishing through a host. *Information Development*, 21(1): 53-65.

Zainab, A.N. and N.N. Edzan. 2002. Malaysian scholarly e-journals: focus on EJUM, a Journal Management System, *Malaysian Journal of Library & Information Science,* 5 (2):69-83.