

CAN A PORTABLE, OPEN SOURCE JOURNAL MANAGEMENT/PUBLISHING SYSTEM IMPROVE THE SCHOLARLY AND PUBLIC QUALITY OF RESEARCH? A WORKSHOP

JOHN WILLINSKY¹

¹Department of Language and Literacy Education
University of British Columbia
Vancouver, BC, Canada V6T 1Z4
john.willinsky@ubc.ca

As part of the University of British Columbia's federally funded research initiative to improve the scholarly and public quality of academic publishing on a global basis, the Public Knowledge Project has released Open Journal Systems (OJS). This is open source software that can be freely downloaded. The intent is to help journals and scholarly societies seriously consider publishing in an open access or free-to-read basis, which has been shown to increase readership dramatically. This online journal management and publishing system enables editors to manage, publish and index peer-reviewed journals over the Internet an open access or free-to-read basis. The workshop, and this paper, will enable potential users to get inside the system to see how such management systems operate, and to judge whether they have the potential to improve the scholarly and public quality of scholarly publishing, as well as reduce costs sufficiently to make open access a viable option.

Keywords: Scholarly publishing; Open access; Open source software; journal management systems.

INTRODUCTION

Through the Public Knowledge Project, we have been working for a number of years on developing systems that will support greater access to scholarly research. The research has entailed exploring a wide range of economic, legal, social and political issues related to scholarly publishing, as well as building a number of websites devoted to testing how greater access can be supported for a wider readership of research, including practicing professionals (e.g., teachers) and the public (in cooperation with the local newspaper). Our most recent venture has been focused directly on the scholarly publishing process, with an eye to how access can be improved in the very design of the publishing system. To that end, we have developed open source software designed to greatly reduce the cost of operating a peer reviewed journal or conference (Table 1). While our Open Conference Systems is being used by this conference, I would hope to use this session to present the thinking behind our new Open Journal Systems. The initial reviews from potential and existing users of OJS have been very positive (http://pkp.ubc.ca/ojs/ojs_comments.html).

OPEN JOURNAL SYSTEMS

Open Journal Systems is a journal management and publishing system that assists with every stage of the publishing process for refereed journals, from managing submission reviews through to online publication and indexing (Figure 1). Through online management systems, finely grained indexing for accurate searches, and by providing a supportive context of relevant resources for each article, OJS seeks to improve both the scholarly and public quality of refereed research (Table 2)

TABLE 1 – SAVINGS WITH AUTOMATED E-JOURNAL MANAGEMENT SYSTEMS, COMPARED TO TRADITIONAL PRINT JOURNALS

Stage	Agent	Automated and Assisted Journal Management	Savings
Submission	Author	a) Online upload in variety of formats, including “camera-ready” tables and figures, as well as room for appendices, data, instruments, etc. b) Templates to assist authors indexing their papers by asking them to provide appropriate metadata	Clerical time, copying, postage, courier, stationery, editor time
Submission	Editor	a) Author notified of receipt of submission b) Queuing for review	
Peer Review	Editor	a) Maintain list of reviewers, interests, record b) Contact selected reviewers with abstracts d) Provide access to paper, and reminders e) Tracking review progress (viewable by author)	
Peer Review	Reviewer	Management of review comments and marked copy	
Editor Review	Editor	Author notification, with reviews (complete or excerpts) and judgment	
Revisions	Editor	a) Ready back and forth with manuscript b) Re-circulate paper to reviewers, if needed	
Editing	Copyeditor Proofreader	a) Editor and author ready access to manuscript, re queries b) Preparation of manuscript for publishing	
Layout	Editor	Revert to commercial software, such as MS Word, to convert word processed document to HTML. Including text, footnotes, references, appendices	Printing services, time
Publishing	Editor	a) Ability to include and order articles b) Volume and number assignment	
Distribution	Editor	Automated, email notification of contents for readers	Postage, packaging, time
Indexing	Author / Reader	a) Automated harvesting of each article’s author-fed metadata by Open Archives Initiative engine creating a distributed global index. b) Citation indexes and tracking with hyperlinking of citations to sources and of article to materials in related databases, using metadata. ^a	Indexing services (purchased separately by library), time
Interchange	Readers Authors	Posting of comments (with editor as moderator) for continuing open peer review, as well as online forum for continuing exchange on range of themes	Not otherwise available
Archiving	Host library and/or PKP	Server maintenance and backup, software upgrading/migration	Cataloguing storage

^a In development, see Public Knowledge Project [1], NEC’s ResearchIndex [2], Citebase [3], and BibP [4].

FIGURE 1 – OJS EDITORIAL FLOW CHART FOR AUTHORS, EDITORS AND OTHERS

FIGURE 2 – INDEXING MODEL FOR ACCESSING RELATED RESOURCES

An example of how research studies in the social sciences might be linked to related domains of knowledge by utilizing each study's metadata indexing terms to accurately ascertain the scope and range of related materials. An initial working version of it is represented in Figure 2. (Adopted from[5]).

OJS is being made freely available to journals worldwide for the express purpose of making open access publishing a viable option for more journals, as open access publishing can increase a journal's readership as well as its contribution to the public good on a global scale. It can be downloaded from the PKP website and installed on a local (Windows and Linux) web-server. It requires little or no technical expertise on the part of the journal editors, authors, reviewers or management staff. Editors can configure the system's various options to match their current policies and practices, as well as post those policies for peer reviewing, journal sections, publishing patterns, and other features using the system's templates. PKP staff are ready to help editors, as well as learn from their experiences in improving this management system.

OJS enables authors can upload their papers, as well as data sets, research instruments, and source documents through the journal's Submissions section. On uploading their submission, they are helped to index their papers and data to ensure the widest possible readership of their work They can submit their papers, figures, and appendices in a variety of file formats, including Microsoft Word, WordPerfect, or RTF (Rich Text Format). And they can track the progress of their paper through the editorial process.

The system also supports online management for each stage of publishing. After setting the options for the journal, the editors are able to manage and track the journal sections and structure, editorial and review process, and the ordering and publishing of each issue. The journal management system helps editors guide a submission through the normal sequence of journal publishing, while providing a complete record of all transactions, as well as prompts and help boxes to guide editors. Each step includes notification and acknowledgement emails that can be edited and sent directly from OJS.

OJS manages to offers comprehensive indexing of published Articles critical to the quality of the research environment. With the assistance of authors, as well as automated systems, each article is provided with a metadata record of bibliographic information that also includes the article's discipline, subject, coverage, and type. This indexing is adheres to the Open Archives Initiative protocol for metadata harvesting, and thus forms part of a globally distributed system for scholarly resources that can

be collectively searched through the PKP Metadata Harvester for all PKP sites, OAIster for all OAI registered sites.

A Research Support Tool (RST) accompanies each article in the journal. RSTs are tailored to specific disciplinary areas and provide links from the article to related and relevant resources both inside and outside of the immediate realm of research. In this way, the RST provides new and experienced readers of research with a wider context for interpreting and situating the work they are consulting (Figure 2). Each study that comes before a reader is accompanied by a set of clearly labeled hyperlinks that identify the types of context clues that are available for further consultation. The reader also needs to see the very status of the study in question, a status that scholars try to ensure through the peer-review process. Readers need to know where the study stands and how its ideas and concepts, findings and conclusions relate to other works. They need to see that no study is an island of itself. Each is a part of the main, and must be so interpreted.

The actual device that provides a bridge to this larger context for a given study is, in the version we will be testing, the size of a traditional paper bookmark. It sits in the margin to the right of each published study (Figure 3). It consists of a list of 10-15 links, depending on the subject area of the research. We have tested it with various research studies, and will in the coming year begin to test what it contributes to the reading experiences of common and specialized readers. Our working hypothesis is that a set of explicitly labeled context clues can be provided for each study that will extend the common reader's ability to find meaning and value in reading scholarly research.

At the top of the Research Support Tool, the study's status is identified, indicated whether, for example, it is a peer-reviewed article or an invited conference paper. Each of the links that follows below has been chosen to provide another perspective, a further context, for reading the study, with an explanation available for each of them. Links such as Metadata make the study's indexing information, or metadata, readily available to readers. This addresses another concern identified in the literacy research, namely that inexperienced readers have difficulties identifying the significant concepts – separating core ideas from the noise – around which to associate related points and arguments. Links such as Define Terms, Other Works (by the author), Related Studies, Related Theory, e-Journals, and Online Forums, lead to open access databases elsewhere. There is even a Pay-Per-View link for those who would seek materials beyond the still limited world of open access resources.

To ensure that only relevant contextual materials are offered to the reader we have employed a relatively simple trick. When a reader clicks on the link, Related Studies, up pops a window by the reader can search one or more freely available full-text or abstract databases using the first two terms which the author submitted to index the subject of their article. With a click on "search" the author's terms are fed into the search engine of research databases selected. This produces a list of related studies which the reader can use as points of comparison or studies to pursue in themselves. A similar process takes place with the other links on the Research Support Tool, allowing the reader to drop in on a forum discussing the topic or read into the theory behind the study. The reader can learn more about the available databases that provide a context for the study, as well as change the search terms to customize the search within the databases. Readers are also led to see that the context for reading research is not always other research, especially in field like education. The Research Support Tool uses similar search principles to scour the databases listed under Government Policy and Media Reports. The Instructional link checks for teaching materials on the subject.

FIGURE 3 -- PORTABLE INDEXING TOOL

This tool, shown here in a design for the Public Knowledge Project systems for conference papers, utilizes each document's metadata indexing terms to search external databases.

TABLE 2 -- THE DUBLIN CORE METADATA INITIATIVE

The metadata items developed by the Dublin Core Metadata Initiative (<http://www.dublincore.org/>) are employed by the Open Archives Initiative (<http://openarchives.org>) which enable research databases to be “harvested” and collectively searched, with the metadata or index terms further developed by the Public Knowledge Project, in this case, for its Open Journal Systems software.

Dublin Core	Open Journal Systems Use
1. Title	Title of document
2. Creator	Author's name, affiliation, email
2. Creator	Biographical statement
3. Subject	Academic discipline
3. Subject	Topics or keywords
3. Subject	Disciplinary classification system, if available.
4. Description	Abstract of paper
5. Publisher	Publisher or sponsoring agency [name, city, country]
6. Contributor	Funding or contributing agencies
7. Date	When paper was submitted to journal
8. Type	Peer-reviewed, non-refereed, invited; article, book review, etc.
8. Type	Research method or approach
9. Format	HTML, PDF, PS
10. Identifier	Universal Resource Indicator
11. Source	Journal title, volume (issue)
12. Language	Language of article
13. Relation	Title and identifier for related supplementary files (e.g., research data, instruments, etc.)
14. Coverage	Geographical and historical coverage
14. Coverage	Research sample (by age, gender, ethnicity, class)
15. Rights	Open access with authors retaining copyright and granting first publication rights to journal.

Open Journal Systems seeks to demonstrate how software systems can reduce the costs of operating a journal online to a scale that can readily be supported within existing infrastructure systems such as those run by research libraries or universities. This will enable journals to offer open access without author fees and provide opportunities for institutions in developing nations (with tests of OJS being prepared in Kenya and Rwanda). As an open source system, if it proves to be a useful publishing tool, it will fall to the larger community to improve and sustain it, while the current focus is on ensuring

that it gets a wide enough hearing to pose an alternative for editors and others to the commercial publishing systems, and to testing its claim that it can improve the scholarly and public quality of research.

THE WORKSHOP

The workshop will reivew the basic arguments for open access publishing. It will introduce the economics of schoalrly associations, the itent of the copyright law, the professional and career impact, the promise for developing countries, the cause of democracy and human rights, the contribution to policy analysis, and the benefits of public access, as well as arguments about the quality of knowledge. These arguments have been developed over the years and the published papers that develop them are available at the Public Knowledge Project website under Publications (<http://pkp.ubc.ca>).

The workshop will be largely devoted to demonstrating the Open Journal Systems, as an example of what automated journal management sysetms can do to reduce publishing costs, while increasing the scholalry and public quality of the research. The workshop will take the audience through the setting up of the journal, which is accomplished by completing a series of templates, carefully set out to in structured steps. It will review the automated features of the email notifications and the author's self-indexing of their work. It will trace out how editors handle a submission, from peer review to proof reading (Figure 1). And it will demonstrate how the articles published.

By way of demonstrating how OJS can improve the scholarly and public quality of research, the workshop will take the audience through the Research Support Tool, in concept (Figure 2) and in practice (Figure 3). It will review the indexing system (Table 2).

Whether in prepartion for the workshop or without attending the workshop, one can review the publishing system by following the following four steps:

1. To learn more about OJS and UBC's Public Knowledge Project, go to <http://pkp.ubc.ca/ojs>.
2. To take OJS see what online management looks like, explore the Demo Journal that has been made available ont he PKP website.
3. To help potential users to take OJS for a test-drive, we have set up a further demo journal at <http://research2.csci.educ.ubc.ca/pkp/ojs/demo5> . Here users can submit articles, act as editors, reviewers or authors, and otherwise try out the features of the system.
 - a) Login as an editor: The username/password is inglis/inglis
 - b) Login as an author (mitchell/mitchell).
 - c) Login in as a reviewer (kang/kang).
 - d) Login in as a copyeditor (kang/kang).
 - e) Submit an article as an author and see it through the publishing process as an editor.
4. To download OJS have the person responsible for the webserver that will host your version of OJS go to <http://pkp.ubc.ca/ojs>.

REFERENCES

- 1 WILLINSKY, John & Larry WOLFSON. The indexing of scholarly journals: A tipping point for publishing reform? *Journal of Electronic Publishing*, 7(2), 2001. Retrieved April 30, 2002, from <http://www.press.umich.edu/jep/>.
- 2 LAWRENCE, Steve, C. Lee GILES, and Kurt BOLLACKER. Digital libraries and autonomonus citation indexing," *IEEE Computer* 32, 1999, 67-71.
- 3 HARNAD, S. For whom the gate tolls? Free the on-line-only refereed journal literature *American Scientist Forum*, 2002, <http://amsci-forum.amsci.org/archives/september98-forum.html>.
- 4 CAMERON, Robert D. and Serban G. TATU. *Bibliographic Protocol level 1: Link resolution and metapage retrieval*. Internet Draft, 2000, Available at <http://www.cs.sfu.ca/~cameron/bibp-revised.html>.
- 5 WILLINSKY, John. Proposing a Knowledge Exchange Model for Scholarly Publishing. *Current Issues in Education*, 3(6), 2000. Retrieved April 30, 2002, from <http://cie.ed.asu.edu/volume3/number6/>.