

Transforming Students into Scholars: Creating MIL Competencies through Communicating Research

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The expansion of scholarly communication through open access resources is essential for extending scholarly and scientific research to developing countries, as well as for facilitating knowledge sharing worldwide. A key role for universities will be to insure that students develop the media and information literacy competencies essential for shaping and leading the new face of global scholarly communications. This paper proposes that one means of developing these competencies will be for university students to become actively engaged in the scholarly communication process by producing information and distributing their research and that of others through a digital institutional repository

If transforming students to scholars is the goal, then how can this be achieved? The desired outcome would be students as producers and creators of knowledge. But knowledge integration and creation as the culminating and constructivist stage in the process has not always been a focus of information literacy instruction as librarians struggled to get students to master the basic steps of information seeking and finding.

Given the myriad definitions of information literacy and the other literacies such as media literacy and digital literacy, there is a worldwide recognition these interrelated literacies are necessary for functioning in the 21st century and must be brought together into a holistic concept. Ongoing discussions and expert working groups sponsored by UNESCO, IFLA, and other involved international groups have resulted in more refined and expansive definitions. The *Alexandria Proclamation on Information Literacy and Lifelong Learning* stated that “Information literacy empowers people from all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals.” (UNESCO/National Forum on Information Literacy/IFLA, 2006). *Towards Information Literacy Indicators* provided the conceptual framework for developing the indicators, along with a valuable review of definitions and standards (Catts and Lau, 2008). The resulting document from the expert meeting in Bangkok, *Towards Media and Information Literacy Indicators*, proposed a set of three primary components for media and information literacy: Access, Evaluation/Understanding, and Use (Moeller, Joseph, Lau, and Carbo, 2011).

Up to now, there has been more research on the first two components of access and evaluation, but rather little on the last phase of the research process – the use, production and creation of knowledge. In recent years, however, the growth of the open access movement and the creation of institutional repositories for scholarly and creative works have put a spotlight on the need for competent scholars, knowledge workers and citizens who have the intellectual and technological tools, as well as the social and ethical awareness, and who will be

able to not only create new knowledge but also to create the context for disseminating this knowledge freely to a global audience. A focus on MIL component 3 (Tier 2) – using information and more specifically, creating information/knowledge - can help fulfill this need. This paper proposes that exploring MIL competencies in relation to undergraduate students engaged in institutional repositories (IR's) for research and scholarly communication can be a fruitful avenue for investigation.

Undergraduate Student Participation in Institutional Repositories

First, we can look at how undergraduate students are being engaged in contributing scholarly productivity to IR's. Undergraduate research is becoming an important priority in higher education, but just as with information literacy and media literacy, there are a variety of definitions of undergraduate research which vary according to a number of variables, most notably from institution to institution and from discipline to discipline. The Council on Undergraduate Research defines it as “an inquiry or investigation conducted by an undergraduate student that makes an original intellectual or creative contribution to the discipline” (Beckman and Hensel, 2009).

The most prevalent example of student involvement in IR's is the inclusion of student theses and dissertations as evidence of their capstone scholarly achievements. This is the traditional culmination of the research process, but now the theses and dissertations are digital and thus more discoverable. While many IR's began with a focus on faculty work, a growing number of them now highlight student work as well. In addition to being content providers, students (often as library employees) contribute their technological skills by scanning and uploading documents, checking on copyright permissions, and other tasks involved in acquiring, organizing, presenting, and preserving content. At the professional level, there are initiatives by some graduate Library and Information Science programs to develop a digital curation curriculum to prepare students to be practitioners in the cultural heritage informatics realm. One example is at Simmons College in Boston, where a pilot project is being developed in conjunction with the Department of Information Technology and Media at Mid Sweden University in Härnösand, Sweden, and University College, London (Harvey, 2012)

Certainly, students will have developed and exercised information literacy skills in order to produce their theses and dissertations which are added to the IR's and will have used ICT skills to organize and provide content for the IR's. However, for the purposes of this paper, I want to focus on students' active involvement in undergraduate research journals hosted in institutional repositories and the relationship to the development of media and information literacy competencies.

Undergraduate Student Research Journals

There are an ever-increasing number of student research journals of varying types and purposes. Many are peer-reviewed and have editorial boards. The publishing process may be under faculty or student direction. They may focus on undergraduate or graduate student content or not be limited, and may include faculty content. They may accept work from all subject areas or be disciplined-based. The content may be derived from one institution, from a

consortium or collection of institutions, or from an external and even global audience. The platform may be open source or proprietary. The bepress Digital Commons platform lists 94 student journals, of which many are specifically identified in the title as having an undergraduate focus. These may be general, such as *The Journal of Purdue Undergraduate Research* from Purdue University, or specific, such as *Note Bene: Canadian Undergraduate Journal of Musicology* from the University of Western Ontario.

What are some of the benefits for students of this involvement in undergraduate research journals? While this is a new area of research, some positive outcomes from these active learning experiences are being reported. Illinois Wesleyan University has several student undergraduate research journals and the Scholarly Communications Librarian, in collaboration with two Economics faculty members, has reported on the development of critical thinking, leadership skills, and an improved understanding of the research writing and review process. The student peer reviewers use a set of article evaluation criteria that parallel the information literacy competencies used to teach students the research process. The peer review criteria include such statements as: "Describes the research problem clearly and persuasively; provides adequate supporting arguments, evidence, examples, and details; correctly acknowledges and documents sources." (Davis-Kahl, January 2012).

The *Colonial Academic Alliance Undergraduate Research Journal*, sponsored by Georgia State University, is a consortial effort among twelve universities to promote and celebrate undergraduate research. When asked about the value of publishing in this peer-reviewed journal, students reported that the exposure beyond their own university was valuable in opening doors in terms of graduate school and future jobs, since there were so few opportunities for undergraduate students to present their work and to be recognized for something more significant than a class project (Burtle, 2011). Because this journal is hosted on the Digital Commons platform, students get regular reports on downloads of their content, providing both frequency and geographic source of the requests.

This year's Council on Undergraduate Research Conference (June 23-26, 2012) offers two presentations on undergraduate research journals. One, "Papers and Publications: Opportunities and Issues in Electronic Undergraduate Research Journal Publishing", from North Georgia College and State University, will focus on the peer review process. The other, "Rethinking Undergraduate Publication: Pacific Northwest Journal of Undergraduate Research and Creative Activities", from Pacific University, will explore the role these journals can play in promoting student research beyond the local or regional context.

Because of this active involvement as producers of knowledge, students are now on the other side of the research process and have the opportunity for deep understanding of the issues that are involved in the research process and for developing the skills, knowledge, and attitudes that comprise the media and information literacy competencies. Students learn the value of evaluation skills for sorting out the mass of digital information through acting as peer reviewers and having the responsibility for selecting what a worldwide audience will read. They gain an in-depth understanding of the many dimensions of intellectual property issues, such as

plagiarism and proper use of sources, self-archiving and authors' rights and copyright. One author has proposed that these intellectual property issues be brought together "in a single coherent philosophy of information society rights and ownership [as] one of the mainstays of the information literacy syllabus" (Joint, 2006). Students also experience first-hand the value of collaboration among scholars and they can see the possibilities for expanded and ethical global sharing through open access initiatives.

MIL Competencies and Student Research Journals

All of these outcomes will contribute to the transformation of students to scholars and the evolution of new modes of scholarly communication. A proposed framework for the competencies needed to function successfully in this new scholarly communications realm will be based on the core competencies presented in *Towards Media and Information Literacy Indicators*, the background document from the UNESCO-sponsored expert meeting in Bangkok (Moeller, Joseph, Lau, & Carbo, 2010). These core skills components are: Component 1: Access/Retrieve Media and Information; Component 2: Evaluate/Understand Media and Information; and Component 3: Use/Create/Communicate Media and Information.

These variables/indicators are intended to measure individual competencies for librarians, teachers, and students (Tier 2). The framework for the higher level competencies at the culminating stage of the research process will be Component 3 (creating & communication), but elements of Component 2 (evaluating), will be relevant, especially as they are reflected in the peer review process

I propose designing a study to explore this framework by applying the indicators for MIL Components 2 and 3 to undergraduate students who have participated in student research journals hosted in institutional repositories. The initial scope will be limited to institutions in North American, the United Kingdom, and Australia whose IR's are hosted on the Digital Commons platform. Based on this preliminary work, the competencies can be refined and expanded through a more detailed rubric to better assess attainment of learning outcomes.

A further plan is to foster intercultural dialogue through global participation in student undergraduate research journals. Discipline-based journals that are already established can encourage contributions from students around the world. In addition, an initiative could be established to partner universities which have existing student research journals with universities without this resource, so that their students can experience the benefits as well. The launch of the first international University Network on Media and Information Literacy and Intercultural Dialogue through UNESCO/UNAOC-MILID could offer possibilities for future sponsorships of such collaborations.

Challenges for global expansion include questions such as: What digital publishing and IR platforms are available and sustainable? Will cloud computing be able to foster this collaboration and sharing, especially for developing countries (Frittelli, 2012)? How will language barriers be overcome? What national and/or political concerns exist? What resistance will there be to open access and non-traditional forms of publishing? (For example,

see the survey of African journal editors' awareness and understanding of the Open Access movement reported by Ouya, 2006). What sources are available for support and financing? How can the MIL competencies be adapted for local contexts but retain a common core to allow for more global assessment?

A brief review of some of the significant international documents of the last decade reinforces the strength behind the movement for global sharing of information and research and the necessity of developing the range of MIL skills, knowledge and attitudes to make this possible. The *Budapest Declaration on Open Access* (2002) states that the "the world-wide electronic distribution of the peer-reviewed journal literature and completely free and unrestricted access to it by all scientists, scholars, teachers, students, and other curious minds" is a public good which will "lay the foundation for uniting humanity in a common intellectual conversation." The *Alexandria Proclamation* (2005) provided a universal definition for information literacy which can be adapted to multiple contexts. The *Moscow Declaration on Digital Information Preservation* (2011) proposes that IFLA "encourage the inclusion of components pertaining to the preservation of digital information in information literacy programmes and curricula". The *Media and Information Literacy Curriculum for Teachers* (UNESCO, 2011) is a powerful resource for incorporating MIL into teacher training.

The *Fez Declaration on Media and Information Literacy* (2011) invites all stakeholders to "integrate MIL in educational curricula...to endow both teachers and learners with MIL competencies" and to include user-generated content, intercultural dialogue, and embedded media and information ethics. The *IFLA Media and IL Recommendations* (2011) outlines seven recommendations for governments and organizations, including that they "commission research on the state of Media and Information Literacy and produce reports, using the Media and Information Literacy indicators as a base, so that experts, educators, and practitioners are able to design effective initiatives." And it is expected that the *Moscow International Conference on Media and Information Literacy for Knowledge Societies* will build on these foundations to advance MIL research and best practices.

Conclusion

What can students gain from participation in creating and producing knowledge through undergraduate research journals in IR's? Can this be incorporated into a conscious curriculum that will lead students successfully through the research process? Can this learning experience be made more explicit through measurable learning outcomes? The transformation from students to scholars (and informed citizens) comes as they learn about the real meaning and power of scholarly communication. They become empowered as they help to shape the new vision of what scholarly communication can mean for world development, world progress, world peace and understanding.

They learn about open access, which allows for sharing of knowledge and making resources available worldwide. They learn about digital curation and preservation of knowledge and the products of research and creative activity. They learn about the responsible and ethical use of knowledge and information as they select the best work for their audiences through peer

review. They learn about intellectual property rights through insuring proper citation of sources and respect for copyright and engagement in new models such as Creative Commons. ICT skills, digital literacy, media literacy and information literacy are brought together in the research process and product.

Institutional repositories have arrived at a stage of development where they can be used not only to promote the dissemination and preservation of scholarly and creative work, but also as a powerful vehicle for developing and refining MIL competencies in undergraduate as well as graduate students, and to train these future researchers and knowledge workers and citizens to be able to deal both technologically and intellectually with the new world of scholarly communications. Research on MIL competencies and institutional repositories can contribute to the development of curricula to transform students into scholars and skillful users and creators of information. Active engagement by students in knowledge creation and dissemination, such as production of student research journals, can be expanded to an international scale to promote intercultural dialogue, discovery, and understanding.

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