Issue No. 14
October 2006

Open Educational Resources:
Toward a New Educational Paradigm

Lisa Petrides, Ph.D. and Cynthia Jimes, Ph.D.

The purpose of open educational resources (OER) is to provide centralized access to materials and support the conditions under which new OER can be created globally and across disciplines. This article highlights the challenges to realizing these possibilities, discusses models that are emerging to address them, and calls for future research into OER use and reuse as a necessary next step in sustaining OER.

The Promise and Potential of OER

Open educational resources (OER) have gained increased attention for their potential to obviate demographic, economic, and geographic educational boundaries—in short, for their ability to serve as an equitable and accessible alternative to the rising costs and increased commercialization and privatization of education. Propelled by early initiatives such as the Massachusetts Institute of Technology's (MIT) open courseware (OCW) collection and by advocacy for other institutions and organizations to follow suit, the Internet now hosts numerous collections and repositories, all offering free, open educational resources for non-commercial purposes.

For educators and students, the proliferation of OER collections and repositories has meant centralized access to materials and the possibility of collaborating to create new OER globally and across multiple disciplines, as well as to build and improve upon existing OER materials. The emergence of OER has also begun to open up avenues for educators and students to select and augment learning resources that meet their unique teaching and learning needs. But the question remains as to how much of this new paradigm is being realized.

Evidence of a Paradigm Shift

In a survey of community college instructors, (Petrides et al., 2006b, forthcoming) 92 percent of the respondents reported that they had searched for course-related materials on the Internet. Reasons cited included their desire to integrate OER materials into their courses, to improve their teaching methods and knowledge, and to connect with colleagues who had similar teaching interests. Likewise, MIT's recent evaluation report of its OCW collection revealed that educators were accessing OER to support their course planning and preparation and to enhance their personal knowledge (Massachusetts Institute of Technology, 2006). Ninety-six percent of these educators indicated that MIT's OCW collection has or will help to improve their courses. Students and self-learners, representing the largest number of OCW users, accessed the collection for various reasons, including planning future studies, complementing their existing courses, or improving their personal knowledge.

On-Going Challenges

Additional research has indicated that while educators and learners are accessing and using OER materials, they are less likely to take part in other behaviors including sharing their own content, reusing other's content, and creating content collaboratively. A recent survey of online instructors found that while 67 percent of respondents were willing to share their course materials with others over the Internet, a much smaller proportion (25 percent) of instructors were actually making their course materials available (Petrides et al., 2006b). Other studies of OER use behaviors have revealed that content is more often created and augmented by individuals than by collaborative groups of users (Petrides et al., 2006a), and that users are primarily reusing their own materials, and are thus apprehensive about augmenting and reusing content created by others (Collis & Strijker, 2003; Harley et al., 2006).

Contextualization

Several scholars have explained user wariness toward augmentation and reuse of other's content as stemming from contextualization issues, noting that highly de-contextualized OER are reusable in the greatest number of learning situations, but they are also the most expensive and difficult to reuse, localize, and personalize. This is because such resources, by nature of their high level of granularity, are devoid of the context that may be needed to make them comprehensible on their own (Wiley, 1999; Calverley & Shephard, 2003). For example, a visual representation of a particular social science theory created in English with accompanying labels and text may be reusable for instructors in English classrooms, but may not be for those who instruct, e.g., within purely Russian-language classrooms. Removing the contextual labels and accompanying text allows the visual to be reused by multiple instructors who wish to add foreign language labels and context; however, it may also render the visual representation incomprehensible.

Hierarchy

Perhaps a more challenging barrier cited within the literature, however, stems from the proprietary, hierarchical nature of educational content. That is, given the educational context, wherein individual proprietary knowledge is incorporated into classroom instruction (Collis & Strijker, 2004), and where the roles of professors, teachers, administrators, and students are distinct and embedded, users may lack the confidence, capacity, or willingness to contribute changes to OER. In short, such an environment, in serving as the backdrop to much OER creation, brings with it assumptions and structures that hinder OER sharing, reuse, and collaboration across roles, disciplines, and contexts. In response to this, Richmond (2006) points to "content anarchy" as a solution, wherein OER portals and collections facilitate the removal of hierarchical roles and structures to inspire information sharing, reuse, and augmentation.

Community

Stemming from the success of open source software, communities are deemed as central to OER sustainability—as they encourage increased responsibility and commitment by members to evaluate, augment, improve upon and republish materials (Harley et al., 2006; Stephenson, 2006). In short, community can be said to play an important role in the future of OER, for it is by way of interactive, interested users that new users are attracted, and that the necessary critical mass of content is created and continuously improved upon. Currently, however, there is limited knowledge of how OER communities function, and more importantly, how they can best be supported.

Emerging Models

Recognizing the challenges to use and re-use, several OER collections and repositories have emerged with the aim of expanding access to and active participation in the development of educational resources for teachers, students, and self-learners alike. For example, Connexions (CNX) operates as both a repository and Web-publishing tool where users can search, view, develop and publish educational content. In allowing users to establish roles (e.g., author, editor, and publisher roles) and form communities as they create content, CNX facilitates collaboration and group authorship and potentially the continuous addition of new or augmented content to the existing body of OER.

As we continue to understand and build the nascent arena of OER, other models will certainly emerge. Richmond (2006) brings forth a few such models—ranging from "educational mashup" sites, which though common agreement and interfacing allow content to flow from place to place so that users can easily pull and integrate content across multiple collections, to "meta-sites," which serve as a single point of entry across multiple collections and which allow educators and learners to impact educational resources with their own vocabulary, content, and metadata experience.

Conclusions

Through the coalescence of technology, organizational capital, goodwill, and individual drive, the burgeoning open educational content movement has the potential to bring about a paradigm shift by way of expanding access to and active participation in the development of educational resources for teachers, students, and self-learners across the globe and in hard-to-reach locations. However, realizing this shift necessitates an understanding of how we can move beyond existing challenges—for while new OER models have surfaced, more research and discussion must be enacted to address use and reuse sustainability. That is, while there is strong evidence of OER use and an interest in sharing content, there is still limited understanding of how we move beyond the encumbrances surrounding reuse and collaborative content creation. Such an understanding is necessary in order to create the critical mass of content that is needed to support the vision of equitable education, and perhaps more importantly, to inspire a culture of continuous improvement in OER so that we can in turn truly move toward improved teaching and learning.

References

Calverley, G. and Shephard, K (2003). "Assisting the Uptake of On-line Resources: Why Good Learning Resources Are Not Enough." *Computers & Education*, 41, pp. 205-224.

Collis, B. and Strijker, A. (2003). "Re-usable Learning Objects in Context." *International Journal on E-Learning*, 2, 4, pp. 5-12.

Collis, B. and Strijker, A. (2004). "Technology and Human Issues in Reusing Learning Objects." *Journal of Interactive Media in Education*, 4.

Harley, D., Henke, J., Lawrence, S., Miller, I., Perciali, I., and Nasatir, D. (2006). Use and Users of Digital Resources: A Focus on Undergraduate Education in the Humanities and Social Sciences. Available at: http://cshe.berkeley.edu/research/digitalresourcestudy/ report/digitalresourcestudy_final_report_text.pdf (last accessed May 31, 2006).

Massachusetts Institute of Technology (2006). 2005 Program Evaluation Findings Report. Available at http://ocw.mit.edu/NR/rdonlyres/FA49E066-B838-4985-B548-F85C40B538B8/0/05_Prog_Eval_Report_Final.pdf (last accessed Sept. 19, 2006).

Metros, S.E. and Bennett, K. (2002). "Learning Objects in Higher Education." *ECAR Research Bulletin*, Boulder, CO, 2002 (19). Available at http://www.educause.edu (last accessed Sept. 19, 2006).

Petrides, L., Karaglani, A., Mindnich, J., and Jimes, C. (2006a). "Open Educational Resources: Inquiring into Sustained Use, Re-use, and the Role of Community." Working paper, Institute for the Study of Knowledge Management in Education, Half Moon Bay, CA.

Petrides, L., Nguyen, L., Karaglani, A., and Jimes, C. (2006b). "Developmental Education and Online Technologies." Working paper, Institute for the Study of Knowledge Management in Education, Half Moon Bay, CA.

Richmond, T. (2006). "OER in 2010 – Wither Portals?" Online wiki article. Available at http://www.nostatic.com/wiki/index.php/Main_Page (last modified Sept. 15, 2006; last accessed Sept. 21, 2006). *Innovate Journal of Online Education*, October/November, 3, 1.

Stephensen, R. (2006). "Open Source/Open Course Learning: Lessons for Educators from free and Open Source Software." Available at http://www.innovateonline. info/index.php?view=article&id=345 (last accessed Oct. 5, 2006).

Wiley, D. A. (1999). "Learning Objects and the New CAI: So What Do I Do With Learning Object?". Available at http://wiley.ed.usu.edu/docs/instruct-arch.pdf (last accessed Sept. 21, 2006).