

What Are Some Considerations for Implementation of Open Educational Resources in
Developing Countries?

Literature Review

Hyunju Kim

The Ohio State University

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Abstract

Since its birth, the Open Educational Resources (OER) movement has created the hope of providing quality education in developing countries. To actualize this hope, there are some aspects for educators to consider in designing, utilizing, distributing, and evaluating OERs. However, difficulties have been found in evaluating the impact of OERs due to lack of information on the OER users in developing countries. This paper proposes a study in the types of OER users in developing countries, their preferable OER format, the purpose of using OERs, and the impact of OERs on their education. Without this user study, the OER movement might result in intensifying the gap between the educated and uneducated and the advantaged and the disadvantaged.

keywords: Open Educational Resources (OER), developing countries, user study

What Are Some Considerations for Implementation of Open Educational Resources in Developing Countries?

Introduction

The Open Educational Resources (OERs) movement originated from Open and Distance Learning (ODL). OERs include everything related to teaching and learning such as learning content, teaching materials, educational software tools, and even open licenses. The Organization for Economic Co-operation and Development (OECD) defines OER as "digitized materials offered freely and openly for educators, students, and self-learners to use and reuse for teaching, learning, and research". This OER movement was initiated by the Massachusetts Institute of Technology (MIT) in 2001 by releasing their learning materials for free use through their website. The term OER was adopted at the first Global OER Forum organized by United Nations Educational, Scientific and Cultural Organization (UNESCO) one year after its birth (UNESCO, n.d.). Even though the OER movement appears to have primarily an altruistic purpose as it provides educational resources for free to anyone, the commercial and transformational motivations can be also found in this movement as it helps increase the fame and the visibility of the university and the quality of educational materials through world-wide collaboration (Scalater, 2009). Focusing on the altruistic motivations, this literature review will examine some aspects for educators to consider in designing, utilizing, disseminating, and assessing OERs in order to effectively implement learner-centered OERs in developing countries.

Literature Review

In designing learner-centered OERs, learning objects should be kept simple for OERs to be implemented in developing countries. Defined broadly, a learning object is a resource that can be reused to support learning. In this sense, learning objects can be regarded as an OER itself which is another reason why learning object is particularly important in OERs. Since OERs are materials found on the web, there are many embedded learning objects with technology such as PowerPoint, game blogs, and video clips. In creating these learning objects, material designers should carefully consider diverse learners in various cultures and environments because some learners do not have high speed Internet or high quality computers to download or install materials. Despite these important aspects of learning objects, however, Mestre (2010) revealed that learning object designers had little knowledge about the importance of learning objects based on results of her online survey to the 120 academic librarians who had an interest in instruction, information literacy, or online learning. Given questionnaires about design and learning style considerations, and assessment of the learning objects, the majority of the librarians answered that they used only one approach in tutorial design and they often chose the learning tools simply familiar to them or available at the moment of designing.

It would be helpful to see how learning objects can limit or affect the potential users of OERs as we compare the major two OER initiatives.: Open Course Ware (OCW) by MIT and Open Learning Initiative (OLI) by Carnegie Mellon University. MIT OCW provides simple learning materials such as a syllabus, a reading list, lecture notes, and video lectures per course. On the contrary, CMU OLI provides rich multimedia such as virtual labs and simulations including documentary materials. Even though it aims at supporting worldwide learners with full experiences of online learning, its high quality technology which needs specific operating

system, browsers, and multiple plug-ins, would create obstacles to offering numerous courses and reaching underprivileged learners. In the fall of 2005, OLI offered seven subject areas and began partnering with the faculties of institutions in three countries :Chile, Columbia, and Qatar (Stacey, 2007). Considering that MIT OCW has published 1,250 courses among its 1,800 MIT formal courses and has reached 14 developing countries (Argentina, Brazil, Colombia, Chile, Spain, Mexico, Peru, Portugal, Puerto Rico, Venezuela, China, Kenya, Ethiopia, and Egypt) in their own languages, we can suggest that simple learning objects are easy to produce and be made available to developing countries. This result implies that OCW and OLI targeted different main end-users when designing their OER initiatives, and it gives an example of considering the main target audience in choosing learning objects. If learners in underprivileged countries are the target audience, an OER designer should develop learning objects with rather simple technology.

In utilizing OERs in developing countries, it is recommended that a focused framework is to be provided as a guideline to local educators. Such frameworks would help local educators not only efficiently adapt OERs for their classes but also transfer available materials in their country into OERs. Discussing how to integrate existing materials into OERs, Nikoi et al. (2013) introduce the Content-Openness-Reuse/Repurpose-Evidence (CORRE) framework developed by the Open, Transferable and Technology-enabled Educational Resources (OTTER) project team at the University of Leicester. This framework suggests a guideline with indicative questions in transferring to OERs in the four stages from gathering existing materials and getting permissions of the original authors to checking the usability of the materials. Overall, the CORRE framework emphasizes the authors' and institutions' cultural and political support of openness as well as the use of indicative questions in the entire process. For local educators to

implement OERs in disadvantaged areas, however, a focused approach seems more applicable such as "the transformation process" in the Openness stage as it deals with more focused and practical steps for local teachers such as replacing images, reordering the structure, and removing difficult terms. This focused approach of the modification process can be also found in the framework suggested by Wolfenden et al. (2012). Underlining critical thinking ability to select and adapt the material, the authors deconstruct study units from the Teacher Education in Sub-Saharan African (TESSA) OERs to show what aspects should be localized and what should be kept within the existing materials. Wolfenden et al. (2012) present applicable directions of the adaptation steps for local teachers by suggesting the localization of generic names and cultural and environmental information, and the specification of curriculum. Along with the growth of OERs, such frameworks would be desirable for educators in developing countries as guidelines to make the most use of OERs.

For disseminating OERs throughout the world, the copyright should be less restrictive in the use and the derivation of OERs. Even though the materials may be excellent, without the permission for use, they cannot be utilized as OERs. Also, using generic information or materials may be less effective in developing countries considering that most OERs are created in developed countries. As can be seen from examples in Wolfenden et al. (2012), altering generic teaching materials relating to the local cultures facilitates local learners' involvement and understanding. Almost every OER material use the Creative Commons (CC) licenses which was founded in 2001 in America and allows creators to have "Some rights reserved" instead of "All rights reserved" (Bissell, 2009). Since the law is difficult for users, the CC provides a simple process for getting six different licenses based on the creators' choices of attribution, share alike, no derivative works, and non-commercial. The attribution license is the most accommodating as

it permits other users not only to distribute but also to modify materials even for commercial use (Creative Commons, n.d.). The creator can also limit modification of his or her work by selecting No Derivs meaning "no derivative works" and can keep their original license the same even after derivations by using Share Alike License. However, all three major OER initiatives - MIT OCW, CMU OLI, and Connexions of Rice University- allow modifications of their OERs with the attribution license of the CC (Stacey, 2007). Comparing the copyright license of those three OER initiatives, unique copyright use can be found in Connexions. Unlike MIT OCW and CMU OLI, Rice University Connexions permits commercial as well as non-commercial use because they hope that paper books and CD-ROMs can be published at an inexpensive cost using Connexions materials for the developing countries where the Internet has not reached (Stacey, 2007). Since Non-profit Government Organizations (NGO) can also publish paper books and CD-ROMs using the OER materials with non-commercial purposes, we cannot judge that Connexions' use of the CC license represents the best example for implementing OERs for developing countries. However, it is at least very insightful that commercial use can also be considered for the altruistic implementation of OERs. Whether educators allow commercial use or not, the most important issue in regarding copyright is that modification should not be restricted for the localization of OERs according to their different cultures in developing countries.

Lastly, to realize the implementation of learner-centered OERs, the effectiveness of OERs should be assessed. Without knowing its impact, the OER movement might end up being merely a trend, not actualizing its aim which is assisting underprivileged learners. Realizing the importance of the assessment, OECD launched web surveys to institutions and educators through email in 2006. OECD failed to receive a large number of answers from the institutions in the 30

OECD member countries but collected 193 individual answers from 49 OECD and non-OECD countries. However, the top three countries with a high respondent rate were the United States, Canada, and United Kingdom. Moreover, in almost half of the countries, less than three people answered the OECD questionnaire (OECD, 2006). OECD also cited Tufts University's OCW report that almost 60% of their visitors for the recent 19 months were from North America, and more than 50 % of the OCW users had a master's or doctoral degree. Open University in the United Kingdom revealed the similar result as well in their user analysis for six months in 2008. More than 70% of their visitors came from the United Kingdom, United States, and Canada; and over half of the visitors stayed at their site less than 10 seconds (McAndrew et al., 2009). The user study of University of California Berkeley conducted a much smaller study on 13 OER providers in tertiary education and presented that most of the OERs were often used for faculties to prepare new courses (Harley et al., 2006). As can be seen from the above user studies, however, OERs could not be effectively assessed in how useful the OER movement is for education in developing countries since most of the current OER users are in North America. It might be a direct reflection of the fact that OERs are not helpful for developing countries, but it might be simply because the survey tool was not effective in reaching developing countries.

Problem (Gap) Statement

While there are studies on diverse aspects of building and distributing OERs, there is little information on the impact of OERs or of the OER users, particularly in developing countries.

Significance of the Problem

For the effective implementation of learner-centered OERs, it is important to study how the end users of OERs as a target audience would affect the entire process of designing OERs from determining the learning contents and objects to copyright licenses. Particularly, when it comes to the realization of the altruistic purpose of OERs, studying underprivileged OER users is significant. Even though there have been a few studies on OER users, most of the OER users in those studies are faculty members or individual learners in higher education in developed countries. Considering the fact that the entire process of building OERs is a time and money consuming process, the impact of OERs should be researched so that educators can correct their direction accordingly. Otherwise, we might end up spending a fortune for building a seemingly altruistic trend in education helping those who already have enough knowledge and power leaving the disadvantaged deprived of this resource.

Purpose of the Study

The purpose of this study is to research the OER users in developing countries and assess the effectiveness of the OERs for their education.

Research Questions

This study will address the following research questions:

1. Who are the actual users of OERs: teacher educators, teachers, or individual learners?
2. What types of OERs can they access: digital OERs or printed OERs?
3. If they use digital OERs, considering the download speed, what material formats are most helpful?

4. If the users are individual learners, what is their educational level and age, and the purpose of using OERs?
5. If the users are educators, how have the OERs changed the quality of their classes?

Definition of Term

The key terms in this study are defined below:

1. OERs: OERs are educational resources and it does not necessarily mean online lectures.
2. Transformation: Transformation is increasing the quality of learning materials as many people add their knowledge and elaborate them.
3. Initiative: Initiative is a new development and a new approach to something.
4. Learning objects: Learning objects are a collection of the content, practice, and assessment items for a single learning objective.
5. Formal class: Formal class is a traditional class held in classroom.
6. Derivation: Derivation is modifying original OERs.

Conclusion

In this paper, some necessary aspects of OERs were reviewed to benefit learners in developing countries. Throughout the review, I found that having target learners in mind would affect the entire process of designing, utilizing, disseminating, and evaluating OERs. If educators aimed at learners in underprivileged environment, they should choose simple learning objects, focused frameworks, and accommodative copyright. However, difficulties have been found in evaluating the impact of OERs on underprivileged learners due to the lack of the OER user information in developing countries. Even though there have been attempts in reaching

OER users in both developed and developing countries, acquired information has been always about users in privileged countries. The significance of this problem is in that we might have used and may keep using a great deal of time and money in building OERs without helping those in underprivileged areas. The OER movement might result in assisting researchers or faculties in developed countries to accumulate their knowledge and their fame while collecting the funds by putting up the disadvantaged people as their advertising tools. Thus, I propose to study the OER users in developing countries: who they are, what types of materials they can access easily, what is the purpose of using OERs, and the impact of using OERs. Through this study, educators could see who the end users of OERs in developing countries are and what benefits OERs have contributed to their learning. The findings are expected to be used as an indicator of how much the OER movement has achieved its altruistic aim and to suggest which aspects need to be more developed in order to reach the disadvantaged learners.

References

- Bissell, A. N. (Feb 26, 2009). Permission granted: Open licensing for educational resources, open learning. (2009). *The Journal of Open, Distance and e-Learning*, 24(1), 97-106.
- Creative Commons. (n.d.). *About The Licenses*. Retrieved from <http://creativecommons.org/licenses/>
- Harley, D., Henke, J., & Lawrence, S. (2006). Why Study Users? An Environmental Scan of Use and Users of Digital Resources in Humanities and Social Sciences Undergraduate Education. UC Berkeley: Center for Studies in Higher Education. Retrieved from: <http://escholarship.org/uc/item/61g3s91k>
- McAndrew, P., Santos, A., Lane, A., Godwin, S., Okada, A., Wilson, T., Connolly, T., Ferreira, G., Buckingham Shum, S., Bretts, J., & Webb, R. (2009). *Open Learn research report 2006-2008*.
- Mestre, L. S. (October 19, 2010). Matching up learning styles with learning objects: What's effective?. *Journal of Library Administration*, 50, 7, 808-829.
- Nikoi, S. K., Rowlett, T., Armellini, A., & Witthaus, G. (January 01, 2011). CORRE: A framework for evaluating and transforming teaching materials into open educational resources. *Open Learning: The Journal of Open, Distance and e-Learning*, 26, 3, 191-207.
- Organisation for Economic Co-operation and Development., & Centre for Educational Research and Innovation. (2007). *Giving knowledge for free: The emergence of open educational resources*. Paris, France: Organisation for Economic Co-operation and Development.

Sclater, N. (2009). The organisational impact of open educational resources. In: Ehlers, Ulf-Daniel and Schneckenberg, Dirk eds. *Changing Cultures in Higher Education: Moving Ahead to Future Learning*. Berlin / London: Springer.

Stacey, P. (April 02, 2007). Open educational resources in a global context. (2007).

First Monday, 12(4), Retrieved from

<http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/rt/printerFriendly/1769/1649>

UNESCO. (n.d.). *Open educational resources*. Retrieved from

<http://www.unesco.org/new/en/communication-and-information/access-to-knowledge/open-educational-resources/>

Wolfenden, F., Buckler, A., & Keraro, F. (March 08, 2013). OER Adaptation and Reuse across Cultural Contexts in Sub Saharan Africa: Lessons from TESSA (Teacher Education in Sub Saharan Africa). *Journal of Interactive Media in Education*.