

Beyond Open Access

Leveraging OER for University Teaching and Learning

Don Olcott, Jr.

INTRODUCTION

The growth of open educational resources (OER) by colleges and universities has been steady over the past 5 years. Today, universities across the globe are using OER to supplement formal instruction, reduce costs of instructional content, and leverage capacity-building opportunities for educational systems in developing countries (Kanwar, Kodhandaraman, & Umar, 2010; McGreal, 2012). OER, in and of themselves, cannot solve the immense challenges that define the digital divide. These challenges must

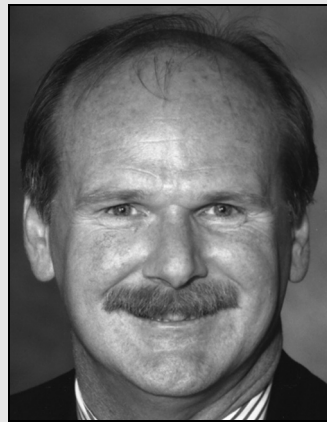
receive increasing priority in the political, economic, social, and ethnic spheres to position education for development as a viable capacity building strategy in developing nations (Butcher, Kanwar, & Uvalić-Trumbić, 2011).

Despite the recent growth, OER may be the best-kept secret on the planet. There is clearly a need to expand the promotion, benefits, and cooperative sharing potential of OER in the broader university community at the grass roots level. Indeed, major organizations including UNESCO, the Commonwealth of Learning, OpenLearn, OERAsia, Connexions, MIT, and other agencies have been instrumental in promoting OER in education.

This article will provide a status report on some of the reoccurring and emerging issues for university adoption and use of OER. Although it is difficult to present concepts that are directed at practitioners new to OER and at the same time include analyses of issues for experienced OER users, the importance of expanding awareness and dialogue of OER suggests that this dual focus is warranted. A list of key questions for university leaders will be presented in the final section of the article. Appendix A will provide a list of key organizational resources for OER.

DEFINING OER

The definitions of emerging innovations tend to progress through a number of definitional iterations. This is due, in part, to



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the newness of the innovation and the impulse of practitioners to infuse new ideas and concepts into the process. OER have been around for a decade and we have seen the definitional continuum progress from the generic to the specific. A few recent examples are highlighted below.

Hylen (2007) states that OER refers to full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials or techniques used to support access to knowledge. The William and Flora Hewlett Foundation, a major contributor to OER project initiatives, has defined OER as: “teaching, learning and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or repurposing by others” (The William and Flora Hewlett Foundation, 2010, para. 2).

UNESCO and the Commonwealth of Learning (2011) define OER:

Open educational resources (OER): OER are teaching, learning and research materials in any medium that reside in the public domain and have been released under an open licence that permits access, use, repurposing, reuse and redistribution by others with no or limited restrictions (Atkins, Brown, & Hammond, 2007). Use of open technical standards improves access and reuse potential. OER can include full courses/programs, course materials, modules, student guides, teaching notes, textbooks, research articles, videos, assessment tools and instruments, interactive materials such as simulations, role plays, databases, software, apps (including mobile apps) and any other educationally useful materials. The term “OER” is not synonymous with online learning, eLearning or mobile learning. Many OER—while shareable in a digital format—are also printable. (p. v)

OER are not synonymous with online learning or distance education. The World

Wide Web, particularly the Internet, has become a gateway for accessing OER in digital formats. OER can be integrated as an instructional component in an online learning or mobile learning course yet these same OER may also be readily accessible in print formats. Digital formats via the Internet simply provide an efficient and accessible cyberhighway to OER with paying the tollbooth of licensing fees, royalties and/or copyright holder permission (Butcher et al., 2011).

OER, however, can be integrated and developed within online learning management systems. Connexions (www.cnx.org) provides a system to develop the OER online and then use automated processes for creating a Creative Commons license, adding the OER to a database, and publishing the OER. Moreover, this particular system allows teams to contribute to developing the OER on this site thereby tapping into broader expertise to create, evaluate, and publish the final OER (Butcher et al., 2011).

The key attribute of OER that differentiates them from any other educational resource is the license (Butcher et al., 2011). OER can be accessed easily and efficiently for reuse and adaptation because the open license does not require prior permission, licensing fees, and/or royalties via the copyright holder.

OER: FREQUENTLY ASKED QUESTIONS

ARE OER FREE?

OER are basically free to access without seeking permission and paying licensing fees. Depending on the specific requirements of a Creative Commons license, OER may generally be reused, modified, integrated in another delivery medium, and distributed for educational purposes. In sum, initial access to OER is free to the user (McGreal, 2012).

A second consideration of “free” pertains to the financial cost (money and people) of OER. Perhaps the easiest way to think about this is that OER initially are accessible for free; however, the subsequent modification, reuse, repackaging, management, and integration at the organizational level, does require a financial investment of money and staff (Butcher, et al., 2011).

For example, if a university decides to create an electronic repository for its own OER or even combined with external OER, this does not happen by magic. Someone has to organize and develop policies and processes for the repository. Someone has to talk with faculty about the merits of making their content open within the repository. Who will be involved in ensuring quality standards at the institutional level for OER? These issues only begin to enter the emerging scholarly dialog on open educational practices (Conole, 2010a; Conole & Ehlers, 2010; Ehlers, 2008) and open educational management (Olcott, 2012a).

The idea that OER are free is a simplistic assertion that often leads to further assertions that OER will cut costs for educational delivery, be a professional development resource for faculty, enhance student success, strengthen research, and more. The plausibility of these OER impacts are tied to the broader question of how and why institutions invest in quality teaching and learning processes that are surrounded and supported with an array of sound educational resources. The value of OER suggests that an institution is committed to investing sufficient resources (fiscal and human) in teaching and learning that enhances instruction and improves student learning. OER is one, and only one, factor that may contribute to student success.

IS AN OPEN LICENSE WIDE OPEN?

An open license for OER may have some restrictions to protect the original

author or creator of the resource (Creative Commons, 2012). Many practitioners misinterpret licensing parameters, believing that content automatically resides in the public domain and the original author has relinquished all rights. In fact, open licenses (aka, Creative Commons) are designed to protect the rights of the original author by ensuring that original credit is given for any use of this material. Moreover, though becoming less common, some open licenses restrict modification of the original resource (no derivatives). In other words, you can access, copy, and use the material for educational purposes but you cannot alter the original content (Butcher et al., 2011; McGreal, 2012).

An open license allows the original author to retain copyright over his or her work and yet give away some rights under an open license. There is a variety of different licensing options and the reader is encouraged to visit www.creativecommons.org to review these (Butcher et al., 2011; McGreal, 2012). Any use of open content for commercial purposes by the user is generally an infringement of copyright law with potential legal penalties for those violating intellectual property laws.

A QUESTION OF QUALITY

A reoccurring issue in education reverts back to the question: who is responsible for ensuring the quality of educational materials? This question is of particular importance for OER given many of these resources can be modified and changed for subsequent adaptation and use. At the same, time common practice suggests that the institution and the educators using OER have an inherent responsibility to maintain the quality of these materials (Butcher et al., 2011).

The OER movement is a mere decade old. The increase in OER development and institutional repositories has grown considerably in just a few years. A number of

questions have emerged recently. Olcott (2012a) summarizes some key questions below.

- How do we differentiate OER from open educational practices? (Conole, 2010; Ehlers, 2008). Open educational management? (Conole & Ehlers, 2010; Olcott, 2012a);
- What benchmarking strategies do we consider for establishing quality standards for similar OER content? (Butcher et al., 2011);
- Formal and informal OER suggest a variety of uses in educational contexts (Olcott, 2012a);
- Do colleges and universities consider offering academic credit for OER? (Olcott, 2012a). Will students resist using OER unless they can earn academic credit and apply this credit toward a credential? Or should OER remain and supplementary learning resources to formal instructional content?; and
- Given the sustainability of OER requires an investment of money and human resources, what business models are needed? (De Langen & Bitter-Rijkema, 2012); How do these differ from traditional business models where revenues are a significant part of a business plan?

These issues are not intended to be all inclusive. Educational institutions and educators will have to grapple with a host of localized issues related to policies, incentives, management costs, assessment, and others.

ADVANTAGES AND LIMITATIONS OF OER

What are the pros and cons of OER? Kanwar et al. (2010) summarized some of the advantages of OER particularly for developing country educational systems. These are paraphrased as follows:

- resource optimization—OER help developing countries save both course authoring time and money;
- OER foster the exchange of global knowledge;
- online collaborative OER development supports capacity building in the developing world thereby bridging the digital divide;
- collaborative OER development encourages the preservation and dissemination of indigenous knowledge; and
- the availability of high-quality OER can raise the quality of education at all levels.

At a practical level OER advocates cite that OER can be reused, mixed, altered, and localized for cultural and social contexts; you do not need permission to use them; there are no Digital Rights Management or restrictive licensing; and you can copy, paste, annotate, highlight, print out basically free of charge (Butcher et al., 2011; Kanwa et al., 2010; McGreal, 2012).

Common barriers cited include the lack of awareness about OER; the university elitism that it was invented here so we'll use our own; faculty resistance given my content is king in my kingdom; and of course the lobbying of many publishers that see the OER movement as a threat to their historical business monopoly over content. Content is big business in the commercial world and those models will die hard (McGreal, 2012).

From a practical-applied perspective (Butcher et al., 2011), OER provide teachers and students with:

- access to global content that can be adapted and localized by teachers and faculty anywhere, anytime to create new courses-modules-lessons or enhance existing content;
- more resources and choices for students to supplement their studies with "value-added" content;

- opportunities to create diverse student and faculty learning communities that can bridge cultural, gender, and ethnic differences to promote social inclusion in our classrooms, in our communities, and in our world. OER are effective localized cultural-social-ethnic manifestations of the global village.

What are some examples of OER use in education? Olcott (2012b) identified some basic examples.

- illustrating an innovative practice in reading comprehension for primary school teachers using an excerpt from a scholarly article;
- lessons for teaching effectiveness, mentoring, and instructional design for teachers and/or teacher preparation institutions in Sub-Saharan Africa (See TESSA Project at www.tessaafrica.net;
- showing a podcast on French pronunciation for a beginning French high school course;
- reviewing photographs of modern art from an “open resource” museum website to illustrate characteristics of art nouveau; and
- conducting a 4-hour “Introduction to OER” workshop at a major open and learning conference using resource modules developed by the Commonwealth of Learning.

Indeed, these practices are common to most educational environments. OER provide ready access to content for supporting these educational practices and adapt them to teaching and learning processes. Moreover, the simple practice of using OER in an educational practice leads teachers and students to a host of additional OER resources available to support value-added teaching, learning, and research. These examples are not all-inclusive. Educators adapt OER to their teaching strengths, lesson objectives, and the learning needs of their students.

One of the unique advantages to OER is the capacity to adapt and reformat (this must be authorized in the open license) into diverse content packages. McGreal (2012) states:

The concept of granularity is also important. An OER can be a course, unit, lesson, image, Web page, exercise, multimedia clip, etc. but it should have a *specified* pedagogical purpose/context [15]. Content instances can be assembled into a lesson. Lessons can be assembled into modules. Modules can be assembled into courses, and courses can even be assembled together and become a full programme. All of these at their various levels of granularity can be OER. (McGreal, 2012, p. 2)

In sum, OER can be adapted for a wide range of uses in education at all levels. Moreover, they expand the resource base for faculty to tap into high quality materials to supplement their own use of open and proprietary resources. This brings us to a common question about OER: Are they really free?

The OER movement is based on the premise of free and open access of knowledge to anyone, anywhere, anytime for educational and personal enrichment purposes. However, the issues of “free” and licensing were discussed earlier in this commentary. Indeed, it was pointed out that there are legitimate and necessary restrictions on the openness of proprietary educational content. In the future, OER will coexist with proprietary content with each having an important role to play in education.

CHALLENGES FOR UNIVERSITIES

The UNESCO/COL definition of OER pointed out that OER are not synonymous with distance learning or online learning. However, recent advances in digital technologies create efficient venues for access-

ing, creating, storing, retrieving, and distributing OER content.

University leaders have many questions about OER, their quality, and whether they are a viable option for their institution. It is beyond the scope of this commentary to cover the myriad of questions and issues.

The first key question is to ask is what is the educational context or potential value-added contribution of OER to the overall teaching and learning mission and enterprise of the university? This is a fundamental question before considering any major institutional investment in OER (Olcott, 2012b).

Colleges and universities invest significant resources (fiscal and human) in the teaching and learning enterprise. This includes personnel costs, support services, instructional materials, professional development, and educational technology and staff training. These are just a few of the major investments made by a university.

From a management perspective, the misconception of OER as free must be considered seriously—OER cost money and are not free. Is your institution willing to invest staffing and money in the management and staffing of OER? OER content may be accessible and free, but a staff has to manage and maintain the OER repository on your campus. OER can, however, simply be a supplemental resource for faculty and students whether the institution

chooses to invest or not. Institutional leaders must examine clearly the monetary implications of integrating OER into the mainstream educational enterprise (De Langen & Bitter-Rijkema, 2012; Olcott, 2012, 2012b).

There are capacity issues to examine regarding an institution's ability to leverage the potential of OER. For example, the capacity of the institutional information technology and educational technology departments are critical to maximizing the potential of OER. Do these departments have well developed open and distance learning capabilities, training programs, and support infrastructures for students? The critical point is that OER management, infrastructure, and staffing must maintain service, training, and access to campus-wide OER use.

OER can be stored, linked, and retrieved in most learning management systems giving students and faculty immediate access to supplemental OER content resources in support of online courses. Moreover, as iPad and mobile technology teaching increases, OER will be accessible for students to review and use open content. Although OER access with new technologies is in its infancy, these technologies will accelerate creative ways for supporting teaching and learning with proprietary and open content resources.

Table 1. A Brave New World Emerging for OER

The OERu (Open Educational Resources University) has initiated a pilot project through its OER Tertiary Education Network universities to create and offer eight (8) first and second year university courses with an option to earn academic credit that could be applied toward a Bachelor's in Liberal Studies degree (Green, 2012). This project is in the early stages but reflects an innovative approach to creating value-added option for students.

URL: <http://creativecommons.org/weblog/entry/31947>

Similarly, MIT and Harvard have recently launched edX (www.edxonline.org/faqs) an open platform of Harvard and MIT courses that will be freely accessible worldwide to anyone having Internet access (Harvard-MIT, 2012). This will be available globally and students will even be able to earn Certificates of Mastery by demonstrating competency of content in the course (s). According to the edX website, students will not earn Harvard or MIT certificates, just certificates of mastery. Moreover, Harvard and MIT students will not be allowed to take these courses and Harvard and MIT academic credit will not be granted for these courses

Source: Olcott, D. (2012a).

In many countries, OER must be viewed within the context of local culture, traditions, heritage, and language. At varying levels, these nations are committed to preserving the heritage of their cultures and preserving their native language. The standardization of English as the global language of commerce also has important implications for OER development in education.

The UNESCO/COL OER Declaration (2012) for governments to promote OER awareness, development, and use accentuates the need to create OER in multiple languages (UNESCO/COL, 2012). A major policy issue around OER adoption, development and use will be to define a balance of creating OER in Arabic and English. Moreover, this is not an either-or proposition. OER can and will have immense educational value in English and in Arabic not only as university level, but in K-12 educational systems across the region. Universities may be wise to consider these cultural, heritage, and linguistic issues in advance as they contemplate the scope of their OER initiatives.

KEY QUESTIONS FOR UNIVERSITY LEADERS

Olcott (2012a) identified key issues for university leadership to consider that are relevant to OER. These included:

1. What management models are most effective for university OER repositories?
2. Does the academic culture of the university create barriers to “institutionalizing” OER and open educational practices?
3. As an investment toward quality teaching and learning, what level of resources is needed for OER staff and infrastructure?
4. Should universities organize their OER inventory (internal and external) so that students can earn formal aca-

demetic credit? What structures, policies, and assessment measures will be needed to do this?

5. Do we leave OER in the nonformal resource category and focus on using OER as open, flexible, and optional resources to support and supplement our formal higher education teaching and learning processes?
6. Can we have this openness and flexibility without integrating formal OER into our core management and organizational structures?
7. What revenue enhancement strategies can universities employ for sustainable OER development and management?
8. Should universities revert to an OER fee similar to the “distance learning or technology” fee charged to students by many universities?
9. Does the educational value of OER justify university investment of reoccurring budget allocations to the development and management of OER? Will faculty members, department chairpersons, and senior leadership support this?
10. What does a long-term sustainable business model look like for OER?

The OERu and Harvard-MIT initiatives suggest that educational institutions and educators are often inclined to integrate innovations into traditional institutional structures. In other words, it is not surprising that the issue of academic credit or formal recognition of using OER has entered the landscape.

We are seeing the recycling of open and distance learning issues from 20 years ago appear on the OER landscape today. Many faculty members are resistant to having their content put up on the open market (Olcott, 2012a). Second, many are concerned about having their intellectual property placed in a public forum for review by peers, students, and the general public. The old adage that it was created here and here it shall stay remains strong

in the academy. And, many who see value in open educational resources are trekking down an old incentives path asking how does the development and use of OERs by faculty count toward career advancement—in the academy that means promotion and tenure. What goes around comes around and stays around in the hallowed halls of our ivory towers.

SUMMARY

OER are growing rapidly across the globe. Open and free content, accessible to anyone anywhere and through digital media, has the capacity to reshape the educational landscape. In fact, OER have been reshaping higher education for nearly a decade and may be the best-kept secret on the planet. OER are not a panacea for resolving all the issues in education relevant to access, the cost of content, and the teaching, acquisition and application of knowledge through educational media. Rather they are resources that broaden the content continuum for educators to use for designing innovative and engaging teaching approaches that produce improved and rewarding learning experiences for students.

University leaders may need to assess their local knowledge base about OER; how OER capacity aligns with the institution's mission and teaching and learning infrastructure; the cultural, social, and linguistic issues relevant to OER; and what organizations may be potential partners for OER collaboration. Colleges and universities new to the OER movement may find it useful to establish a task force or working group to examine the potential benefits continuum of OER for the institution.

Universities will have to seriously consider the benefits continuum of integrating OER into the mainstream teaching and learning infrastructure of the academy. OER will require money, staffing, and research. OER will require critical input

from faculty and students. OER will require a sustainable business model beyond project-based resources from foundations, corporations, government agencies, and private donors. Indeed, there may be a brave new world emerging for OER but it will cost money, commitment, vision, and integration into the mainstream university structure to be effective, sustainable, and value-added resources.

APPENDIX A: RECOMMENDED OER WEBSITES FOR UNIVERSITIES

- Knowledge Cloud:
www.oerknowledgecloud.com
- Commonwealth of Learning (COL):
www.col.org
- Connexions:
www.cnx.org
- Creative Commons:
www.creativecommons.org
- Harvard/MIT edX:
www.edxonline.org/faqs
- OER Africa:
www.oerafrica.org
- OER ASIA:
www.oerasia.org
- Open Courseware Consortium:
www.ocwconsortium.org
- TESSA (Teacher Education in Sub Saharan Africa):
www.tessafrica.net
- OpenLearn:
www.open.edu/openlearn
- UNESCO:
www.unesco.org

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