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Evaluating open educational resources: Lessons learned

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Abstract

It was only ten years ago that MIT announced its OpenCourseWare initiative, and in 2012 the Paris Declaration on OER (Open Educational Resources) was announced by UNESCO. Over this decade, there has been a proliferation of open educational resources (OER) worldwide, including the publication of open courses that anyone may access on the Internet. This phenomenon continues to expand, but mostly without the provision of increased levels of service beyond the simple publication of course materials online. In spite of the open Creative Commons licensing under which many of OER materials are published online, actual adoption and adaptation of these materials by another institution wishing to incorporate them into a different educational context poses numerous challenges. This discussion gives an overview of the types of challenges encountered in reusing OER, and provides recommendations for institutions desiring to participate more fully in reusing and repurposing these resources.

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1. Introduction

With the growth of Open Educational Resources (OER) and their potential for reuse in many different ways, educational institutions are encouraged to conduct and support research on the use and reuse of OER (Commonwealth of Learning, 2011), and new skills are required for developers who intend to reuse these resources. While, educators frequently reuse content as routine part of their practice (JISC, 2011), engaging with OER more formally is a more complex matter. The following discussion provides a brief over of OER and some lessons learned in evaluating OER for the purpose of reuse in the development of university undergraduate courses. There are many definitions of OER. The definition coined by UNESCO (2002) is the “open provision of educational resources, enabled by information and communication technologies, for consultation, use and adaptation by a community of users for noncommercial purposes.” OER can include such elements as full courses and related materials, textbooks, streaming media, assessments, software and other tools that provide learning opportunities (Atkins, Brown and Hammond, 2009). Downes (2007) notes the aspect of open licensing, and the “4 Rs” of reuse, redistribute, revise

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and remix have also gained attention (Hilton et al., 2008). For the purposes of this discussion, the focus is on the challenges involved in working with OER in the form of full open courses (Hewlett, 2009) to prepare them for the processes of reusing, redistributing, revising and remixing.

2. A decade of OER

Following MIT's early beginnings in 2001 with the OpenCourseWare initiative, there are now hundreds of universities and other post-secondary institutions worldwide collaborating in the advancement of OER. Since UNESCO's early involvement, the OER movement has gained the attention and support of such organizations as the World Bank, OECD, the Commonwealth of Learning and the European Union. In addition, the movement has received significant funding from such organizations as The William and Flora Hewlett and the Andrew W. Mellon Foundations (Taylor, 2007), and universities are collaborating in offering various types of OER in many different projects, such as Coursera, EdX and the OERu.

OER are available for use by individuals as well as institutions, and for many different purposes, but for the most part they have until recently been available mainly as published materials without the full range of services that universities traditionally provide in support of online learning; for instance, student support, tutoring, assessment and granting of credit have not been included with most OER initiatives. Thus, the OER movement is still characterized largely by a proliferation of content only. Institutions that wish not only to publish but also to reuse OER content offered under an open license by others face a task that is more complex than initially meets the eye.

3. The study

A large number of OER were reviewed by faculty and instructional designers for potential reuse in a variety of undergraduate programs and disciplines. Feedback was obtained informally from reviewer comments as well as through additional analysis of OER by the author. Searches for courses included commonly known and publicized sites as well as through such aggregated search sites as the Open Courseware Consortium. While initially a more complex checklist was used, a later version known as a guideline was greatly simplified based on the differing contexts of each course and the lack of adaptability of a checklist. The challenges encountered were considered from the perspective of the re-using agency.

4. Results

The main issues identified in the OER were clustered and summarized, followed by recommendations provided as a contribution to emerging practice around the use of OER

4.1. Completeness of content

While courses may appear on the surface to be complete, there be missing components that require additional work. Assessments such as quizzes and exams may be absent. Alternatively, those that are present may be of little value, particularly in the case of formative assessments such as exams that are published as part of the course and therefore already highly exposed. Alternatively, some of these elements may have been embedded in a learning management system and not extracted for improved availability.

The re-user of OER will need to undertake a systematic inventory of the materials provided and determine to what extent it will be more effective to fill in the gaps, where they exist, or alternatively may need to disregard the OER altogether and begin development from the beginning. Some OER sites provide indices as to the types and completeness of content, providing a quick tool for assessment of the resource with excessive expenditure of time. It may be worth the time for a re-user to outline the provided materials in a high-level course-blueprint format, to identify gaps and other problems in the content.

It should be obvious that an appropriate academic peer review is a mandatory part of a course review. Providing content in relatively discreet chunks assists with remixing the content or making it available via syndication to learning management systems.

4.2. Learning design elements

A great many OER do not have such basic elements as learning objectives. Such an absence, of course, makes it difficult to assess the course in terms of its overall purpose and desired outcomes, as well as the pedagogical alignment of materials such as learning resources, activities and assessments. During the initial selection of OER for reuse, learning objectives are a key element in determining whether the course has the level of coverage and depth appropriate to its new intended use within a different context, institution, and program. Even if reusers of the course content intend to use content at a more granular level than that of the whole course, learning objectives will assist in locating the appropriate sections. Without learning objectives—in the OER under evaluation as well as in the relevant program or course outline of the receiving institution—individuals assigned to review the OER for the reusing institution will find it more difficult and time-consuming to arrive at a determination. The inclusion of learning objective should be standard practice for developers of outcomes-based courses intended for reuse as OER.

Other elements such as assumptions around instructor-learner as well as peer interactions in the course may be deeply embedded in learning activities or alternatively distributed in no consistent manner around the course content, and thus may require reconsideration for different delivery methods such as independent study, paced cohorts or others. While some OER provide instructions to engage in discussions with students using such tools as OpenStudy or Google Groups, which are more openly available, others may make reference to a specific e-portfolio suite or forum in a certain learning management system that is unavailable to users outside the original delivery context. Beyond this, certain discussion questions, quizzes and other elements maybe remain embedded in the learning management system and thereby be unavailable for access to the re-user, or at minimum be complex to extract for reuse. There is no easy solution to these particular problems other than increased awareness on the part of all those developing to follow good learning design practices.

4.3. Assumptions about copyright

While many courses may appear at first to be under an open license, careful inspection of the wording concerning licensing, as well as the content of the course, may reveal components that require new copyright clearances based on the manner in which they are licensed. Copyright licensing is complex and aspects can be open to different interpretations (Friesen, 2011). The fact that a course has the superficial appearance of being open should not lead to a conclusion that a close inspection is not warranted. For those intending to reuse such materials, standard copyright clearance processes used within institutions must be applied to OER as well, with the additional expectation that additional training in Creative Commons and other open licensing schemes will become an increasing necessity in analyzing OER for reuse. These elements will need to be re-cleared, replaced or eliminated. For the developer of OER, increasingly the benefits are becoming manifest to avoiding complex copyright clearance requirements wherever possible, finding resources under open source licenses or resources that can be linked to externally. These approaches can serve to reduce or eliminate longer-term challenges of maintaining a complex copyright database and payment scheme for courses, particularly when they are made available for unlimited access and thus potentially placing increased demands on the copyright tracking system and budget.

The other aspect of copyright of course is following through with the type of licensing under which the overall OER is placed, ensuring for instance that licensing including a “share-alike” clause in the original is honoured in the new iteration of the OER.

4.4. *Local context*

Unless an OER has been explicitly edited, or even at an earlier stage, developed with reuse in mind, there may be internal references that are meaningful within the original course context but make little sense in the new context. For example, many courses contain either full lecture capture videos or snippets of the same. The instructor may make references to a previous course or lesson that is not included with the present OER, assignment due dates, or specific references to the institution in which the course was originally developed and delivered.

Methods to address these problems include, first, to familiarize faculty who develop and present the original course to consider the larger potential audience of the course and to follow practices that contextualize them for the “secondary” audience by speaking both to the class at hand and the larger, invisible group of open learners who will eventually be studying these materials and possibly in different modalities; or avoid such references altogether. Alternatively, increased subsequent editing and cleanup will be required after the fact and while this is one solution, it is a more time consuming and less scalable solution than having instructors more closely tuned in to the needs of their future open audiences. From the perspective of the re-user of the resource, correcting these problems becomes even more difficult if the source files are not available.

4.5. *Textbooks*

Textbooks provide a particularly difficult challenge. With the rapid cycles in today’s world of educational publishing, the textbooks referenced in the OER are rapidly outdated. As a result the OER may need changes in its reference to an older version of a textbook. Beyond this problem of course is the textbook itself; if the ideal is to provide the OER at as low a cost as possible, wherever possible open textbooks (and journals) should be increasingly sought out or developed as part of a course or program. At this early stage in the adoption cycle of OER (Stacey, 2012), compromises will be inevitable in many cases however.

4.6. *Source files*

Many OER are placed on the web as quasi-courses, with the resources compressed, sized and laid out for page appearance. While this is helpful for those re-purposing the OER to gain a better understanding of the course context, it does not provide the necessary source files for re-purposing or remixing. Such elements as video clips with embedded logos, presentation files, unsatisfactorily compressed or sized graphics, or PDF files without the original source documents, to give a few examples, create additional work for those wishing to repurpose the content and extra efforts may be required to contact the owners to obtain source files. An additional problem encountered is that the actual OER may have been amended and updated over time while the source files are left untouched. The re-user will need to check to ensure that an older version isn’t unintentionally being reintroduced into circulation.

4.7. *Navigation*

Some courses have been extracted from a learning management system such as Moodle or Angel, and then placed on HTML pages with links to other web resources and in some cases PDF documents. It does not take long before the navigational structure becomes obscured, as each of the linked elements may have within itself an entire self-contained navigational structure as well as potentially conflicting instructions. Which instructions are simply to be ignored as part of the linked-to learning resources, as opposed to those intended as a part of the main course structure? It is particularly problematic when by default the assumed learner is handed off between HTML pages, PDF files and other locations without a clear overarching set of instructions or marked pathway. There is certainly validity to removing content from a learning management system from the perspective of making the content itself

more readily available and modularized. However, while the learning management system itself typically provides at least some of this framework, extracting and mounting a course for open use by others outside the learning management system requires some additional attention. An overall course map or outline would be particularly helpful in this regard and a helpful standard practice.

5. Conclusion

In spite of the aforementioned issues and concerns, those who wish to repurpose OER for use in their own institutions need not despair. In fact, quite the opposite should be considered: If it can be assumed that at least a percentage of those who re-use and repurpose OER are also intending to rerelease them under an open source license, at each stage there may be increasing levels of improvement of these resources for others to use, the potential addition of student content over time, and a growing body of knowledge that over time will improve practice and increase proficiency in developing course for broader use beyond the immediate audience.

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