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Stacy Katz
CUNY Lehman College

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Open Educational Resources: Why Libraries Are Incentivizing Open Content Creation, Curation, and Adaptation

Stacy Katz

The movement to create, adapt, and adopt Open Educational Resources (OER) is challenging and changing the paradigm of academic libraries. Libraries are utilizing precious time and resources to incentivize faculty to replace textbooks and primarily apply OERs in their place. Open Educational Resources help students save money on textbooks. They also invigorate faculty teaching, increase student achievement, and align materials with educational goals. Recent studies have suggested that OERs increase measurable retention factors, including engagement and grade performance. In a study of outcomes of those who used OER and those who did not, a statistically significant difference was found in course completion, class achievement, and enrollment intensity (Fischer et al. 2015). This chapter examines what the OER movement is, why and how libraries are leading, as well as presenting a case study on developing an OER Initiative.

It's no secret that textbook costs are prohibitively expensive for students. This is a challenge for higher education, particularly public education. The figures on textbook costs are staggering: in the past ten years, the cost of textbooks has increased by 73%. The Student Public Interest Research Groups (PIRGs) have issued reports on the cost of textbooks and drivers behind their high cost. Some of the most significant results show that the cost of textbooks negatively impacts student success. The Student PIRGs study indicates that 65% of students had skipped buying or renting a textbook because it was too expensive, and 94% of those students believed that doing so would hurt their grade in a course. Additionally, 82% of students thought

they would perform significantly better in a course if the textbook were available free online and buying a hard copy were optional. (Senack & Donoghue 2016)

These findings are echoed by the 2016 Florida Virtual Campus Survey that found that "66.6% of students did not purchase the required materials" (2016). They also reported that students "occasionally or frequently take fewer courses (47.6%); do not register for a course (45.5%); drop a course (26.1%); or withdraw from courses (20.7%)" (Florida Virtual Campus 2016).

A solution to the problem of high textbook cost is an alternative textbook initiative. These have been proposed and developed to incentivize replacement of textbooks primarily with OER, as well as other resources provided at no cost to students. These initiatives have ranged from statewide solutions, such as Affordable Learning Georgia http://www.affordablelearninggeorgia.org/ and Open Oregon http://openoregon.org/, to grant-funded ones including the Achieving the Dream Grant http://achievingthedream.org/, to institution-based, such as University of Massachusetts Amherst https://www.library.umass.edu/services/teaching-and-learning/oer/open-education-initiative/ or Temple University http://guides.temple.edu/alttextbook.

To understand what OER are, we need to comprehend what we mean by the terms "open," "educational," and "resources." "Educational" is the most widely understood word in this phrase. "Educational" primarily means for the purpose of teaching and learning. "Resources" encompasses a wide array of learning objects, ranging from full courses to textbooks to podcasts to videos. "Resources" is essentially a catch-all term. "Open" requiring more explanation. Dr. David Wiley, Chief Academic Officer of Lumen Learning, provides a detailed definition of OER:

The terms "open content" and "open educational resources" describe any copyrightable work (traditionally excluding software, which is described by other terms like "open source") that is licensed in a manner that provides users with free and perpetual permission to engage in the 5R activities:

1. Retain - the right to make, own, and control copies of the content (e.g., download, duplicate, store, and manage)

2. Reuse - the right to use the content in a wide range of ways (e.g., in a class, in a study group, on a website, in a video)

3. Revise - the right to adapt, adjust, modify, or alter the content itself (e.g., translate the content into another language)

4. Remix - the right to combine the original or revised content with other material to create something new (e.g., incorporate the content into a mashup)

5. Redistribute - the right to share copies of the original content, your revisions, or your remixes with others (e.g., give a copy of the content to a friend). (Wiley 2017)

These "5R activities" are essential for a resource to be considered "open." Given the nature of openness, it is important for anyone wishing to create an OER to be familiar with other OER initiatives. OERs enable a communal iterative creation process that allows for development and improvement for up-to-date, freely available knowledge.

Libraries serve as a campus touchstone to understand the difficulties and expense for students to purchase textbooks. Libraries have long provided and managed reserve collections. In

purchasing reserve textbooks, librarians have seen rising textbook costs firsthand. Faculty is also sensitive to the cost of textbooks for students. According to the 2016 Babson Survey, the most common factor among faculty when selecting materials was cost to students. However, this is also the factor with which faculty are least satisfied. The biggest issues faculty encounter are "there are not enough resources for my subject" (49%), it is "too hard to find what I need" (48%), and "there is no comprehensive catalog of resources" (45%) (Allen & Seaman 2016).

OER concentrate on large introductory courses since they frequently include expensive textbooks and large enrollments. Libraries can reframe these challenges within the context of what OER allow faculty to do. If there are not enough resources in a given subject, can existing resources be adapted? Can the library curate the catalogs of resources to make searching easier? What are discipline faculty's learning goals for what they need? Could examining these goals help clarify what type of resource and content is needed? As a nexus of expertise in acquiring and organizing resources, searching for appropriate materials, teaching information literacy, particularly copyright and licensing, academic libraries are poised to lead in these areas.

Nevertheless, this type of work does exact a cost, both to faculty and the library. If possible, the time faculty invests in searching, adopting, adapting, and creating resources should be compensated. Possible ways to acknowledge and reward faculty work are course release time or providing income through a fellowship. However, course releases are outside the library's purview and require institutional buy-in. With a small amount of money, however, libraries can provide fellowships to incentivize adoption and adaptation of OER in place of textbooks.

At Lehman College, a four-year college of The City University of New York (CUNY), the Leonard Lief Library offers an Open Educational Resources Fellowship to "reduce the cost of course materials for students and increase student engagement through customized course

materials." (Leonard Lief Library, 2016) The Library is offering three fellowships of $1,000 each to faculty to replace a textbook with open resources as their course material. Lehman's fellowship is modeled after one that has been successful at New York City College of Technology, CUNY (City Tech). City Tech Fellowships began in 2015 with three fellowships equivalent to 23 hours at the 60% non-teaching adjunct faculty rate. Faculty has competing demands for its time. It is important to recognize their time and labor. With this stipend, selected faculty are expected to adapt an existing OER for their course. There is no expectation, of course, that faculty would write a complete textbook for this type of initiative.

In conceiving and developing a fellowship, it's important that the goals are achievable, for both discipline faculty selected and library faculty supporting the initiative. Since the Leonard Lief Library has neither an Open Educational Resources nor a Scholarly Communications Librarian, librarians working on this project have other responsibilities to balance. In addition, the decision was made to support this pilot project largely within the Library. In the future, we may consider collaborating with other departments.

Since faculty time is at a premium, we decided to employ a flipped classroom model for faculty training. In a flipped classroom, videos and lectures are viewed outside class. In-class time is spent on exercises, projects, and discussions. The in-person sessions will include a kickoff with a faculty member from another campus who has created an OER to talk about their project, the process, and potential pitfalls. We will also include hands-on open sessions for faculty to work on their OERs with librarians and other faculty available to assist.

A number of online trainings for OER already exist. CUNY's LaGuardia Community College has a course shell in Canvas that can be downloaded to Blackboard. Open Oregon also promotes an excellent online training. One of the positive aspects of working on an OER project

is that training and resources tend to be open themselves. An increasing number of training modules are freely available on the web under Creative Commons Licenses. OpenSUNY provides a training as a website and as a downloadable Blackboard package (OpenSUNY 2017). LaGuardia Community College has a course shell that was created in Canvas but can be imported into Blackboard. Trainings are also available as websites from Open Washington (Open Washington 2017).

The trainings include:

- What are OERs?
- What is Open?
- Creative Commons Licensing, Copyright, and Public Domain
- Locating and Evaluating OERs
- Adapting or Creating OERs
- Sharing OERs

The first two questions are chiefly about the philosophy of openness and criteria of OERs. Faculty must understand the meaning of openness from the outset. They will be utilizing OERs created by others, as well as creating their own. For this reason, they must be informed about Creative Commons licensing, copyright, and public domain. While librarians do not function as copyright attorneys (and frequently must provide disclaimers to that extent), the rights and restrictions of copyright are part of the ACRL Information Literacy Framework - Information Has Value. Since OERs are available and shareable electronically, using licensing properly is key. Displaying a Creative Commons (CC) license signals to a user that they can reuse, revise, remix, and redistribute the content according to the license without requesting permission. Permissions are already granted through the Creative Commons license. Without the

CC license, however, the user needs to contact the rights holder and request permission to reuse the content. Obtaining permission takes time, permission may not be granted, or it might be granted only for a limited time and scope. For OERs, it is critical that the content has an open (CC) license in order for this work to be retainable, reusable, revisable, remixable, and redistributable.

No central repository exists for OER. There are actually multiple collections of OER, some multidisciplinary, others discipline-specific. Some are limited to one type of resource, such as textbooks, while others include courses, videos, textbooks, and more. Many of these repositories are linked to larger scale initiatives that are grant funded or statewide. Most are targeted at higher education, though some also include resources at the K-12 level (Table 1.)

Table 1 – OER Repositories and Descriptions

Title	Type of Resource	Description
MERLOT https://www.merlot.org	- Animation - Assessment Tool - Assignment - Case Study - Collection - Development Tool - Drill and Practice - ePortfolio - Learning Object	Started in 1997, MERLOT is an open educational resource database indexing tens of thousands of learning materials. MERLOT includes over 2,500 open textbooks. It offers search refinements by discipline, material type, mobile filters, as well as user and community ratings.

	Repository	
	• Online Course	
	• Online Course Module	
	• Open Journal-Article	
	• Open Textbook	
	• Presentation	
	• Quiz/Test	
	• Reference Material	
	• Simulation	
	• Social Networking Tool	
	• Tutorial	
	• Workshop and Training Material	
Open SUNY Textbooks http://textbooks.opensuny.org/	Textbooks	Open SUNY is an open access textbook publishing initiative. Fifteen titles available through the first pilot and more titles are forthcoming. Titles are browseable by author, subject, and SUNY affiliation.
OpenStax	Textbooks	A non-profit based at Rice University,

https://openstax.org/	Instructor Resources	OpenStax has published over 25 textbooks aimed at introductory level, high enrollment courses. They include instructor resources, such as syllabus language, PowerPoint slides, and solutions manuals. There are also some AP coursebooks. OpenStax offers the option to order a low-cost print textbook through Amazon.
OpenStax CNX http://cnx.org/	Textbooks Pages	Building on the work of OpenStax, CNX provides a space for users to submit learning objects (pages) and books for courses in a variety of disciplines. Search filters, like publication date, author, type, keyword, and subject. The network is international and includes resources in a number of languages.
Open Textbook Library https://open.umn.edu/opentextbooks/	Textbooks	Open Textbook Library, part of the Open Textbook Network, provides a catalog of openly licensed textbooks, including OpenStax and Open SUNY textbooks. This database can be browsed by subject or searched. Some titles have been reviewed

		by peers, which can help identify which titles to adopt.

The resources in Table 1 are starting points to find OER. A growing number of institutional repositories provide access to OER. More OER databases are findable by searching the web, and individual OER materials may be indexed in Google Scholar. Springshare LibGuides Community (https://community.libguides.com/) includes OER databases that are recommended by librarians. If your institution has a LibGuides subscription, these OER LibGuides can be revised, reused, remixed, and redistributed with the creator's permission, or if they have given their guide a Creative Commons license.

While OERs legally provide the ability to engage in the "5R activities" (retain, reuse, remix, revise, and redistribute), the ability to do so meaningfully can be affected by the way the resource is published. The ALMS Framework, from David Wiley of Lumen Learning, lays out technical choices creators should consider when developing OER:

- Access to Editing Tools: Is the open content published in a format that can only be revised or remixed using tools that are extremely expensive (e.g., 3DS MAX)? Is the open content published in an exotic format that can only be revised or remixed using tools that run on an obscure or discontinued platform (e.g., OS/2)? Is the open content published in a format that can be revised or remixed using tools that are freely available and run on all major platforms (e.g., OpenOffice)?

- Level of Expertise Required: Is the open content published in a format that requires a significant amount of technical expertise to revise or remix (e.g., Blender)? Is the open

content published in a format that requires a minimum level of technical expertise to revise or remix (e.g., Word)?

- Meaningfully Editable: Is the open content published in a manner that makes its content essentially impossible to revise or remix (e.g., a scanned image of a handwritten document)? Is the open content published in a manner making its content easy to revise or remix (e.g., a text file)?

- Self-Sourced: Is the format preferred for consuming the open content the same format preferred for revising or remixing the open content (e.g., HTML)? Is the format preferred for consuming the open content different from the format preferred for revising or remixing the open content (e.g. Flash FLA vs SWF)? (Wiley 2017)

According to the 2016 Babson Survey, faculty is concerned about the quality of OER, as well as that resources are timely and up-to-date (Allen & Seaman 2016). The power of openness is the ability for faculty to change and adapt resources to keep them current. Faculty is unlikely to find a textbook from a traditional publisher that meets their needs without any customization. Institutional incentives and support are critical to success of OER projects. At some institutions, there may be large-scale incentives and adoption. For example, the Achieving the Dream Grant is helping support creation of Zero Cost Textbook Degrees (Z-degrees) at 38 community colleges in thirteen states around the country. Under this grant, a bevy of materials will be created, adopted, adapted, and remixed. Students in these degree programs will not pay for textbooks in any of their courses, including general education requirements. Resources created for these Z-Degrees will be available as Open Educational Resources in courses across the country.

These initiatives are aimed at lowering or eliminating textbook costs for students. Not all of them are entirely open. Some include subscription library resources, provided at no cost to the students enrolled at colleges where the library subscribes to these e-resources. However, these resources are not open and do not have the 5R rights. Depending on the discipline, open resources may not be available. But removing barriers for students by eliminating the cost through subscription library resources is a step in the right direction.

Librarians and other interested individuals can join this conversation. The SPARC Libraries and OER Forum (http://sparcopen.org/our-work/sparc-library-oer-forum/) has an e-mail list and monthly call where librarians share "ideas, resources, and best practices" around OER, as well as coordinate events and programming, disseminating information about the OER movement. Through awareness of OERs, collaboration with faculty, and advocacy, libraries can drive creation, curation, and adaptation of OER.

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