

White Paper on OER: Seven Recommendations to Improve OER Uptake in Higher Education Institutions

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Introduction

The shift to online instruction necessitated by the Covid-19 pandemic from 2020-2022 resulted in higher education instructors and administrators looking for quality, easily used online instructional resources. This search brought renewed attention and interest to Open Educational Resources (OER), which may be described as instructional content created by instructors that is useable by other instructors. OER are openly licensed such that they are cost-free to use, and in many cases, they may also be modified as desired. Seeking to better understand how instructors at Waterloo perceive and use OER, a qualitative study was conducted with 13 faculty instructors. Responses from this study informed seven recommendations that are made in this white paper, which are grouped in three categories: new framings for the OER conversation, new practices for institutions, and new supports for institutions. Each recommendation represents a concrete direction for higher education institutions looking to improve local OER uptake.

Background

Since the idea of OER was first discussed in 2002 (UNESCO, n.d.), the literature has sought particularly to understand both the factors that encourage, and those that limit, OER uptake by faculty.

Studies with faculty have revealed that the biggest benefits to using OER come from:

- the cost savings for students (Delimont et al., 2016; Jung et al., 2017; Lantrip & Ray, 2021; Ozdemir & Hendricks, 2017; Petrides et al., 2011)
- the ability to customize teaching resources (Bliss et al., 2013; Delimont et al., 2016; Lantrip & Ray, 2021; Ozdemir & Hendricks, 2017; Petrides et al., 2011)
- the greater accessibility of course materials, especially in terms of students coming to class prepared and having done the readings (Bliss et al., 2013; Delimont et al., 2016; Jung et al., 2017; Lantrip & Ray, 2021; Ozdemir & Hendricks, 2017)

Faculty have also reported that they view the educational outcomes for students when using an OER textbook to be the same or better than when using a traditional textbook (Delimont et al., 2016; Jhangiani et al., 2016; Jung et al., 2017; Ozdemir & Hendricks, 2017).

Although there are clear benefits to using OER, faculty uptake has remained modest. Barriers identified in the literature include:

- faculty concerns about OER quality (Bliss et al., 2013; Jhangiani et al., 2016; Lantrip & Ray, 2021; Ozdemir & Hendricks, 2017)
- difficulty in sourcing pertinent resources (Delimont et al., 2016; Jhangiani et al., 2016; Abeywardena, Dhanarajan, & Chan, 2012)
- concern about the negative perceptions of colleagues (Jhangiani et al., 2016; Cox & Trotter, 2017).

Jhangiani et al. (2016) clarify that OER quality concerns stem largely from faculty who have not personally engaged in using OER, and indeed, Jung et al. (2017) reported that of the faculty they surveyed that were actively using OER textbooks from the OpenStax repository, 62% thought open textbooks are of similar quality to traditional textbooks, while 19% thought they were better: this trend has likewise been reflected in other studies (Allen & Seaman, 2014; Belikov & Bodily, 2016; Bliss et al., 2013; Hilton et al., 2013).

When it comes to barriers in adapting or creating OER, faculty report:

- lack of support for navigating copyright considerations (Delimont et al., 2016; Jhangiani et al., 2016)
- lack of skills in the technology platforms (Delimont et al., 2016)
- the large amount of time required (Bliss et al., 2013; Delimont et al., 2016; Jhangiani et al., 2016; Lantrip & Ray, 2021; Petrides et al., 2011).

A persistent theme in the literature was faculty hesitation to put time into OER development because OER are not recognized as a creditable aspect in tenure or professional advancement at the departmental or institutional level (Delimont et al., 2016).

While the literature has ample coverage of general faculty perceptions in terms of both benefits and barriers, there is an absence of more granular examination of OER support needs within particular contexts. Indeed, Cox and Trotter (2017) conducted interviews with faculty at three different universities in South Africa and found that OER adoption at each institution varied widely and was heavily dependent on institutional and departmental cultural factors within each context.

Similarly, there are gaps in the literature when it comes to OER perception and uptake within different faculties. Studies such as that by Petrides et al. (2011) occasionally report a difference of perception by discipline (in this case, that students in mathematics and computer science courses exhibited greater comfort with online OER, perhaps from previous experience using online tools) but OER perception studies by discipline are largely absent. Anderson et al. (2017) represent one exception, reporting on a survey about OER use sent out to engineering faculty at Washington State University and the University of Idaho. Perhaps the biggest realization from this survey is that the majority (59%) of survey respondents reported little or no familiarity with OERs, and that 43% of respondents had never used or examined OERs. Anderson et al. (2017) note that “some disciplines are far better represented in the corpus of open educational resources” (p. 271), and indicate that needed support for open education in different specialized disciplines can look quite different.

Within the Ontario context especially, there is a notable lack of research on faculty perception of OER. Carson (2020) wrote a survey-based thesis on OER uptake across Ontario colleges, but there is a need

for further investigation, especially as interest and funding for OER initiatives get more attention from government and other funding agencies, including Ontario's recent Virtual Learning Strategy grants.

At present, there is also a need for in-depth interview-based studies as much of the existing research relies on broad, survey-based methods to understand faculty perception of OER. A notable exception to this is a dissertation from Wright (2018), who used semi-structured interviews to explore faculty, librarian, and instructional designer perspectives of OER at a state college in east Florida. There have also been a few studies which, while primarily survey-based, included interview follow-ups with select participants (Delimont et al., 2016; Petrides et al., 2011). Other qualitative-based investigations of faculty perceptions of OER have relied on analysis of open responses included as an addendum on surveys to faculty (Lantrip & Ray, 2021; Belikov & Bodily, 2016). As the OER conversation progresses, a more nuanced understanding of faculty interest, motivation, and in-practice use of OER is needed to develop high-impact and effective supports.

Approach to Problem

The present study received ethics clearance (#43495) through the Waterloo REB and used a semi-structured, interview-based qualitative approach. Recruitment was undertaken by several phases of emailing to faculty instructors involved in online teaching communities of practice, and subsequently through a snowball sampling approach. Thirteen faculty instructors, drawn from the faculties of Arts, Science, Engineering, and Mathematics were interviewed. It is recognized that there may be some slight bias in that faculty instructors interested in an interview were generally those who knew what OER was and entered the conversation with an existing positive perception. However, interview questions and process were carefully designed to be as open-ended as possible, to allow the full thoughts of participants to come through and speak on their own. Using a grounded theory approach, interviews were transcribed and coded with the codes subsequently analyzed by all members of the research team for themes. These themes were drawn on to form seven recommendations, presented below.

Recommendations to Improve OER Uptake

This section contains seven recommendations for higher education institutions to improve local OER uptake. More details for each recommendation can be found below. Recommendations are grouped in three categories, and are as follows:

New framings for the OER conversation

1. Reframing OER as More than Textbooks
2. OER Integration Requires a Plan and a Longer Timeline

New practices for institutions

3. Reevaluate Promotion and Tenure Process for Faculty
4. Identify, Build, and Maintain OER Support and Knowledge Across Campus
5. Periodic OER Collection Call

New supports for institutions

6. Create an Institutional OER Repository
7. Create a Permanent OER Lead Position (e.g. Open Education Librarian)

New Framings for the OER Conversation

Reframing OER as More than Textbooks

“OER for me would almost always be a supplemental aspect of the course”

“You really can go through, pick and choose something that matches exactly what you want to do, or matches exactly with your learning outcomes”

Although much traditional discussion of OER starts from a focus on textbooks, participants expressed greater interest in smaller OER components that can be introduced in a course in a more flexible manner. Participants particularly emphasized the various forms these OER components could take: applications, 3D visualizations, interactive demos, videos, slide decks, course notes, quiz systems, labs, activities, online calculators, testing environments, sample essays, images, talks, coding problems, worksheets, wrong proofs, math problems, computational tools. Participants described that these component pieces were often used as supplements for particular topics, sometimes topics that participants knew were areas of difficulty for their students. Even when textbooks were used, there was strong emphasis that these would always be adapted: participants reported they would rarely adopt a single OER textbook wholesale and instead would want to take the bits that work for them or re-work content from a textbook to fit their vision for the course. To align better with faculty use of OER in practice, we recommend that conversations and initiatives around OER be reframed to emphasize OER as going beyond the textbook, with particular attention directed towards a building block conceptualization made possible by the open licensing of OER.

OER Integration Requires a Plan and a Longer Timeline

“You don’t have time to vet all this stuff- so what happens is, you use the stuff that the previous guy used, whether it’s good or bad”

“I just couldn’t focus on this stuff [OER] and so like it, it helped me too that the deadlines weren’t so strict because there were times where I literally went three weeks without being able to touch it at all”

“I think it’s almost too much work to adopt this or figure, can I adopt it and all, everything around that. So I think, ah forget it, I’ll do something else.”

“The result is very impressive, but it just takes so much time to make it”

In sharing their experiences with OER, it was clear that participants had successfully integrated OER into their courses when they had a strong vision as to what their needs were and how those could be satisfied by OER. Participants identified that one of the most compelling reasons to use OER over commercial resources was the flexibility to customize that is offered by OER. However, the process to find and customize OER in line with this vision took a significant amount of time. Indeed, some participants shared the difficulties that came when time was not taken to vet resources properly: finding inaccuracies or having students report found errors. While this experience was recognized by some participants as occurring as well when using commercial resources, there was a sense that while there is no solution to this situation with commercial resources, with OER there is action that can be taken by instructors to improve things. This emphasis on improvement also came through in terms of wanting to

revisit how OER were integrated into courses, to optimize the student learning experience. The enhanced control instructors have with the iterative nature of OER integration is a distinct difference than when dealing with commercial resources. We recommend that this aspect be explicitly acknowledged and planned for in conversations when OER are being considered for use by faculty instructors. A strong vision, plan, and realization that OER integration happens on a longer-term timeline than commercial resources is critical for follow-through and success of OER integration into courses.

New Practices for Higher Education Institutions

Reevaluate Promotion and Tenure Process for Faculty

“If somebody spends 3000 hours and gets absolutely zero recognition for it, it’s a bit of a disincentive to do it again”

“There’s not the motivation to spend a lot of time on that [OER] in our teaching, because that doesn’t count in the end”

“If I went to someone like “hey can I get like, credit for this” they’d be like, “well this is just your regular course prep. What’s the big deal?””

Reflective of findings from across the literature, participants emphasized the vast amount of time that is required to integrate OER into a course: from finding and evaluating existing OER, to pedagogical consideration of how the OER is best integrated, and particularly, the work required to adapt or create new OER content. Participants underscored the lack of incentive to put in the work to adapt or create suitable OER for their course: while the pedagogical and cost benefits of OER for students were well-recognized, participants highlighted the high opportunity cost of such work compared to other scholarly projects that matter within the faculty tenure and promotion process. Even basic recognition of OER work was indicated as missing: hundreds of hours might be put into developing a new OER, to the benefit of students and the department, without any recognition of this effort within the department. Some participants described that their department viewed adapting and creating OER as simply part of their teaching preparation. If institutions want to enable OER and the positive outcomes that come from faculty developing and using them in their courses, we recommend that the promotion and tenure process for faculty be re-evaluated so that this extensive time investment within the teaching portion of faculty responsibilities is recognized, rewarded, and thereby incentivized.

Identify, Build, and Maintain OER Support and Knowledge Across Campus

“Where would I go for help with that? That’s a good question. I don’t know, like once again, I feel that in my department I would just talk to people who already dealt with these things”

“Things like CEL and and CTE - it’s there, but it’s, but it’s there primarily to support teaching here, and the OER portion of it is potentially secondary or tertiary”

In listening to participants describe their work with OER, it became clear that each individual’s experience with OER was largely self-driven. Participant understanding of the OER landscape, from OER definitions, Creative Commons licenses, and options when it comes to making use of OER in practice, was dictated by the individual’s own initiative and self-learning. When talking about campus resources

around OER, participant experience varied but revolved around the resources and interactions immediately available to each individual. While participant knowledge of OER was good, there were clear areas of uncertainty for some participants, which served as significant barriers when they were looking to make use of OER or transition their independently developed instructional materials to OER. Participants reported reaching out to departmental colleagues or supervisors when they had questions about OER, and several highlighted external discipline-based communities (e.g. conferences, societies) as major sources of knowledge. Centralized campus resources that were mentioned as sources of OER knowledge came from a broad selection: Library, CEL (Centre for Extended Learning), CTE (Centre for Teaching Excellence), the campus copyright group, and the bookstore. However, it was clear that participants did not consider there to be a central entity or space on campus that held either comprehensive OER expertise or needed technology and equipment. Participant responses made it clear that there is interest in OER at Waterloo across academic departments and campus academic support services, but that this interest was organic and not necessarily reflected by current campus administration. Rather than have OER knowledge work duplicated and re-duplicated by siloed units and individuals, we recommend a cross-campus strategy focused on identifying, building, and maintaining OER knowledge. This might include aspects like a community of practice; initiatives designed to foster a knowledgeable culture of OER that allows for lessened barriers by creating clear and centralized bases of OER knowledge.

Periodic OER Collection Call

“I haven't gone through Creative Commons or anything like that. I keep meaning to, but I don't ever have time to actually look into it”

“These are OERs that I developed, and that in principle I could make available outside the course”

Participants were excited to talk about the OER initiatives they had undertaken for their courses: resources they had found and subsequently adopted or adapted, or projects they undertook to create OER; efforts that resulted in lower costs and/or greater learning outcomes for their students. It was clear that participants considered and emphasized the goal and end point of OER in terms of use for themselves and their students. However, a major aspect of OER is that they be publicly discoverable and useable: a key piece that some participants indicated they had reservations around or had not yet prioritized in terms of the personal work required. This self-focused sentiment seemed to stem from the individualistic and self-starter mentality participants shared as a key aspect that had launched their journey into OER, and in some cases, a sense that other instructors would not be interested in making use of what they had created. To help address these hesitations, we recommend an explicit and regularly scheduled campus-wide call for OER contributions. Participants reported the extra time and effort required to determine next steps for their OER, when their personal need for the OER had already been satisfied. A campus-wide OER collection call removes the need for instructors to take the initiative in determining how to share their OER, and clearly conveys that these OER are valued and desired. Flipping the switch from home-grown education resource to OER is straightforward, requiring the application of a Creative Commons license and a publicly accessible hosting forum. Asking for people to contribute their OER is a low-effort avenue to surface existing work that raises the profile of the institution and helps spur greater innovations and instructional excellence from subsequently built spin-off education resources.

New Supports for PSE Institutions

Create an Institutional OER Repository

“The things that I'm primarily using in my courses would be the materials that were developed within the faculty”

“I don't think that our faculty/departments are keen on deploying OERs. And here is why: I think the reason is that they prefer, they always prefer to create something internal”

“I'm not opposed to sharing it. But I don't- I can't share it the way it was shared the first time, 'cause I don't have the infrastructure.”

Participants stressed the high time investment required to find quality OER, and revealed that perception of OER quality is overwhelmingly subjective. Participant views on the usefulness of objective markers of quality like polish and positive peer review diverged, with some incorporating it as an element in their decision making and others disregarding it entirely. What emerged was a strong sense that pedagogical suitability and fit for student and course needs are the most important elements by which quality of OER is judged. Separately but related, participants reported a culture of sharing teaching resources within their departments, and stressed the usefulness of materials created by local colleagues. In addition, it became clear that participants were focused on developing OER for use in their class, with various avenues to make it available for their students, such as posting within Waterloo's LMS (Learn) space, or posting to either a Waterloo-based or personal server space. Once OER are accessible to students, going the extra step to make it available more widely to the public was far less emphasized. To help with the discoverability of quality (contextually relevant) OER, and to streamline the fully public publication of OER, we recommend that institutions create an institutionally-based OER repository. Such a repository would provide a high impact first point of searching for instructors interested in OER, a clear path for publishing OER, as well as a great point of advertisement to potential students that highlights the teaching excellence of the institution. The need for an institutional OER repository is especially pertinent as currently consortial and provincial bodies supporting OER are focused on a system based on referring/linking back to institutionally hosted content. This places the cost and staffing needs for OER maintenance on the institution but allows a greater degree of control from the institution to develop frameworks that work best for their stakeholders.

Create a Permanent OER Lead Position (e.g. Open Education Librarian)

“I kind of understand that maybe I don't have like a complete grasp of like maybe what OER is, or to be more precise, is, if you're considering to use OER, what is it that you should look at?”

“Technological integration certainly would have also been really helpful and really useful, and I don't know that that was really something that- certainly not that was offered to me, right? Like so, I'm sure if I had asked, pushed, you know, somebody might have helped me with that, but it definitely wasn't something that was kind of immediately apparent, how I could get support with that”

Participants indicated that they are interested and capable of pursuing OER for their courses independently. However, participants also expressed some discomfort, uncertainty or lack of knowledge around certain key aspects of OER development that go beyond subject matter expertise, such as Creative Commons licensing, copyright, software use and interactivity, accessibility, instructional design, and content integration best practice expertise. While some participants identified that these needs were or might be met by campus units or department-based independently hired contractors, there remained a sense that the time requirement to figure out these disparate pieces represented a distinct barrier. While some participants described how OER projects were able to move through these difficulties, it became clear that each barrier led to participant de-prioritization of OER work, which lengthened project timelines and was a source of participant demoralization. To address this issue, we recommend that institutions create a position to serve as the face of OER on campus. This OER Lead, perhaps best encapsulated in an Open Education Librarian role, serves as a single point of contact for instructors interested in OER, providing direct consultation and expertise on OER topics and best practice, and triage out to other campus support services as needed.

Conclusion

While the pandemic initiated increased interest in OER as higher education institutions shifted to online teaching approaches, this interest persists even as in-person teaching resumes. Instructors developed materials for use in their online teaching that have continued pedagogical value for in-person and blended instruction. In addition, more awareness of online and blended learning teaching approaches has made online education a more feasible direction for higher education institutions looking to expand their course offerings, especially for a student population that may have increased appetite for distance education options. OER remain a key resource for supporting online and blended learning, and for removing the various barriers for use that exist with traditional or commercial resources. This aligns the conversation around OER with movement toward equity, diversity, and inclusion as they can help faculty meet the needs of a greater cross-section of learners from more varied backgrounds. This white paper has identified key aspects of the OER landscape on campuses that may be used to analyze the current offerings and systems of supports within higher education institutions, as part of developing a plan to support OER uptake for enhanced strategic mobility.

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