

# Stakes and Stakeholders: Open Educational Resources—Framing the Issues

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College is still valuable, but more students are enrolling than graduating. According to a 2014 study by Complete College America that investigated the length of time for college graduation, the four-year degree is simply no longer the reality for most undergraduate students (Complete College America, 2014). The vast majority of students at U.S. public universities are completing their bachelor's degree in six years, and for students completing two-year associate's degrees at community colleges the average graduation rate is three years. On-time graduation rates account for only 36 percent of students completing four-year bachelor's degrees at flagship institutions.<sup>1</sup> This number drops to 19 percent for students completing four-year bachelor's degrees at non-flagship institutions, and drops as low as 5 percent for students completing a two-year associate's degree at non-flagship institutions. The same report also found that only 50 of the more than 580 public four-year institutions have graduation rates above 50 percent. This has resulted in more than 31 million students in the past two decades having attended a U.S. college but never earning a degree. The reality is that higher education costs too much, takes too long, and graduates far too few.

The rising cost of higher education poses a significant challenge to those who are interested in pursuing a degree, as students cannot access what they cannot afford. There has been a consistent increase in the cost

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<sup>1</sup> The phrase flagship institution may be applied to an individual school or campus within each state system. A flagship institution is the best-known institution in the state, often the first to be established, and frequently the largest and most selective, as well as the most research-intensive public universities.

of tuition in both the U.S.<sup>2</sup> and Canada,<sup>3</sup> and textbook costs have surpassed that rate of growth. According to a report conducted by the U.S. Government Accountability Office (2013), from 2002 to 2012, textbook prices rose on average 6 percent per year. The same report revealed that new textbook prices increased by a total of 82 percent during that same time period. This increase is significant, especially when compared to the 28 percent increase in overall consumer prices during the same time period.

When it comes to recommended student budgets versus actual student spending, a large discrepancy exists. The College Board ([www.collegeboard.org](http://www.collegeboard.org)) releases an annual report detailing a breakdown of student budgets for the academic year based on information received by their member institutions. According to their 2016 report, the U.S. average annual undergraduate student budget for books and supplies falls between \$1,200 and \$1,400.<sup>4</sup> The Financial Consumer Agency of Canada (n.d.) recommends that students should budget between \$800 and \$1,000 per year for textbooks and other course materials. However, according to the National Association of College Stores (NACS) (2016), average student spending on course materials is \$602, which represents a 14 percent decrease since 2007. This discrepancy is problematic as it indicates students are not purchasing the materials they are expected to. While one could conclude that students are finding cheaper ways to access their required materials, studies lead us to believe otherwise. A survey of 22,000 Florida students conducted by Florida Virtual Campus (2016) found that high textbook prices have a negative impact on academic behavior. Two thirds of students did not purchase the required textbook, more than one

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<sup>2</sup> The College Board has been documenting trends in higher education, including tuition and fees. More information on their findings is available here: [https://trends.collegeboard.org/sites/default/files/2017-trends-in-college-pricing\\_1.pdf](https://trends.collegeboard.org/sites/default/files/2017-trends-in-college-pricing_1.pdf)

<sup>3</sup> In the past decade, Statistics Canada has reported a tuition increase of 40 percent. More information on their findings is available here: <http://globalnews.ca/news/2924898/university-tuition-fees-rise-40-percent-in-a-decade/>

<sup>4</sup> The College Board has a membership of over 6,000 institutions and organizations in the United States and around the world.

third earned a poor grade as a result of not purchasing the textbook, and nearly one fifth failed a course as a result of not having access to the textbook. The same survey also showed that nearly half of students took fewer courses due to textbook costs while over one-in-four had dropped a course because of the associated textbook costs. The results of this survey are alarming, as they indicate that cost barriers are forcing students into making decisions that have negative impacts on their academic success.

## Textbook Affordability—Issues and Solutions

### *Market Changes*

It is important to understand how the textbook market operates to gain an understanding of why textbook costs have spiraled out of control. Unlike other markets where a product is desired and consumers may select which option they prefer, the textbook market is similar to the prescription drug market. Much like the relationship between a doctor and their patient, students are obliged to purchase the specific textbook(s) assigned by their instructor; regardless of how widespread the alternatives may be, students are expected to use a certain edition of the material. The burden on consumers is compounded by the fact that there are five major publishers that hold nearly 90 percent of the market; together they have the ability to regulate the price point at which textbooks are sold (Koch, 2013). Data published by the Bureau of Labor Statistics (BLS) has shown that textbook prices rose at over three times the rate of inflation from January 1977 to June 2015—a 1,041 percent increase (Popken, 2015). Publishers are effectively abusing the market and as a result, students are being priced out.

Another reason for escalating costs is the periodic release of new editions. Publishers have relied on producing newer editions to reduce the reuse of a specific text and effectively eliminate the resale market. With publisher representatives leading with the newest versions of materials when approaching faculty, these revised editions are typically the ones sought. In a discipline like mathematics where the content does not change frequently, it begs the question of how different the content between the two editions really is, as updated images and tables should not be justification for significantly increasing the cost of a resource. Additionally, for a faculty member faced with both time and resource constraints, a publisher's offer of a textbook coupled with lecture slides and test banks is incredibly compelling.

The bundling of learning resources is yet another tactic used by publishers to increase costs. New textbooks are often accompanied with an assortment of additional digital resources including study guides, homework assignments, and quizzes. These resources can be “unlocked” by students using an access code included in their textbook bundle. Instructors may recommend that students use these resources as supplemental learning materials, or assign their students online homework assignments and quizzes that contribute to their final grades. The inclusion of these online resources is used as justification for inflating prices, regardless of whether they are used by the student or not. Like many software licenses, these codes are tied to a single user and therefore have no resale value. Students purchasing used textbooks are obligated to purchase a new access code from the publisher to access the digital content, thereby negating much of the cost savings normally associated with purchasing used copies.

### *Going Digital*

As student spending on textbooks has decreased, publishers have felt the hit directly. In 2014, Brian Kibb, president of McGraw-Hill stunned many when he said, “Textbooks are dead. They’re dinosaurs” (Smith, 2014). In 2016 the world’s largest education publisher, Pearson, garnered a pre-tax loss of £2.6 billion (US\$3.3 billion), primarily due to the collapse of their U.S. higher education business (Sweeney, 2017). With a decline in print textbook sales—which is consistent with the NACS finding—there has been a major push from publishers to expand their digital offerings. Electronic versions of textbooks (eTextbooks) can be sold at a cheaper price point as this online delivery model allows publishers to save significant amounts of money on printing and distribution. The rental market for eTextbooks is another option put forward by publishers in an attempt to increase sales to students. Students are offered access to materials at a recognizably lower price; however, the catch is that students only have access to that resource for a limited period of time—usually the duration of the semester—eliminating any opportunity for retention while simultaneously eliminating contributions to the used textbook market.

Another popular approach has been through automatic purchasing programs that publishers are marketing as “Digital Direct” or “Inclusive

Access” (Straumsheim, 2017).<sup>5</sup> In these automatic purchasing programs, every student pays a mandatory course materials fee lower than the cost of a new hardbound version of the same text. While publishers collect less revenue per student, a consistent revenue stream is guaranteed for the duration of time outlined in the contract signed between the publisher and institution. The fee is charged directly to a student’s account, and an electronic version of the textbook and any supplementary materials is made available on a digital delivery platform. Depending on the contract, students may have the option to opt out, but the terms often used are restrictive and aimed at minimizing these numbers.<sup>6</sup> In other cases, students are charged directly regardless of their consent. This model holds numerous similarities to the access codes mentioned previously and hold the same concerns from both a 5Rs,<sup>7</sup> and a copyright and usage data perspective. Under these models, students are restricted from exercising the 5R permissions and it is also unclear who owns the copyright to the content created within the platform. While the student should retain ownership over the works they create, copyright may ultimately fall to the publisher. Further concerns surround publishers’ unfettered access to tracking student usage data on their platforms. While publishers may argue that this data will help build stronger platforms, this data could also be used to justify changes to the offerings that may hurt students.

The promise of more affordable textbooks and greater access may appeal to a higher education audience concerned about students lacking access to the resources necessary for academic success. But while digital content is currently being offered at a lower price point than print ver-

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<sup>5</sup> As this initiative is fairly new there has not been much published on the topic yet. This article is, currently, one of the most notable pieces available: <https://www.insidehighered.com/news/2017/01/31/textbook-publishers-contemplate-inclusive-access-business-model-future>

<sup>6</sup> In the United States, federal law stipulates that students must have the ability to opt out of such programs, however no such stipulations exist in Canada. Algonquin College, the first Canadian institution to pilot the eTexts model, does not allow students to opt out: <http://www.algonquincollege.com/etexts/texidium-faq/#optout>

<sup>7</sup> The 5 Rs are reuse, revise, remix, redistribute and retain. More information about the 5 Rs can be found here: <http://opencontent.org/definition/>

sions, publishers have been clear in their intent to transition towards digital;<sup>8</sup> and without the print textbook market helping with price regulation, the digital market would only be in competition with itself. As academic librarians have experienced the escalation of prices in the subscription journal market,<sup>9</sup> it could be assumed the same would happen in a textbook market dominated by a few major publishers.

While automatic purchasing programs may be one solution toward textbook affordability, open educational resources (OER) are freely available learning materials that have proven to be effective in serving students. Hilton (2016) explored the results of nine studies that examined the impact of OER on student learning outcomes in higher education settings. Across the studies, only one showed that the use of OER was connected with lower learning outcomes in more instances than it was with positive outcomes, and another showed that the majority of the classes analyzed had non-significant differences. Though these freely available materials that can be used, adapted, and shared to better serve all students exist in the marketplace, their use and adoption are not guaranteed. The intervention of larger government and civil society organizations may be necessary to shape market trends in favor of students.

### *The Role of Government*

Affordability issues in higher education have not gone unnoticed by the federal and state governments in the U.S. A growing number of government initiatives have encouraged and promoted the growth of OER as a means to curb textbook prices while also ensuring access to high-quality educational content. The 113th (2013–2014) and 114th Congress (2015–2016) introduced the Affordable College Textbook Act in an effort

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<sup>8</sup> Pearson's chief executive, John Fallon, was quoted saying "Education like every other sector and sphere of life is going through this digital transformation. There is going to be a big winner in the transformation in education. We are absolutely determined to make Pearson that winner." <https://www.theguardian.com/business/2017/feb/24/education-publisher-pearson-loss-us-penguin-random-house>

<sup>9</sup> The prices for many journal and database subscriptions has also been rising beyond the rate of inflation. Library Journal (<http://www.libraryjournal.com/>) publishes an annual Periodicals Price Survey that explores how the rising costs of periodicals impacts library budgets.

“to expand the use of open textbooks in order to achieve savings for students” (H.R.3721, 2015–2016). Language in the Act calls for new grant funding to support the creation of OER, especially for use in large-enrollment courses that have high textbook costs. It would also require that textbook publishers unbundle educational materials students are required to purchase (e.g. textbooks, lab manuals, online access codes) to help facilitate cost savings. The bill did not advance in the 113th and 114th Congress, but was reintroduced in the 115th Congress (H.R. 3840, 2017–2019) with hopes that it could reinvigorate discussion on these important issues.<sup>10</sup>

State legislation and initiatives addressing similar issues have been passed, including:

- Oregon House Bills 2871 (2015) and 2729 (2017), which provided “legislative investment” in addressing textbook affordability by creating a grant program for OER development, standardizing interinstitutional evaluation of student savings that resulted from OER, and formalizing collaborations between the stakeholders (e.g., faculty, staff, librarians, etc.) across Oregon (Oregon.gov, n.d.).
- Executive Order 2015-01K, signed by Ohio Governor John Kasich in 2015, established the Ohio Task Force on Affordability and Efficiency in Higher Education, which was charged with making recommendations on the ways that “state-sponsored institutions of higher education ... can be more efficient, offering an education of equal or higher quality while at the same time decreasing their costs” (Ohio-HigherEd.org, n.d.).
- SHB 6117, passed by the Connecticut Legislature in 2015, which charged the Board of Regents for Higher Education and the University of Connecticut to develop a pilot program for the development and promotion of open-source textbooks. It also established a task force charged with identifying ways to incentivize the creation and adoption of OER “that will significantly reduce the cost to students of course materials, including, but not limited to, offering financial or academic

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<sup>10</sup> The progress of bills through Congress can be tracked here: <https://www.govtrack.us/congress/bills/>

or professional credit to faculty to create open educational resources” (SHB 6117, 2015).

These Bills have been seen by many campus stakeholders as a step in the right direction to address textbook affordability issues. Because these government initiatives may not provide all of the funding needed to successfully pursue these goals, support has also been sought from the private sector.

### *Foundational Support*

Foundations have played a key role in supporting the creation, adoption and adaptation of OER. Since 2001, the William and Flora Hewlett Foundation has donated over \$170 million to support the development and expansion of the open movement (Jhangiani & Biswas-Diener, 2017). With a specific emphasis on OER, the Hewlett Foundation has played a crucial role in backing early initiatives such as MIT OpenCourseWare, the Institute for the Study of Knowledge Management in Education (ISKME) (<http://www.iskme.org/>), OER Commons (<https://www.oercommons.org/>), and supported the development of Creative Commons (CC). Other foundations that have provided financial support for the development and promotion of OER include (but are not limited to) the Laura and John Arnold Foundation (<http://www.arnoldfoundation.org/>), the Shuttleworth Foundation (<https://www.shuttleworthfoundation.org/>), and the Bill and Melinda Gates Foundation (<https://www.gatesfoundation.org/>).

Funding provided by these organizations has gone beyond supporting the creation of OER to include financial support for organizations and their projects such as the Open Textbook Network (<http://research.cehd.umn.edu/otn/>), Achieving the Dream’s OER Degree Initiative (<http://achievingthedream.org/resources/initiatives/open-educational-resources-oer-degree-initiative>), and the Scholarly Publishing and Academic Resources Coalition’s (SPARC) Open Education program (<https://sparcopen.org/open-education/>). Collectively, these organizations provide a variety of valuable services to the community, including education, leadership development, community-building, policy work, and large-scale OER adoption.



### *Grassroots Action by Users*

On campuses across the U.S. and Canada, student groups have been inspired to take action and advocate for OER. The U.S.-based Student Public Interest Research Groups (PIRG) (<http://www.studentpirgs.org/>) sparked the textbook affordability conversation back in 2003 and started advocating for open textbooks in 2008. Through the utilization of their grassroots organizing network and campus chapters, the Student PIRG has coordinated a number of successful education and advocacy campaigns surrounding open textbooks. At U.S. universities, student groups have organized educational events on OER and have been the driving force behind the creation of multiple OER grant programs.<sup>11</sup> Students at Canadian universities have played key roles in influencing institutional OER commitments, including the creation of an OER grant program,<sup>12</sup> the establishment of a university-wide OER network,<sup>13</sup> and the recognition of OER contributions in faculty tenure and promotion.<sup>14</sup> Student leaders have recognized that their peers cannot learn from textbooks that they cannot afford, and have therefore been advocating for greater adoption of OER that are high quality, well aligned with the content they are evaluated on, and are accessible at low or no cost.

Other members of the higher educational community, including faculty, librarians, and administrators, have also worked to raise awareness on textbook affordability issues and the use of OER.<sup>15</sup> Faculty and early career academics have been critical in producing OER research through

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<sup>11</sup> Information on the Rutgers University Library Open and Affordable Textbooks Project can be found here: <http://www.libraries.rutgers.edu/open-textbooks>; and the University of Connecticut Open and Affordable Initiative here: <http://open.uconn.edu/faculty-incentives-2/>

<sup>12</sup> Information on the Simon Fraser University Library OER Grants program can be found here: <https://www.sfu.ca/oergrants.html>

<sup>13</sup> More information can be found here: <https://www.ucalgary.ca/open/>.

<sup>14</sup> The University of British Columbia's Guide to Reappointment, Promotion and Tenure Procedures at UBC can be found here: <http://www.hr.ubc.ca/faculty-relations/files/SAC-Guide.pdf>

<sup>15</sup> The SPARC website provides a tool that allows users to search for OER educational efforts being offered in North America: <https://connect.sparcopen.org/filter/events/>

their involvement in OER fellowship programs.<sup>16, 17</sup> Their research has ranged from assessing OER perception and efficacy to sustainability and student success. Librarians often provide guidance and support to faculty looking to learn about, find, and integrate OER into their classrooms.<sup>18</sup> Administrators have provided financial support to develop grant programs that support faculty in replacing their commercial textbooks with OER and in championing OER degree programs at their institutions.<sup>19</sup>

While many steps still need to be taken in raising OER awareness, grassroots action led by students, librarians, faculty, and campus administrators have laid a strong foundation to build upon.

### *OER Repositories and Open Textbook Libraries*

OER are only useful if they can be found by those looking to use them. Over the years, various repositories that boast diverse collections of learning materials have been developed to allow for the collection and curation of OER and to help facilitate their ease of discovery by faculty. One of the largest of these OER repositories is the Multimedia Educational Resource for Learning and Online Teaching (MERLOT) (<https://www.merlot.org/merlot/index.htm>), a California State University program dating back to 1997. The MERLOT collection comprises over 40,000 OER spanning over 22 different material types.<sup>20</sup> Ranging in both size and scope, MERLOT includes everything from entire online courses to a single animation. OER Commons—a project of ISKME—is another large repository that consists of a digital public library and collaboration platform. Built with the intent to assist knowledge management and educational innovation,

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<sup>17</sup> The Open Education Group recruits faculty members and early career academics to produce research on OER. More information on the program can be found here: <http://openedgroup.org/people>

<sup>18</sup> Examples of these efforts include but are not limited to workshops, one-on-one consultations, and informational websites.

<sup>19</sup> Dr. Daniel T. DeMarte, Vice President for Academic Affairs and Chief Academic Officer at Tidewater Community College, is recognized as having been a principal lead in the implementation of their Z-Degree initiative. More information is available here: <https://www.tcc.edu/academics/degrees/textbook-free>

<sup>20</sup> A full listing of materials types with definitions can be found here: [http://info.merlot.org/merlohelp/index.htm#merlot\\_collection.htm](http://info.merlot.org/merlohelp/index.htm#merlot_collection.htm)

OER Commons offers a comprehensive infrastructure for curriculum experts and instructors at all educational levels, though especially those teaching K–12, to identify high-quality OER and collaborate around their adaptation, evaluation, and use.

Open textbook libraries, on the other hand, host an array of ready-to-adopt resources that can be seamlessly used in place of a traditional textbook. There are multiple OER repositories and open textbook libraries that boast diverse collections of learning materials. Arguably the most recognized materials come from OpenStax (<https://openstax.org/>), a nonprofit open textbook publisher based out of Rice University. OpenStax began as Connexions—a platform that provides authors and scholars with an open space where they can share and freely adapt educational materials such as courses, books, and reports. Now known as OpenStax CNX, this platform has developed into a dynamic nonprofit digital ecosystem, serving millions of users per month in the delivery of educational content to improve learning outcomes. The platform hosts tens of thousands of learning objects in a host of disciplines. Meanwhile, OpenStax has developed 27 peer-reviewed open textbooks for the most-attended college courses and several AP courses. Since 2012, OpenStax has saved nearly 3.5 million students an estimated \$340 million and is on track to meet or beat its goal of saving students \$500 million by 2020 (OpenStax, 2017). They’ve also started developing their own research-based learning technology, OpenStax Tutor.

The University of Minnesota Open Textbook Library (<https://open.umn.edu/opentextbooks/>), the BCCampus Open Textbook Project (<https://open.bccampus.ca/find-open-textbooks/>), Lumen Learning’s Catalog (<https://courses.lumenlearning.com/catalog/lumen>), and eCampus Ontario’s Open Textbook Project (<https://openlibrary.ecampusontario.ca/find-open-textbooks/>) are other well-known open textbook libraries hosting hundreds of open textbooks that can be integrated into instruction. The majority of materials from these collections have been peer-reviewed and are already in use at numerous higher education institutions.

## Perspectives on the Current State of OER

The OER movement has been shaped by the evolving higher education

landscape, including textbook market changes, governmental directives, foundational support, and grassroots advocacy efforts. These factors also influence the current state of the movement, which can be interpreted from the perspective of various users, including librarians, faculty, students, and administrators.

## Librarian Perspectives on OER

Key action areas identified by the American Library Association (ALA) (American Library Association, n.d.) include (but are not limited to):

- Education and lifelong learning;
- Equitable access to information;
- Intellectual freedom; and
- Literacy.

It should therefore come as no surprise that librarians have emerged as key leaders in the OER movement, as many of the defining characteristics of OER directly address these action areas. The retention of OER allows a user the ability to utilize the material in the present, but also reference it in the future, making OER a tool to support lifelong learning. Because OER are made freely available to the public, they help promote equitable access to information: cost no longer acts as a barrier. Being able to revise and customize an OER resource to address specific learning needs helps support intellectual freedom and literacy.

Academic librarians have taken on a large role in promoting OER to faculty and students on their campuses. Examples of these efforts include but are not limited to:

- Providing workshops and other educational activities that help raise awareness of OER.
- Creating and maintaining websites that include information about OER and links to OER repositories and libraries.
- Helping to coordinate and administer grant programs that promote the integration of OER into class instruction.
- Providing faculty and students with assistance in finding quality resources such as magazine and newspaper articles, scholarly publications, and video recordings that supplement OER.

Some academic libraries have created OER Librarian positions that focus on promoting the creation, use, and adoption of OER on their campuses. However, these responsibilities often fall on librarians who are also teaching, providing reference services, or working in other library departments, who need to balance these new responsibilities with their current job duties. At some small institutions with few librarians on staff, this can be especially challenging. However, this challenge provides an opportunity for librarians to partner with other groups on campus to provide information about OER to faculty and students. Libraries often house writing and tutoring centers or liaise with other academic departments, providing research guidance and support to faculty and bibliographic instruction sessions for students. Librarians can utilize their relationships with these groups to help promote OER to their campus community, and are also well situated on campus to coordinate group efforts aimed at supporting teaching and learning.

### *Faculty Perspectives on OER*

When it comes to OER adoption, faculty awareness is critical. According to a 2016 study conducted by the members of the Babson Survey Research Group, when faculty members were asked to self-report their level of awareness of OER, a majority (58%) said that they were generally unaware of OER, while only a quarter (26%) of respondents identified themselves as being aware or very aware (Allen et al. 2016). This is comparable to the 2015 results, where the number of faculty reporting no awareness was two thirds (66%) of respondents, while those who identified as being aware or very aware sat at one fifth (20%) (Allen et al. 2014). Therefore, there has been an increase in awareness. The 2016 study also asked about faculty members' awareness of open textbooks. The results showed that 34 percent of faculty claimed some level of awareness of open textbooks, while 15 percent of faculty reported that they were only somewhat aware, and nearly two thirds of faculty (66%) reported that they were generally unaware of open textbooks (Allen et al. 2016). Increased discoverability may prove useful as people become more aware of OER, but some positive developments have already been found in high-impact courses. Open textbook publishers like OpenStax and BCcampus have built collections aimed at achieving the highest return on investment and as such, these ready-

to-adopt resources continue to gain traction across high-enrollment first- and second-year courses.

In a 2013 study in which researchers examined student and instructor perceptions of open textbook adoption at eight post-secondary institutions in the U.S., Bliss et al. found that 90 percent of instructors indicated that their students were equally (60%) or more prepared (30%), compared to students taught in previous semesters. This may be due to the fact that OER are available at no cost to the student and can be accessed immediately. Another possible reason is that the material has been better curated to meet their learning needs. The same study also found that of the 490 students surveyed, 90 percent indicated that the open textbooks used in their courses were of the same quality as traditional materials (50%) or better (40%). Interested in observing whether or not student perception, use, and impact of open textbooks was similar in the Canadian context, Jhangiani and Jhangiani (2017) surveyed 320 post-secondary students enrolled in courses that used an open textbook. Their study found that 63 percent of students judged the open textbook to be above average (36%) or excellent (27%), while an additional 33 percent of students found it average. Less than 4 percent of students surveyed indicated that the open textbook was below average. In recognition of the fact that the overwhelming majority of students were satisfied with the quality of their open textbooks, and that each of these students were able to save money that would have otherwise been spent on course materials, it should come as no surprise that students are increasingly drawn to the promise of OER.

One area of interest for faculty exploring the teaching and learning opportunities associated with OER is open pedagogy. Conversation surrounding open pedagogy (as understood in this context) began with a blog post<sup>21</sup> written by David Wiley in 2013. In this post he wrote about open pedagogy and his distaste for the “disposable assignment”.<sup>22</sup> Looking for

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<sup>21</sup> This post covers the basic concepts of the open pedagogy movement: <https://opencontent.org/blog/archives/2975>

<sup>22</sup> A “disposable assignment” can be understood as a closed homework process in which the content created is only viewed by a student author and faculty grader. Wiley argues that these types of assignments “suck value out of the world”. More information is available here: <https://opencontent.org/blog/archives/2975>

an alternative approach to assigning coursework which incorporated his desire to have students' assignments add value to the world, Wiley proposed examples of open pedagogy. While open pedagogy lacks a universal definition, DeRosa et al. (2017) understand the term as "a site of praxis, a place where theories about learning, teaching, technology and social justice enter into a conversation with each other and inform the development of educational practices and structures". The application of the term 'open' as understood in 'open licenses' has given way to a dynamic and innovative approach to teaching and learning. Leaders in this space such as DeRosa and Robinson (2015) stress the value of having students interacting with OER as part of course instruction:

If we think of OER as just free digital stuff, as product, we can surely lower costs for students; we might even help them pass more courses because they will have reliable, free access to their learning materials. But we largely miss out on the opportunity to empower our students, to help them see content as something they can curate and create, and to help them see themselves as contributing members to the public marketplace of ideas. Essentially, this is a move from thinking about [OER] as finished products to thinking about them as dynamic components of our pedagogical processes. When we think about OER as something we do rather than something we find/adopt/acquire, we begin to tap its full potential for learning.

With new programming<sup>23</sup> and resources<sup>24</sup> to explore digital pedagogy being developed and a greater number of educators understanding the broad ranging benefits of open pedagogy, including the learning benefits for students, knowledge reception and creation is venturing down an exciting path.

### *Student Perspectives on OER*

Students may find cost savings and immediate access to be obvious benefits of OER. According to Jhangiani and Jhangiani (2017), when students were asked to rate the importance of the features of their open textbook, 68 per-

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<sup>23</sup> The Digital Pedagogy Lab hosted two Digital Pedagogy Labs in 2017. More information is available here: <http://www.digitalpedagogylab.com/>

<sup>24</sup> The Rebus Community has produced a new resource exploring how to make open textbooks with students available here: <https://press.rebus.community/makingopentextbookswithstudents/>

cent rated cost savings as being very important (30%) or absolutely essential (38%), while nearly 70 percent indicated that immediate access was very important (36%) or absolutely essential (34%). Students face a number of barriers to accessing a quality education and with OER, textbook costs are not one of them. The prospect of textbook costs no longer contributing to rising student debt is incredibly compelling, especially considering that the average U.S. class of 2016 graduate finished their degree with a debt of \$37,172 (U.S. Student Loan Debt Statistics for 2017, 2017). Beyond cost savings, students are also able to retain these materials forever. Whether students can benefit from using a specific text for multiple courses throughout their education or are interested in referring to a text far into the future, OER grant students this flexibility.

### *Administrator Perspectives on OER*

Recognizing that many colleges and universities are under immense pressure to maintain their enrollment numbers amidst declining state funding, rising criticism, and stiff competition, administrators at a handful of institutions have begun to recognize OER as a means to their desired ends. When it comes to the learning materials being used in the classroom, all stakeholders, especially institutional administrators, want the resources used by teachers and students to meet their needs. A 2015 study conducted by Fischer, Hilton, Robinson, and Wiley analyzed whether the adoption of digital open textbooks significantly predicted students' completion of courses, class achievement, and enrollment intensity during and after semesters in which OER were used. When analyzing course grades, the study found that students using OER did the same or better when compared to those using traditional materials. The same study also found that students in courses using OER enrolled in a significantly higher number of credits in the next semester, meaning that OER propelled students closer to graduation. From the perspective of an administrator concerned with enrollment and graduation rates, the value of greater OER adoption is clear.

## Challenges and Opportunities

### *Challenges*

While the challenge of the publishing industry has already been addressed, there are other practical barriers limiting the widespread adoption of OER



including their creation, adaptation, and adoption. These challenges span both those within and beyond the institution.

**OER Development and Maintenance.** Creating an OER is a time-intensive undertaking. Knowledgeable and reputable authors must be identified, and be available to commit to the development of an OER. Some OER are developed by groups, including classes, programs, and professional organizations. This option may help facilitate the speed with which an OER is created, but requires greater oversight in quality control. While OER are marketed as being free of cost to the consumer, it is important to recognize that there are costs associated with their creation. These costs can include but are not limited to honoraria for authors, “buy-outs” of faculty time for writing and compiling OER, and accessing platforms. To date, OER creation has primarily been funded by private foundations and government agencies. However, there is no guarantee that this funding will continue in perpetuity. Like any textbook or learning resource, OER must be updated on a regular basis to ensure its relevance. If sustainability is not considered during the creation of the resource, it may become outdated. Fortunately, because of the open license applied to the work, the work’s revision and therefore future relevance is not solely reliant on the initial creator.

**Adoption of OER Resources.** In addition to the faculty awareness issues covered previously, the actual adoption of OER can also pose challenges. Bliss, Hilton, Wiley, and Thanos (2013) found that the time spent by an instructor using the material for the first time is one cost often not calculated into the use of open textbooks. Their report indicated that 82 percent of surveyed faculty spent somewhat more or much more time preparing to teach in that semester compared to others. This is a finding worth noting, as adopting an OER may not be as easy as selecting a traditional textbook bundled with ancillary materials. While open textbook publishers are working to proactively address this issue, not all open textbooks have easily identifiable ancillaries.

**Access to Digital OER.** As most OER are digital, a device and a stable internet connection are required to access them. However, there is a disparity in North America among those who have access to the technology and infrastructure needed to access the internet and those who do not. Often referred to as the “digital divide,” many factors can impact who is

able to access the internet in the U.S., including income,<sup>25</sup> race,<sup>26</sup> and geographical location.<sup>27</sup> Challenges associated with the digital divide are not unique to the United States. According to a 2016 report published by the Canadian Radio-television and Telecommunications Commission (CRTC), there is a disparity in the speed of service offered in rural and urban environments, and “urban households generally [pay] lower Internet service prices and [have] a greater number of Internet service providers to choose from than rural households” (Canadian Radio-television and Telecommunications Commission, 2016). OER that are highly functional in print format, such as OpenStax materials, provide a solution, but not a fix, to these digital divide issues. However, providing access to OER materials could be used as an argument to help advocate for the resolutions of the digital divide in North America.

**Accessibility Considerations.** According to the World Bank (2017) “one billion people, or 15% of the world’s population, experience some form of disability, and one-fifth of the estimated global total, or between 110 million and 190 million people, experience significant disabilities.” Those with visual, hearing, mobility, and learning disabilities can have trouble accessing the internet in general. Even with tools and technology that help facilitate internet access, if the resources they find online, including OER, do not have accessible design components they may be unable to use them. “Accessible design is a design process in which the needs of people with disabilities are specifically considered” (Center for Universal

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<sup>25</sup> Those living in poverty often finding it difficult to pay for internet services and the technology needed to access the internet. “Americans with family incomes between \$75,000 and \$99,999 per year adopted the Internet at an 83 percent rate, compared to 80 percent of those reporting income between \$50,000 and \$74,999, and 70 percent of those in the \$25,000 to \$49,999 range” (Carlson, 2016).

<sup>26</sup> Carlson (2016), citing U.S. National Telecommunications and Information Administration (NTIA) research, reports that “78 percent of Whites nationally used the Internet in 2015, compared to 68 percent of African Americans and 66 percent of Hispanics. In rural areas, 70 percent of White Americans had adopted the Internet, compared to 59 percent of African Americans and 61 percent of Hispanics.”

<sup>27</sup> According to research performed by NTIA, “in 2015, 69 percent of rural residents [reported] using the Internet, versus 75 percent of urban residents” (Carlson, 2016).

Design in Education, 2015). Common examples of accessible design include captioning videos and formatting text documents so that they can be read by screen readers. Some creators have considered accessible design practices when developing OER and, as a result, their works can be readily utilized by those with visual, hearing, and learning disabilities. While OER do not universally possess accessible design components, the open license applied to the work allows for them to be revised to better serve all students.

**Openwashing.** With the increase in popularity of OER, openwashing is a problem that is on the rise.<sup>28</sup> Similar to the rise of greenwashing as a response to the environmental movement,<sup>29</sup> publishers and other education companies are moving forward with practices that appear or are marketed as “open” or “OER” but fail to adhere to the free plus 5R permissions we expect. These practices confuse people’s understanding of open and OER, and reinforce the need for the OER community to better communicate open.

### *Opportunities*

While challenges persist, the OER community has done a terrific job building the foundation necessary to support emerging projects and initiatives. Recognizing the massive success of the “Z-Degree” program at Tidewater Community College, in 2016 Achieving the Dream announced their OER Degree Initiative, which seeks to establish zero textbook cost degree programs at 38 community colleges across 13 U.S. states over the next three years. In the same year, the California Governor’s office also announced \$5 million in funding to support Z-degrees within the state and in 2017 BCcampus opened their call for proposals for Canada’s first “Zed Cred”. With community colleges serving student populations from lower income backgrounds, we can see firsthand how OER is being used as a tool to address important issues of equity in education.

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<sup>28</sup> The term openwashing originates from a blog post written by Audrey Watters. The post is available here: <http://hackededucation.com/2015/01/16/what-do-we-mean-by-open-education>

<sup>29</sup> More information on greenwashing is available here: <http://www.investopedia.com/terms/g/greenwashing.asp>

Advances in the OER movement have not been restricted to the community college level. In 2017, New York Governor Cuomo announced a commitment of \$8 million to expand OER use at the City University of New York and State University of New York systems.<sup>30</sup> Supported by organizations across the OER community, the impacts of New York's leadership on OER will not be confined to state borders. Another 2017 announcement came from Lumen Learning and Follett, who announced a partnership aimed at increasing faculty access to OER at over 1,200 U.S. institutions.<sup>31</sup>

Noticing the pace at which the OER community has grown, key organizations have been collaboratively developing programming to respond to the needs of the community. Creative Commons is developing a professional development opportunity aimed at providing a thorough CC education through their Certificate program (<https://certificates.creativecommons.org/>). Offering four learning pathways including a specialized track for academic librarians, these open courses are being built to be adaptable to any delivery mode. In an effort to share and discover information about OER activities at campuses across North America, SPARC has developed Connect OER ([https://connect.sparcopen.org](https://connect.sparcopen.org/)). Through Connect OER, academic libraries can sign up to maintain a profile page about their institution's efforts on OER, with the data used to populate a searchable directory and annual report identifying best practices and highlight collective impact being achieved. Connect OER is aimed at supporting campus action, regardless of an institution's familiarity with OER. Yet another notable initiative is the Peer Review Working Group (<https://about.rebus.community/category/working-groups/>) led by the Rebus Community. Identifying the need to establish a standardized process for reviewing open textbooks, Re-

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<sup>30</sup> An overview and commentary on this announcement published by Carl Straumsheim, writing for Inside Higher Ed, can be found here: <https://www.insidehighered.com/news/2017/04/14/cuny-suny-plan-major-expansion-oer-efforts>

<sup>31</sup> Carl Straumsheim, writing for Inside Higher Ed, offers his summary and thoughts on this announcement here: <https://www.insidehighered.com/news/2017/04/18/follett-lumen-learning-announce-oer-partnership>

bus has brought together stakeholders across the OER community to help develop a collaborative and clear approach for open textbook review.

Other opportunities for promoting and expanding the use of OER can be found in increased education and advocacy efforts on campus. Providing forums for librarians, faculty, students, and administrators to discuss textbook affordability issues can help in formulating individual and collective action. Providing learning opportunities, including where to find OER, and how they can enable innovative pedagogy, can also help increase awareness and adoption of OER. Librarians, faculty, students, and campus administrators should continue to work with members of state and federal government to help pass legislation that promotes and funds the creation of OER. Foundational partnerships can also continue to provide opportunities to advance OER issues and initiatives. The current relationships the educational community has with funding organizations like the Hewlett Foundation will hopefully serve as an inspiration to others to help support the OER movement.

## Conclusion

OER improves teaching and learning through practices enabled by content that is freely available to download, edit, and share. Stakeholders ranging from the individual to institutional level have recognized the tremendous potential of OER and have committed to a series of robust policies and practices to increase their adoption, adaptation, and creation. Although it is difficult to predict the future of the OER movement, there are plenty of reasons to be optimistic. Much will depend on how the OER community—including stakeholders from within higher education institutions, government, and civil society organizations—respond to the challenges and opportunities that present themselves. While stakeholders from a range of different backgrounds have stepped up to the plate, academic librarians perhaps have the greatest potential to emerge as leaders in this space. Supported by organizations like SPARC and the Open Textbook Network, and informed by their experiences interacting with publishers, faculty, teaching and learning centers, and students, librarians are in a strong position to help grow this movement. Combined with their knowledge of digital rights management and copyright, the potential for librarians to both lead and work alongside fellow impassioned stakehold-

ers is undeniable. As OER are on a trend towards mainstream adoption levels across first- and second-year courses in higher education,<sup>32</sup> we are beginning to see the degree to which OER can improve higher education. With an expansive network of libraries, institutions, and civil society organizations championing OER across the continent, together we can ensure that the future of OER remains bright.

## References

- Affordable College Textbook Act, H.R. 3538, 113th Cong., 1st Sess. (2013–2014).
- Affordable College Textbook Act, H.R. 3721, 114th Cong., 1st Sess. (2015–2016).
- Affordable College Textbook Act, H.R. 3840, 115th Cong., 1st Sess. (2016–2017).
- Allen, I. E., Seaman, J. (2014) *Opening the Textbook: Educational Resources in U.S. Higher Education, 2014*. Babson Park, Massachusetts: Babson Survey Research Group. Retrieved from <https://www.onlinelearningsurvey.com/reports/openingthecurriculum2014.pdf>
- Allen, I. E., Seaman, J. (2016) *Opening the Textbook: Educational Resources in U.S. Higher Education, 2015-16*. Babson Park, Massachusetts: Babson Survey Research Group. Retrieved from <https://www.onlinelearningsurvey.com/reports/openingthetextbook2016.pdf>
- American Library Association. (n.d.). About ALA. Retrieved from <http://www.ala.org/aboutala/>.
- Bliss, T., Hilton J., III, Wiley, D., & Thanos, K. (2013). The cost and quality of online open textbooks: Perceptions of community college faculty and students. *First Monday*, 18(1). doi: <http://dx.doi.org/10.5210/fm.v18i1.3972>
- Canadian Radio-television and Telecommunications Commission (2016). Communications Monitoring Report. Retrieved from <https://crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2016/cmr.pdf>.
- Carlson, E. (2016). *The state of the urban/rural digital divide*. Retrieved from <https://www.ntia.doc.gov/blog/2016/state-urbanrural-digital-divide>
- Center for Universal Design in Education. (2015). *What is the difference between accessible, usable, and universal design?* Retrieved from <http://www.washington.edu/doit/what-difference-between-accessible-usable-and-universal-design>
- College Board. (2016). *Trends in college pricing 2016*. Retrieved from [https://trends.collegeboard.org/sites/default/files/2016-trends-college-pricing-web\\_1.pdf](https://trends.collegeboard.org/sites/default/files/2016-trends-college-pricing-web_1.pdf)
- Complete College America. (2014). *Four-year myth*. Retrieved from <https://completecollege.org/wp-content/uploads/2017/05/4-Year-Myth.pdf>

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<sup>32</sup> In the US alone, 1.5 million college students are expected to save an estimated \$145 million in the 2017–2018 academic year by using materials from the OpenStax collection. More information available here: <http://news.rice.edu/2017/08/10/nearly-1-5-million-college-students-to-use-free-textbooks-this-school-year/>

- Conn. H.R. H.B. 06177. *An act concerning the use of digital open-source textbooks in higher education, 2015*. Retrieved from <https://www.cga.ct.gov/2015/fc/2015HB-06117-R000823-FC.htm>
- DeRosa, R. & Jhangiani, R. (n.d.). *Open Pedagogy*. Retrieved from <http://openpedagogy.org/open-pedagogy/>
- DeRosa, R. & Robinson, S. (2015). Pedagogy, technology, and the example of open educational resources. *EDUCAUSEreview*. Retrieved from <http://er.educause.edu/articles/2015/11/pedagogy-technology-and-the-example-of-open-educational-resources>
- Financial Consumer Agency of Canada. (n.d.). *Budgeting for student life*. <https://www.canada.ca/en/financial-consumer-agency/services/budget-student-life.html>
- Fischer, L., Hilton, J., III, Robinson, T.J., and Wiley, D. (2015). A multi-institutional study of the impact of open textbook adoption on the learning outcomes of post-secondary students. *Journal of Computing in Higher Education* 27:159. doi:10.1007/s12528-015-9101-x
- Florida Virtual Campus. (2016). *2016 student textbook and course materials survey*. Retrieved from: <https://dls.flvc.org/documents/210036/361552/2016+Student+Textbook+Survey.pdf/fa58795e-f2d3-4fc7-9f07-a7e1b31fbbcd>
- Hilton, J., III. (2016). Open educational resources and college textbook choices: a review of research on efficacy and perceptions. *Educational Technology Research and Development*, 64(4), 573–590. Retrieved from <https://link.springer.com/article/10.1007/s11423-016-9434-9>
- Jhangiani, R., & Biswas-Diener, R. (2017). *Open: The philosophy and practices that are revolutionizing education and science*. London: Ubiquity Press.
- Jhangiani, R. S., & Jhangiani, S. (2017). Investigating the perceptions, use, and impact of open textbooks: A survey of post-secondary students in British Columbia. *The International Review of Research in Open and Distributed Learning*, 18(4).
- Koch, J. V. (2013). *Turning the page*. Lumina Foundation.
- National Association of College Stores. (2016). Cost sensitive students are spending less on course materials. Retrieved from <https://www.nacs.org/advocacynewsmedia/pressreleases/tabid/1579/ArticleID/463/Cost-Sensitive-Students-are-Spending-Less-on-Course-Materials.aspx>
- OhioHigherEd.org. (n.d.). Affordability & efficiency. Retrieved from <https://www.ohiohighered.org/affordability-efficiency/task-force>
- OpenStax. (2017). Retrieved from <http://news.rice.edu/2017/08/10/nearly-1-5-million-college-students-to-use-free-textbooks-this-school-year/>
- Oregon.gov. (n.d.) *Open educational resources*. Retrieved from <https://www.oregon.gov/HigherEd/Pages/oer.aspx>
- Popken, B. (2015, August 6). College textbook prices have risen 1,041 percent since 1977. *NBC News*. Retrieved from <http://www.nbcnews.com/feature/freshman-year/college-textbook-prices-have-risen-812-percent-1978-n399926>
- Smith, F. D. (2014). EDUCAUSE 2014: Publisher says ‘textbooks are dead,’ and adaptive learning is rising from the ashes. *EdTech*. Retrieved from <https://edtechmagazine.com/higher/article/2014/10/educause-2014-publisher-says-textbooks-are-dead-and-adaptive-learning-rising-ashes>

- Straumsheim, C. (2017). Is 'inclusive access' the future for publishers? *Inside Higher Ed*. Retrieved from <https://www.insidehighered.com/news/2017/01/31/textbook-publishers-contemplate-inclusive-access-business-model-future>
- Sweney, M. (2017). Education publisher Pearson reports biggest loss in its history. *The Guardian*. Retrieved from <https://www.theguardian.com/business/2017/feb/24/education-publisher-pearson-loss-us-penguin-random-house>
- U.S. Government Accountability Office. (2013). *COLLEGE TEXTBOOKS: Students have greater access to textbook information* (GAO-13-368). Retrieved from <http://www.gao.gov/assets/660/655066.pdf>
- U.S. Student Loan Debt Statistics for 2017. (2017, May 17). Retrieved June 15, 2017, from <https://studentloanhero.com/wp-content/uploads/Student-Loan-Hero-2017-Student-Loan-Statistics.pdf>
- Wiley, D. (2013, October 21). What is open pedagogy? [Blog post]. Retrieved from <https://opencontent.org/blog/archives/2975>
- World Bank. (2017). Disability inclusion. Retrieved from [www.worldbank.org/en/topic/disability](http://www.worldbank.org/en/topic/disability)