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White Paper: OER Adoption Study: Using Open Educational Resources in the College Classroom

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Executive Summary

Signed into law in September 2012, SB 1052 (Steinberg, 2012) specified that the California Open Education Resources Council ("CA-OERC") be established under the administration of the Intersegmental Committee of Academic Senates ("ICAS") of the University of California ("UC"), the California State University ("CSU"), and the California Community Colleges ("CCC"). CA-OERC was duly assembled and held its first meeting in January 2014. Representing 145 campuses across the three public systems of higher education, the CA-OERC initially set out to survey 10,000 UC[1], 24,000 CSU[2], 59,000 CCC[3] full-time, part-time, and temporary faculty about their awareness, adoption, and use of Open Educational Resources ("OER") textbooks.[4]

Based on the survey responses, the CA-OERC identified several impediments to adopting OER textbooks and concluded that rigorous peer review was ultimately the first step towards advocating for adoption of OER textbooks. The Council quickly identified 50 highly-enrolled courses with expensive textbooks across the three public systems of higher education and, over the following two years, collected more than 160 existing OER textbooks for these courses, established a rigorous peer review process, recruited faculty reviewers from the three systems, managed more than 450 reviews, and helped to curate the resulting high-quality, peer-reviewed collection of OER textbooks at COOL4ED, an online repository featuring reviews and case studies. Throughout, the CA-OERC's work was supported by State monies, as well as grants from the Gates Foundation and Hewlett Foundation secured and administered by the CSU Chancellor's Office.

In addition to supplying OER textbooks for California university and college faculty and students to consider, the Council undertook several research efforts to understand OER awareness, adoption, and use. These included: intensive feedback -- via surveys, webinars, and e-portfolios -- from a cohort of 16 CCC and CSU faculty who adopted OER in their Fall 2015 Semester courses (students in these classes were also surveyed); focus groups, composed of CCC and CSU faculty, which explored barriers to OER adoption and strategies for increased adoption; an additional set of focus groups, comprised of CCC and CSU student leaders, which focused on how these students used OER and e-textbooks in their courses.

Findings from CA-OERC's research indicate that in terms of:

- **Quality:** Most faculty were highly positive about all aspects of textbooks that they selected to adopt for this study. Ratings for subject matter, design of chapter(s) and use of editorial conventions were very high. For the most part, faculty felt that the OER

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[1] UC full time/tenured/tenure-track/part-time faculty numbers derived from
http://legacy-its.ucop.edu/uwnews/stat/headcount_fte/oct2015/er1toth.PDF
[2] CSU full time/tenured/tenure-track/part-time faculty numbers derived from
http://www.calstate.edu/csufacts/2015Facts/documents/facts2015.PDF
[3] CCC full time/tenured/tenure-track/temporary faculty numbers derived from
http://datamart.cccco.edu/Faculty-Staff/Staff_Demo.aspx
[4] For the purposes of this study and the CA-OERC's work in general, any digital textbook that is freely available to students is considered an OER textbook.

materials were thorough and complete and that students learned as well with the OER materials as with the traditional textbook for the class. Seven faculty of sixteen felt that the OER textbook was superior to the traditional textbook for the course. Five faculty rated the OER as equivalent to the traditional textbook. More than three-quarters of students (77%) said the OER chapter(s) used in the study met their expectations. (3% said OER did not meet expectations and 20% were neutral.)

- **Pedagogy:** Fourteen faculty reported that using the OER textbook chapter(s) encouraged them to reflect about their teaching practices.

- **Technological issues:** Faculty found it easy to explain how to use the OER textbook chapter(s) and had very few technical problems with students accessing the materials.

- **Ancillary materials:** Faculty were not as positive about the support materials (PowerPoints, test banks) available with the OER textbooks. Half of the faculty felt that the support materials lacked quality. 25% of faculty felt that implementing the support materials took a significant amount of time.

- **Student access:** Of the 351 students in the survey, 71 printed the textbook. A PDF was used by 209 students. 16% of students wanted to have the option to purchase a printed copy of the textbook from the bookstore for a small fee. 10% of students wanted to print the textbook themselves. The predominant platform for reading electronic textbooks ("e-textbooks") is a laptop computer. Only 7 of 351 students reported reading from their cell phones.

As California's OER textbook initiative enters a new phase (with passage of AB 798 [Bonilla] in 2015), more research will be needed to further understand and support OER textbook adoption and use on a massive scale, especially with regard to issues like cost savings and OER impact on local curricula and on student retention and success. Our initial findings, however, are highly encouraging, especially with regard to the quality of and access to OER materials now available to faculty and students in California's public universities and colleges.

California OER Council Participants 2014-2016

California Community Colleges (CCC)
- Cheryl Aschenbach, Council member, English, Lassen Community College (Sept 2015 - 2016)
- Daniel Crump, Council Member, Librarian, American River College (Sept 2015 - 2016)
- Dolores Davison, Council member, History/Women's Studies, Foothill College (Sept 2015 - 2016)

Past Members
- Diana Chiabotti, Council Member (Jan 2014 - Dec 2014), Child & Family Studies and Education, Napa Valley College
- Kale Braden, Council Member, Theater, Cosumnes River College (Jan 2015 - May 2015)
- Cheryl Stewart, Council Member, Librarian, Coastline Community College (Jan 2014 - May 2015)
- Kevin Yokoyama, Council Member, Mathematics, College of the Redwoods (January 2014 - May 2015)

California State University (CSU)
- Diego Bonilla, Council member, Communication Studies, California State University, Sacramento (Jan 2014 - 2016)
- Ruth Guthrie, Council Member, Computer Information Systems, California State Polytechnic, Pomona (Sept 2014 - 2016)
- Lawrence Hanley, Council member, English, San Francisco State University (Jan 2014 - 2016)
- Katherine D. Harris, Project Chair, English, San Jose State University (non-voting) (Jan 2014 - 2016)

University of California (UC)
- Bruce Cooperstein, Council member, Mathematics, UC Santa Cruz (May 2015 - 2016)
- Peter O. Krapp, Council member, Film & Media/Visual Studies, English, Informatics, UC Irvine (Jan 2014 - 2016)
- Chikako Takeshita, Council member, Gender & Sexuality Studies, UC Riverside (Jan 2015 - 2016)

Past Members
- Robert Jacobsen, Council Member, Physics, UC Berkeley (Jan 2014 - Dec 2014)
- Randy Siverson, Council Member, Political Science, UC Davis (Jan 2014 - Dec 2014)

1. Focus Groups: Introduction

By speaking with faculty and students, the CA-OERC has discovered some of the reasons that OER adopters were successful and motivated to adopt in addition to finding out why non-adopters do not use OER and what would convince them to do it. The focus group results helped to inform the design of the request for proposal and outreach program to facilitate and implement AB 798 (Bonilla, 2015). In addition, these efforts gave evidence to obstacles and triggers for OER textbook adoption.

From June to August of 2015, the CA-OERC held 5 faculty focus groups focusing on how faculty use OER materials and obstacles and triggers to OER textbook adoption. Each focus group session consisted of 3-6 participants and lasted 50 minutes per session. Faculty participants from the CCC, CSU and UC systems were provided a stipend of $100 each. For the OER-experienced groups, the participants were selected from a pool of participants who indicated their willingness to participate on the designated dates as well as their level of experience with OER materials. The faculty who are not aware of or who have not used OER textbooks or materials are a more difficult group to assemble. The CA-OERC visited faculty governance meetings in person in all three segments in order to attract participants and conduct the focus groups on-site. The CA-OERC was unable to identify a UC faculty gathering that could host a focus group, though UC CA-OERC members did informally speak with UC faculty at regional governance meetings. However, the research findings from the CCC and CSU faculty are applicable as well to the UC OER efforts. Since the CA-OERC convened in January 2014, several UC campuses have independently and successfully initiated OER programs.

Three student focus groups were also held. For the student focus groups, various CA-OERC members visited student governance meetings for the CSU and CCC.

2. Student Focus Groups: Comparison between CCC and CSU

The first student focus group occurred at the CCC student legislation meeting on May 1, 2015 in Ontario (facilitated by CA-OER members, Chikako Takeshita and Ruth Guthrie). While attendance at these two focus groups exceeded expectations, the facilitators found that most participants did not have OER experience, with the exception of the Computer Science students who had used online textbooks because traditional textbooks are too expensive. These students expect learning modules to be included in an OER textbook. In addition, they requested OER textbooks to be distributed via PDF for easy access, cost, and annotation/highlighting capabilities. Many CCC students cannot afford a computer or laptop. They can afford a Kindle, from which they can access a PDF. Most students like digital materials for searching purposes. If searching isn't too important, most students prefer print for deep learning.

In August 2015, Ruth Guthrie led a focus group with CSU students and was able to informally assess differences between CSU and CCC students as follows:

- CSU students said they never read a book on a phone but, the CCC students did it frequently.
- CSU students really liked printed books for studying.
- CSU students were not as forthcoming as the CCC students about pirated textbooks. But, after the recorder was off, they all said they did it. But, they also said they were more than willing to purchase the book legally if the price was fair.
- The CCC students predominantly said the publishers were the problem. The CSU students spoke about the University being the problem.

3. Student Focus Groups: Readability Factors

The use of digital media in computer networks allows for a different media ecosystem in which, once information has been created by individuals or groups, it can be replicated endlessly and distributed freely. While digital media enables the duplication and distribution of OERs without cost, the actual use of textbooks in a digital format differs from the use of textbooks in print. As we move forward in the process of adoption of digital OERs, it is necessary to understand how faculty and students use digital textbooks and their efficacy in the teaching and learning process.

The analysis of the information gathered in the focus groups corroborate the findings of the initial bibliographic research on the readability of digital textbooks. Overall, the factors affecting the use of digital textbooks can be grouped in three main categories:

1. The role of digital literacy and information literacy in the use of e-textbooks,
2. The varied use of textbooks in different subjects, and
3. Convenience factors and the permanency of digital publications.

Digital Literacy and Information Literacy

The use of computer-based and mobile applications (e-readers) is necessary to read books in a digital format. The types of annotations that can take place in digital textbooks are different from the annotations that can take place in print textbooks. E-readers allow the ability to highlight content, make textual annotations, and modify the size of text displayed on the screen. At a later time, highlighted content and annotations can be accessed in different ways depending on the application being used. To the contrary, print publications allow handwriting and free hand drawings in a fairly standardized manner. Knowing how to perform annotation tasks in an electronic device, a form of digital literacy, affects the way in which the digital textbooks are used and how well they can substitute print textbooks. The repagination that takes place when the size of the font of textbooks is altered can result in navigational problems at the time of using the resource.

Three different overall types of computer devices were mentioned in the focus groups: Computer/laptops, tablets, and cell phones. The information collected does appear to indicate that students with stronger digital literacy skills can use the aforementioned devices adequately, while students with lower digital literacy skills have more problems utilizing mobile devices adequately. Information captured in the focus groups indicate that students have a preference for Adobe's Portable Document Format (PDFs) for the use of textbooks in digital format.

Information literacy refers to the ability to utilize information resources adequately. This includes the skills to find and access OER materials (textbooks, slides, assignments, etc.) online for personal use. Access skills include the ability to connect to the Internet at different times and from different locations. For example, students in the focus groups addressed problems regarding the downloading of textbooks for use in locations where they don't have Internet connectivity. Some OER materials and textbooks do not offer means for easily downloading content to personal computers or devices, giving implicit preference to users with regular access to the Internet.

The analysis of the data obtained offers another dimension that helps address the suitability of digital textbooks based on digital and information literacy skills. Digital textbooks can be created

following traditional uses of print media (pages with images that can be highlighted, annotated, or bookmarked) or following the conventions of digital media (traditional print media features plus multimedia, hypertext, interactive applications, collaborative features, etc.) Desktop and laptop computers are able to display both types equally well. However, it is more difficult to read for long periods of time on a computer. To the contrary, applications for mobile devices like tablets and cell phones do not function equally well when multimedia, interactive applications, or interconnectivity features are part of the digital publication. Another issue is related to the type of screens in tablet devices. Tablets with screens that do not emit light were mentioned as better suited for longer periods of time reading; nonetheless, tablets that do not emit light are not well suited for digital publications with multimedia and interconnectivity features.

Varied Use of Textbooks in Different Subjects

The initial bibliographic research pointed at significant differences regarding how textbooks are used in different disciplines. The information collected during the focus groups found evidence that this is the case; however, the focus groups didn't provide sufficient information as to determine in a general way what subjects benefit more from the use of books in digital form. The use of a textbook in a specific subject could be related to two different factors: (1) How the content of the subject is structured, for example, a physics textbook versus a literature textbook, and (2) how faculty teaching a specific subject guides the use of the textbook in a course. For example, a faculty member can rely more on students reading the textbook to acquire subject content, and another faculty member can rely more on the end of chapter questions or exercises in a textbook, and use class time to lecture about the subject. The use of a digital textbook to read subject-related content is different from the use of the textbook to work on exercises or end of chapter problems.

In a related matter, the use that students make of digital textbooks varies at different moments of the course. Students in the focus groups related different experiences in the use of digital textbooks during the semester (exposure to the course content) and before examinations (studying the course content). Digital textbooks appear to be better suited for reading than for studying. For studying purposes, the digital publication appears problematic as it seems that students have a difficult time navigating the electronic content in a nonlinear fashion. It appears that digital and information literacy skills have a positive impact in the ability to navigate an electronic publication for studying purposes.

Convenience Factors and the Permanency of Digital Publications

Information retrieved from the focus groups indicates that students appreciate the convenience of digital textbooks. For example, students mentioned preference for digital textbooks because it is easier to carry a single digital device with all of their class material than to carry the physical books. The ability to use the textbooks at any time and anywhere was also mentioned as a convenience factor.

A stated inconvenience of using digital textbooks, mentioned as a deterrent for adoption, is the ability to keep the textbooks after the course is finished. Students expressed frustration with the inability to keep the digital publications used for their coursework. Digital publications appear to be impermanent in two main ways: (1) Students lose access to digital textbooks after a period of time and (2) digital textbooks become inaccessible as applications and electronic devices change.

4. Faculty Focus Groups: Barriers to OER Adoption

Emerging themes from the five faculty and student reaction focus groups were:

- Defining OER
- Faculty Awareness, Use and Finding OER
- Students and OER
- Issues with OER
- Faculty Workload

Defining OER

The faculty participating in the focus groups were OER users. Some had experience using OER textbooks, wiki-style books, videos and OER quizzes. ChemWiki, one of the most successful OER projects, was mentioned. Others said that they used OER as supplementary materials to the traditional textbook. Faculty stated that when using OER, they often had to create their own supplementary materials. Many of the faculty in the focus groups used free materials, though not textbooks. A few people recognized that their universities used OER books written by fellow faculty. In specific disciplines, it was difficult for faculty to find an appropriate OER textbook.

While several faculty used OER textbooks, many defined OER in a much broader way. During the focus group, most people recognized OER as textbooks and workbooks available for free or little cost. Discussions also spoke to the spirit of open access and sharing knowledge. The idea that OER are created by faculty and to be reused, shared and adapted was pervasive. Faculty also spoke about including student contributions to OER.

Several faculty spoke about OER in a broader sense. Many saw OER materials as accessible online, opening them up to multimedia elements beyond what a traditional textbook can provide. While a textbook is linear and coherent, faculty felt an OER could be more than simple print, including homework systems, collections of resources, video and other multimedia elements. Several faculty mentions OER tutorials that they created on Youtube.

Faculty expressed concern with the upkeep of OER materials and with ensuring that the OER materials had authority within a discipline. The sense that OER needs a gatekeeper, as when a traditional publisher has editors and faculty reviewers, was suggested. Wikipedia is an example of a non-vetted source. Crowd-sourcing and goodwill is responsible for the accuracy of the content. How do faculty know a trusted source for an OER textbook?

Faculty Awareness, Use, and Finding OER

When the focus groups were asked to discuss awareness of OER and how to get faculty to adopt OER, the responses were mixed. Generally, people said faculty were unaware or that they had heard of OER but didn't have the time or inclination to adopt an OER textbook. Other faculty said their entire department had adopted OER.

One person reported, "Looking at the available options, I will be using OER as a supplement, simply because I don't find the accuracy or the standards of writing to be consistently appropriate."

Some campuses were very liberal in their adoption of OER, while others said no one on their campus ever discussed it, even though they were sympathetic to the expense to students.

One person using a textbook found online reported, "I use an entire open book for one of my courses. It had the exact subjects I needed for that course, so it was my main textbook. I used it for both readings and problems. The author of that book was amazing, he noticed I was using it and a couple of weeks into the quarter, he emailed me and asked if there was anything else I wanted that wasn't in his book. I actually mentioned one topic that I was going to supplement. By the time we got to that part in the curriculum, he had created a new section a new half chapter for that topic. It was a a really good experience and incorporated it to the course."

Another, with a highly successful OER project stated, "I told my chair that I'm not using a commercial textbook ever again."

When asked about how they find their own OER resources they said they search for materials online or they hear about it by talking to colleagues or at conferences. Faculty expressed a need for an OER clearing house, like MERLOT but possibly easier to use and with more peer-evaluated sources.

Faculty also said that when they are looking for a textbook, they get promotional materials from a publisher and visits and free textbooks from the publisher representative for their school. Having someone promote a book to them makes them aware of the book's advantages and helps them make a selection. OER textbooks have no sales representatives. One focus group indicated that the time to approach faculty for a new OER textbook adoption is when there is an issue with the current textbook. They also indicated that it is useful to receive an email with a link to potential textbooks or even a printed copy.

One focus group had discussion about "What if the OER isn't perfect?" or even as good as the publisher-developed textbook. There was a real divide of opinions on this one. One side felt that working with a sub-standard book was unacceptable for students. The other side argued that you've got to be willing to accept a beta version of a textbook and improve on it. If you're involved at that level, faculty need to be part of the community that is making education accessible and open to students.

Students and OER

In the faculty focus groups, the faculty recognized that the students were very appreciative of a free textbook or a free collection of articles. The students liked not having to pay and they liked posted materials that they were free to review without the materials expiring.

The two most common issues identified in the focus group regarding student use of OER were printing the textbook and clarity of the textbook. Some students like a printed copy and some students need a printed copy because they don't have Internet access. A printed copy runs the risk of text being too small; it also risks having poor print quality, and images may have far less fidelity than a digitally represented image.

Faculty thought it would be good to explain the use of OER to students prior to the course. The sentiment was stated that students already use digital textbooks, so OER is nothing new. Some thought there might be value in creating videos to illustrate how to use the digital textbook. Others reported that if it was intuitive enough, students could figure it out.

Faculty recognized that students used smartphones, tablets, laptops and desktops to view textbooks. Some students didn't have computers or didn't bring computers with them to class. Faculty were concerned that students were not reading the textbook, regardless if the textbook is OER or traditional.

Faculty Workload and OER

Several faculty that participated in the focus groups had created their own OER materials. The remainder of the faculty did not see themselves as authors of an OER textbook. Several were willing to use OER if it came to them fully prepared and supported and a lot of work wasn't required to make it fit with their courses. Reasons given for not adopting OER were the lack of a reward system, the lack of meaningful support, and the labor intensiveness involved in writing an OER. Many of these faculty, however, would supplement the traditional textbook with OER materials. Unfortunately, this would not always create a savings for a student in the course.

Faculty were reluctant to quantify the time necessary to create OER. One person said the setup of OER materials instead of a textbook took a huge amount of time. But, once it was set up, it took one to two hours a week to maintain. Another faculty member estimated that it takes three times the work to use a digital textbook.

Based on both student and faculty focus groups, the CA-OERC developed its Fall Pilot Project to further research the curation, adoption, and use of OER textbooks.

5. Fall Pilot Project: Introduction

OER research has focused mainly on faculty awareness of OER and on student and faculty perceptions of OER quality. Few studies have looked at OER implementation issues. The focus of this study was to look at challenges of OER use once an OER textbook is selected.

The study recruited 28 faculty from the University of California, California Community Colleges and the Cal State University System to adopt one or more chapters of an OER textbook. Faculty received a $1,000 stipend to:

1. Implement the OER chapter(s) in their courses
2. Participate in a faculty survey
3. Administer a student survey
4. Attend webinars to discuss issues with the OER textbooks
5. Build an e-portfolio, describing their adoption

Additionally, several focus groups were held with faculty and students to gain insight into their perceptions of OER and digital textbooks, online reading and study habits using e-textbooks (discussed in previous sections of this White Paper).

Research Questions

- Quality: Although the COOL4Ed textbooks have been peer-reviewed, to what extent does the quality of OER materials hold up under classroom conditions? What does the actual use of OER materials tell faculty about their quality? How do students judge the quality of OER materials they encounter in courses? Do OER materials have any effect on student satisfaction with a course?

- Workload: How does the incorporation of OER materials into class meetings and courses affect faculty time and kinds of faculty labor? Does the incorporation of OER materials require more or less faculty time? More or less faculty labor? Are faculty prepared to use OER materials? Or, does the use of OER material require faculty development?

- Performance: Does the use of OER materials lead to any significant differences in student performance? Is there any relation between OER use and learning outcomes? Does the use of OER materials affect student engagement with the classroom and learning?

- Policy: Does the use of OER materials pose any challenges for existing policy?

- Usability: How difficult or easy is it for faculty and students to use existing OER materials? Can this usability be improved in terms of technological infrastructures -- platforms and media? (For instance, how well do existing OER materials fit with current CMS (Course Management System) or LMS (Learning Management System) platforms? How easy or difficult is it for students to navigate and manipulate OER materials?) What role does ICT (Information and Communication Technology) literacy play in the use of OER materials for both students and faculty? What role does ICT literacy play in student

and faculty satisfaction with OER materials? (See also recent study on the use/success of ChemWiki: "[Assessing the Impact and Efficacy of the Open-Access ChemWiki Textbook Project](#)")

- Self-Reflection: To what extent does the use of OER materials encourage faculty to reflect on, and possibly adapt, their teaching practices? Do students notice a difference in pedagogical practices when faculty use OER materials?

Methodology

The purpose of this research was to investigate issues with OER adoption. Several approaches were used to study this issue.

1. OER Chapter(s) adoption during Fall of 2015.
   a. Webinars
   b. Faculty and Student Survey of OER Experiences
   c. E-Portfolios
2. Focus Groups
   a. Students - OER Use
   b. Faculty
      i. Obstacles to OER Adoption
      ii. How to improve Adoption of OER

Faculty adopting OER textbooks were supported with webinars to inform them of the goals of the study and how to implement the chapters and administer the survey. The selected participants kept track of workload, student success, learning outcomes, and more throughout the semester/quarter. At the end of the term, student perceptions of the OER textbook chapter(s) was also collected in a survey administered by the faculty.

While studies have been commissioned about the awareness surrounding OER textbooks, no single study has been conducted to address professional development, workload, and student implementation strategies, especially in the CCC, UC, and CSU segments. The Fall Pilot Project provided insight and understanding of what services are necessary to support faculty adoption of OER textbooks -- lessons that were applied to the development of the call for proposals for [AB 798 (Bonilla, 2015)](#) in Spring 2016.

Project Documents:
- [Project Description](#) ([Appendix A](#))
- [E-portfolio Description](#) ([Appendix B](#))
- [Project Timeline](#) ([Appendix C](#))

Originally, this project was budgeted for 30 participants and began with 28 participants. As of November 2015, the project had 17 participants: 12 from CCC; 7 from CSU; and 0 from UC. UC faculty were originally part of the original 30 participants in this pilot project. However, citing workload issues, the UC faculty eventually dropped out of the project before its conclusion.

Participants have had previous experience with OER materials and are willing to adopt at least one chapter of an OER textbook. Each textbook (with the exception of one) identified for use by each faculty member costs zero dollars. With the exception of two courses, all courses have a C-ID correlation and are in the following disciplines: Art History, Biology, Business

Communications, Child Development, Communication Studies, English, History, Humanities, Marketing, Math, Physics, and Sociology.

Because the project involves human participants, documentation was submitted and approved by the CSU Institutional Review Board (approval extends to all segments).

Literature Review

Introduction

The William and Flora Hewlett foundation describes Open Educational Resources ("OER") as

> teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge. (Hewlett, 2014)

As such, the creation of OER is meant to provide instructional materials as a shared and reusable resource for the teaching and learning community (UNESCO, 2002). Since OER is to be distributed for non-commercial purposes, its use as course materials reduces the financial burden and the learners' barrier to quality learning.

We are seeing steady growth of the awareness and adoption of OER because the cost of course materials is the biggest driver for faculty (Grajek, 2013; Petrides, 2011). A growing number of faculty believe in implementing OER to provide equal access to all their students on the first day of class (Hilton, 2016).

An unexpected cost factor for first-year students is that they spend more on their course materials because they lack the experience or mentoring on how to maneuver college (Massie, 2015). Many of the first year students are also first generation students who spend more on textbooks than non-first generation students (Hill, 2016). Because many first generation students do not have anyone in their world who has been to university, they lack the cultural capital to be efficient and cost savvy (Caufield, 2016). First generation students and textbook costs can negatively impact students' learning experiences and their time to graduation (Hill, 2016). Thus, one could argue that reducing textbook costs to zero could potentially increase persistence rates (Fisher, et.al., 2013).

Since the focus of this research study was to look at challenges and barriers of OER adoption, we reviewed the existing literature to discover the spectrum on OER research, specifically on quality, workload, performance, policy, usability, and self-reflection.

Although the Babson "Opening the Curriculum" study stated that "2/3 or 3/4 of the faculty" are not aware of OER, once they become aware of their potential, they are interested in learning more and possibly revising their course materials selections to include some if not all of their resources to be open and possibly free (Allen & Seaman, 2014, p. 2).

It is not difficult for faculty to be aware of their students' struggle with the cost of higher education and their materials, thus in the Washington Community and Technical College System study, saving students money is the most frequently cited benefit for selecting OER

(Chae & Jenkins, 2015). Closely mirroring similar findings from the Washington study, the Babson report states that the faculty are clear in their criteria for moving to open digital course materials and that it is cost (Allen & Guzman, 2015).

Quality

One of the biggest barriers to faculty adoption of OER in the past has been their concern for the perceived quality of the materials. (Zobel, 2015). Quality and a potentially negative perception by colleagues has influenced the regular adoption of OER. (Chae & Jenkins, 2015) However, we are seeing an increase in positive perceptions of quality from recommendations and peer-reviews made by faculty colleagues within a department, college or professional learning communities. (Petrides, et. al., 2013)

A recent finding in a review of research on OER efficacy and perceptions indicates that "roughly half of the teachers and students find OER to be comparable to traditional resources" while a few believe they are superior and a smaller minority find them inferior. (Hilton, 2016, p. 16) In fact, a recent research study indicates that the 62% had the same "trusted quality" as traditional resources and approximately 68% said the proven efficacy was about the same (Fisher, et.al., 2013). In the Babson report the efficacy of the material is the biggest reason why faculty adopt low or no cost materials, without realizing they are lowering the cost for their students (Allen & Seaman, 2014). Once faculty are made aware of the potential for cost savings and lack of negative impact on students learning, they are more open to trying it (Allen & Seaman, 2014).

More and more faculty are identifying the capabilities to create diverse course content by curating OER as a beneficial quality resource for their students. For example, they emphasized that OER "helped them implement various types of learning materials from some educational sources that they otherwise would not have been aware of" (Chae & Jenkins, 2015, p. 19). In fact, incorporating OER can give faculty more flexibility outside the traditional course materials by providing the opportunity to create new elements in their curriculum (Chae & Jenkins, 2015).

Workload

Many faculty who are interested in adopting no-cost course materials feel constrained by the time and effort it would take them to locate, review, and possibly curate OER (Allen & Seaman, 2014; Grajek, 2013; Chae & Jenkins, 2015).

> This was a consistent theme with faculty at all levels of experience and in all styles of use with OER. Those faculty who are at the beginning stages wanted to have extra time to review the available OER. Faculty who have implemented OER as a supplement wished to have a block of time to convert their courses to OER-based courses. Faculty who were actively using OER as a primary resource of their courses at the time of the interviews also wanted to have extra time to repackage their courses so that they can share them with the world. (Chae & Jenkins, 2015, p. 22)

Faculty welcome stipends or release time as incentives to compensate for their time and effort and consider these provisions as signs of commitment by the institution and may even motivate mainstream faculty to consider such innovation. (Brooks, 2015) However, in the ISKME study they discovered a group of faculty that indicated that time and effort to

review new course materials is a process that takes place whether one adopts an OER or a new edition of a traditional textbook. (Petrides, 2011)

Faculty are motivated by the prospect of having release time to design or redesign their courses to better incorporate technology. The relative importance of time—compared with more tangible forms of compensation such as monetary or other value-oriented incentives—suggests that time is a faculty member's most valuable resource (Brooks, 2015).

Performance

An additional concern for faculty adoption of OER is an expectation of evidence that the students learning experience would be positively and not negatively impacted (Brooks, 2015). As such, several research activities have quantified no significant difference in the performance of their students (Allen, et.al, 2015). In the majority of cases, students have performed the same or better when their course materials included OER (Allen, et.al, 2015; Fischer, et.al, 2015; Hilton, 2016; Hilton, n.d.; Schaffhauser, Nov. 2015; Hallowell, 2016). In fact, John Hilton from the Open Education Research Group has reviewed several studies on the impact of OER on student learning. When combining the numbers of students (over 46,000) who have participated in studies relating to the influence of OER on learning outcomes, he concludes that students do not seem to be negatively affected by using OER (Hilton, 2016).

Policy

Because much of the current OER research is reporting that students are not being negatively affected by OER, there may be significant policy implications (Grajek, 2013; Fischer, et al., 2015). As a result of a qualitative investigation of faculty OER usage in the Washington Community and Technical College System, the findings outline several recommendations towards developing policy to assist faculty with their adoption of OER (Chae & Jenkins, 2015).

First, Chae and Jenkins have discovered that since faculty are confused with copyright issues, they have recommended clear principles and procedures that guide the selection of OER which "will not only encourage faculty to implement OER but also sustain their efforts in the long run" (Chae & Jenkins, 2015, p. 35). For example, in "Obstacles to OER," Audrey Watters addresses the common confusion of Creative Commons licensing as an additional challenge for faculty. As a result of course material's licensing confusion, Watters states the faculty continue to use traditional course materials since they are confident that the publisher/traditional materials are considered "safe" and not potentially violating copyright (2012).

Additional policy issues considered to endorse and support OER were to envisage buy in from the department, college and/or division levels in order to avoid potential conflict of the selection of materials at any one level (Chae & Jenkins, 2015). Another policy was to inform and train all instructors within an institution including contingent faculty so that students in all classes would have access to OER (Zobel, 2015). Another unique policy which could become mainstream on campuses in the future was the recommendation that the university registration system identify "OER-based courses" (Chae & Jenkins, 2015, p. 36) in the course catalog in order to assist students in their course selections of low/no cost courses, and for the faculty/administration to be able to analyze the impact of OER when comparing students grades pre and post OER.

Finally, Chae & Jenkins recommend administrators use the Washington study as a framework in how to support faculty in their implementation of OER (2015). These recommendations in this

study are by far the most comprehensive and practical from the perspective of planning and implementing OER policies within an institution.

Usability

The discoverability of relevant OER for faculty is paramount for successful course materials' adoption. In Watters' blog, she posits that the current challenges of discovering or locating relevant OER can reduce the interest of adopting course materials that take too much time and effort to locate (2012). By way of example a faculty member in the Babson survey on OER in Higher Education stated, "There is so much material out there, and so little time available for searching, that it seems almost impossible to change from traditional to OER resources (it is always easier to stick with what you know)" (Allen & Seaman, 2014, p. 19). Many faculty agreed that searching for course materials from the traditional publishers is less difficult than locating OER although they admitted that the effort to find any resources and integrate them into their courses is significant. Thus, a key finding is that the majority of faculty reported the "difficulty in searching and the lack of a comprehensive catalog on OER materials were important barriers to their use of OER" (Allen & Seaman, 2014, p. 27).

In the Washington study, the faculty indicated a need for assistance with discovering OER via in-depth materials' description and better categorization within the search functions (Chae & Jenkins, 2015). Two examples of an institution attempting to address the OER discoverability issue is their comprehensive online search aids for locating OER and their decision to designate an instructional designer to assist the faculty in the search and inclusion of OER into the curriculum (Zobel, 2012).

In addition to selecting OER for cost savings, faculty report that ease of use is key to its adoption of OER (Allen & Seaman, 2014). For example, the portability of OER in digital format eliminates the need to carry heavy or bulky books to class or the library. In addition, the ability to integrate or curate OER into existing course materials whether remixing or organizing the topics in preferred order for the course can be beneficial for the instructor (Petridis, 2011). Using the Search features in the digital OER materials is helpful when referencing specific content in class and to keep the students on task (Abaci, Morrone, & Dennis, 2015).

The convenience of not having to rely on commercial or traditional textbooks because they have not arrived in time for the first week of class, students not purchasing the course materials because they cannot afford them, and the challenges of students using older (thus cheaper) editions are eliminated with the adoption of OER (Chae & Jenkins, 2015; Abaci, Morrone, Dennis, 2015). For the students who are not purchasing their textbooks because they are not conveniently available or affordable, "... is not a good situation for student retention and learning" (Hill, 2015). However, it is important to note that some students still consider the convenience and familiarity of print copies of their course materials also citing the advantages of portability and ease of use (Annand, 2008).

The incorporation of OER as supplementary materials can enhance and expand students' access to relevant and authentic course materials, and it can promote more interactivity and engagement. To this end, Penn State distributive stipends for faculty incorporating supplementary digital resources into their digital-based courses (Shank, 2015). As a result, faculty showed impactful student learning experiences because of interactive tutorials, games, and simulations that are also open and free (Shank, 2015). The students were reported to be more engaged with the course material and were able to apply their experiences in their

assessments and projects very successfully (Shank, 2015). These OER simulations can be found in MERLOT.org and from the University of Colorado, Boulder's PHET project which has been developed from careful research of the impact of interactive simulations on student learning (Shank, 2015; Wieman, et. al., n.d.).

Professional development for faculty or training on the use of OER for students is key to implementation success. Technical support has been cited as critical to overcoming potential barriers as well (Brooks, 2015; Chae & Jenkins, 2015). In her article "Affordable Learning at Scale with OER," Schaffhauser recounts an OER leader stating, "Provide as much training and information as possible for your faculty team up front before they start building their OER courses…. Because it will eliminate some trepidation" (Schaffhauser, October, 2015). Chae and Jenkins (2015) have recommended setting up an encouraging climate for the use of OER. Professional development should include training on selecting and integrating OER into curriculum. Collaborative partnerships on campus between stakeholders for support is imperative. The need for incentives for the faculty to consider engaging in and sustaining their OER adoption effort (Chae & Jenkins, 2015; Petrides, 2011). Providing support for the range of student technology awareness and skills is very important (Brooks, 2015). Universities should provide ongoing student technology training on digital literacy to support their academic success (Brooks, 2015).

Self-Reflection

Much of the OER research focuses on the benefits of OER, and it encourages faculty to reflect on their potentially improved teaching and learning experiences and impact as a result (Petrides, 2011; Annand, 2008; Allen & Seaman, 2014). For example, in the Washington study, several faculty shared that through their adoption of OER they needed to rethink their instructional style and course set up. In addition, it afforded them the opportunity to adapt to the OER and adjust their teaching style as well (Chae & Jenkins, 2015).

After completing several large studies of OER use at several universities, John Hilton questions the ethics of continuing to use traditional course materials when there is high quality OER available (Schaffhauser, November, 2015). He reflects on the fact that the current research of no significant difference on students' grades when using open educational resources in teaching and learning should become a reason to pay attention to the following:

> Detecting differences in student outcomes based on access and affordability, rather than instructional design, points to several new horizons for educational research. Hundreds of millions of dollars and person-hours have been invested in improving in-class instructional designs, intelligent tutoring systems, adaptive instructional systems, and other design-related innovations intended to improve student outcomes. The current study demonstrates that at least one non-instructional design option exists that can effectively improve student outcomes. (Hilton, 2016)

6. Fall Pilot Project: OER Textbook Adoption Survey Results - Faculty

Sixteen faculty from the California State University and California Community College systems agreed to participate in a study of OER adoption in college classrooms.

Faculty were required to select an OER textbook for a course they are currently teaching and adopt one or more chapters for that course. This required faculty to explain the project to students, prepare the materials, and assist students with access to the materials. Faculty also attended webinars to discuss successes and challenges of OER adoption with other faculty. At the end of the course, faculty participants answered questions to a survey (Appendix D: Faculty Survey). The results of the faculty adoption survey are reported here.

Faculty Survey Highlights

- Most faculty were highly positive about all aspects of textbooks that they selected to adopt for this study. Ratings for subject matter, design of chapter(s) and use of editorial conventions were very high. For the most part, faculty felt that the OER materials were thorough and complete and that students learned as well with the OER materials as with the traditional textbook for the class.
- Seven faculty of sixteen felt that the OER textbook was superior to the traditional textbook for the course. Five faculty rated the OER as equivalent to the traditional textbook.
- Faculty found it easy to explain how to use the OER textbook chapter(s) and had very few technical problems with students accessing the materials.
- Faculty were not as positive about the support materials (PowerPoints, Test banks) available with the OER textbooks. Half of the faculty felt that the support materials lacked quality. 25% of faculty felt that implementing the support materials took a significant amount of time. In their comments, the biggest comment made by faculty was about the need for support materials or the amount of time they spent in developing them for this adoption.
- Fourteen faculty reported that using the OER textbook chapter(s) encouraged them to reflect about their teaching practices.
- Faculty were highly positive about using OER (reuse), changing OER for their own purposes in class (revise) and sharing their newly developed materials with other faculty (redistribute).

Faculty Survey Results

Background

Sixteen faculty took part in the OER textbook adoption study from CCC (six professors and four adjunct faculty) and CSU (two assistant professors, one associate professor, three adjunct faculty) college systems.

Nine of the faculty that participated in the study had prior experience with OER content, not exclusive to textbooks. Of the 12 faculty who responded to their prior OER experience, only one person said s/he was dissatisfied.

Courses Adopting OER Chapter(s) and Textbooks

Business Communication
Ecology
English
History of Graphic Design
History of US to Reconstruction
Human Communication
Human Development
Humanities

Introduction to Sociology
Introductory Statistics
Lifespan Development
Marketing Principles
Physics
Principles of Biology
Public Speaking
Trigonometry

Faculty were given the choice of what OER to adopt and how much of it to use in their courses. The minimum requirement was for a one chapter adoption. However, many faculty were much more proactive in adopting OER content.

OER Materials Adopted for this Study	Count
2 videos	1
Entire OER Textbook	4
1 Chapter	3
2 Chapters	3
8 Chapters	1
14 Chapters	1
16 Chapters	1
20 Chapters	1
21 Chapters	1

OER Subject Matter

Survey questions about the OER textbook subject matter related to the clarity, currency and relevance and cultural sensitivity of the material used in the textbook. Faculty overwhelmingly agreed that the OER materials met these criteria. Most of the faculty strongly agreed that the OER materials met their expectations in the area of Subject Matter.

Subject Matter: The OER Materials had...

	Sufficient and Relevant Examples	Clear, Consistent Terminology	Current Knowledge	Cultural Sensitivity
Strongly Agree	10	13	11	7
Slightly Agree	4	3	5	3
Neutral	1	0	0	6
Slightly Disagree	1	0	0	0
Strongly Disagree	0	0	0	0
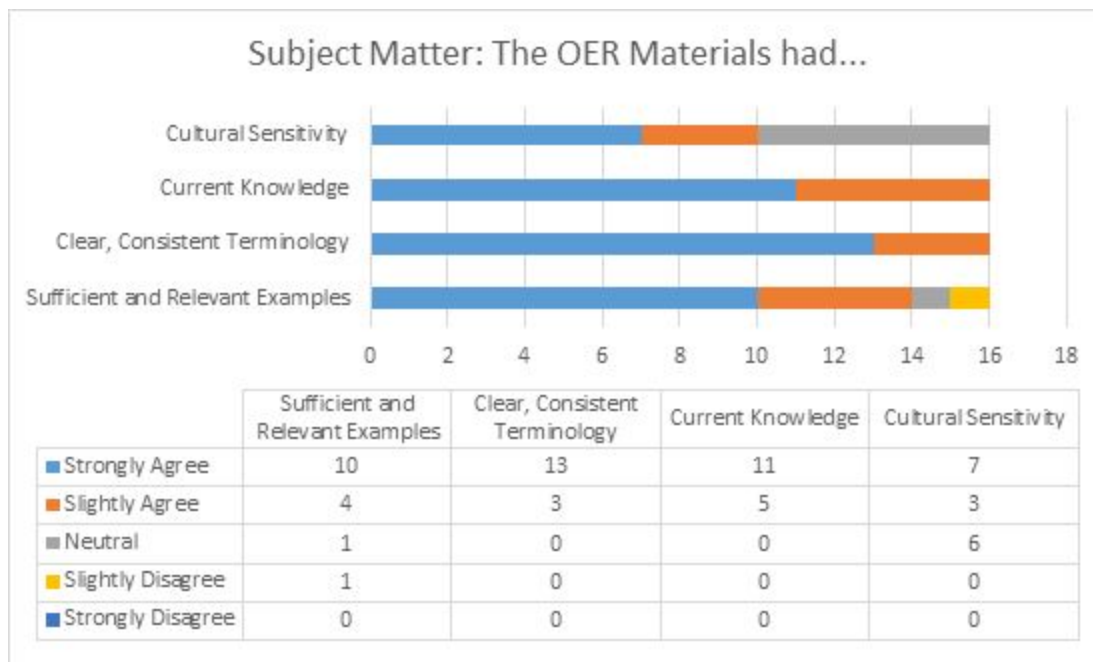
OER Instructional Design

The design of the textbook can help textbook adoption in several ways. If the OER textbook supports the learning objectives of an existing course, the professor does not need to do a massive amount of modification to have the textbook work with their course. The OER textbooks used in the study supported the learning objectives of the course, which is logical as faculty had an interest in selecting a source that would work for their course. Likewise, the reading level of the textbook was rated mostly as appropriate for undergraduate students (14 agreed, 1 neutral and 1 slightly disagree). Two faculty rated their OER textbook as not representing the best practices in instruction for the discipline.

Design of OER Chapters

	Supported the Learning Objectives of the Course	Used an Appropriate Reading Level	Reflected Best Practices in Instruction for the Discipline
■ Strongly Agree	12	10	8
■ Slightly Agree	4	4	4
■ Neutral	0	1	2
■ Slighly Disagree	0	1	2
■ Strongly Disagree	0	0	0
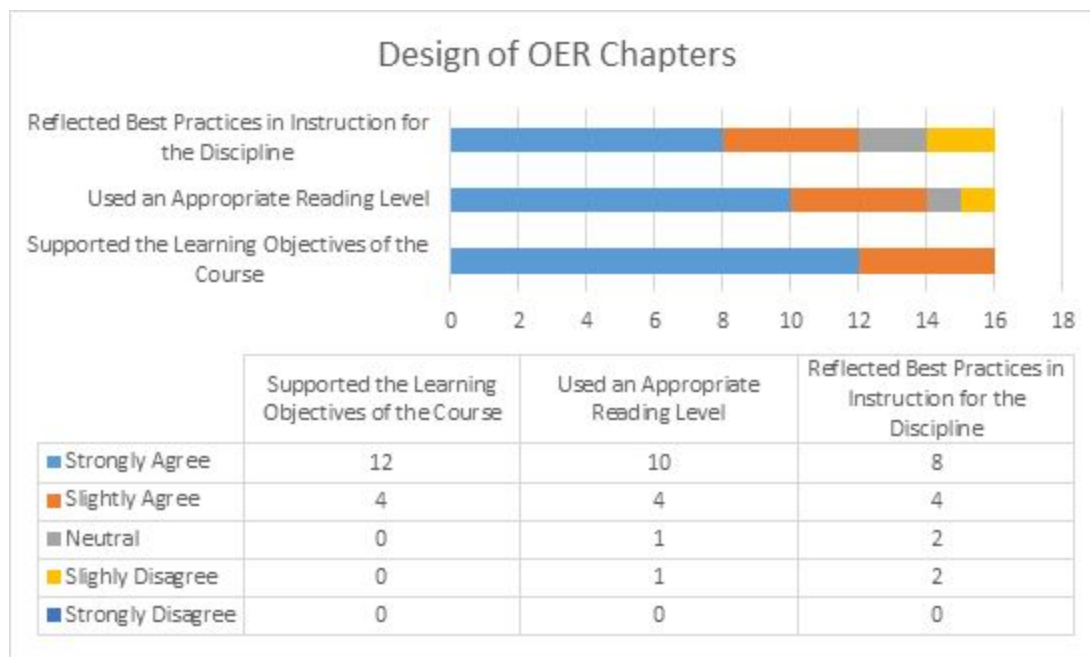
Editorial Conventions

Faculty gave very high marks to the OER textbooks in editorial conventions such as correct spelling and grammar and use of conventions such as contents and glossary. Fewer faculty "strongly agreed" that the OER textbook used was visually clear and engaging. Three faculty "slightly disagreed" that the textbook was visually clear and engaging. Faculty experiences with multimedia in the OER adopted textbooks were mixed. Three faculty "strongly disagreed" that multimedia was used effectively in the book they adopted, in courses in English, Human Development and Trigonometry.

It is possible that the question was poorly worded. Asking if multimedia was required for a textbook or if multimedia was necessary for ancillary materials may have made more sense in examining fit of content to the discipline. Instead "The OER textbook chapter(s) used multimedia elements effectively. (e.g. graphics, animations, audio)" would correctly generate a response "strongly disagree" if no multimedia was used.

OER Chapter Used Accepted Editorial Conventions

	Free of Grammar and Spelling Errors	Visually Clear and Engaging	Convential Features (eg. Table of Contents, Glossary)	Effective Use of Multimedia
Strongly Agree	11	6	10	4
Slightly Agree	3	5	5	5
Neutral	1	2	0	3
Slightly Disagree	1	3	0	1
Strongly Disagree	0	0	1	3

Legend: Strongly Agree, Slightly Agree, Neutral, Slightly Disagree, Strongly Disagree

In the three formats represented in this study (PDF, video and web-based text), a web-based textbook has a clear advantage in providing multimedia content. A PDF textbook typically would only support hyperlinks as a link to different types of multimedia content. If text from the web or a PDF is printed by a student, the use of multimedia integrated with the textbook or linked to it is impossible. If multimedia elements are a significant part of the interaction with the text, it is important to understand if students have electronic access and where they can access e-textbooks (home, library, laptop with WIFI).

Ease of Use

	Easy to Provide OER to Students	Students Had Technical Problems	Explaining Access to the OER to Students was Significant
Strongly Agree	14	0	0
Slightly Agree	1	2	2
Neutral	0	1	3
Slightly Disagree	1	2	5
Strongly Disagree	0	11	6
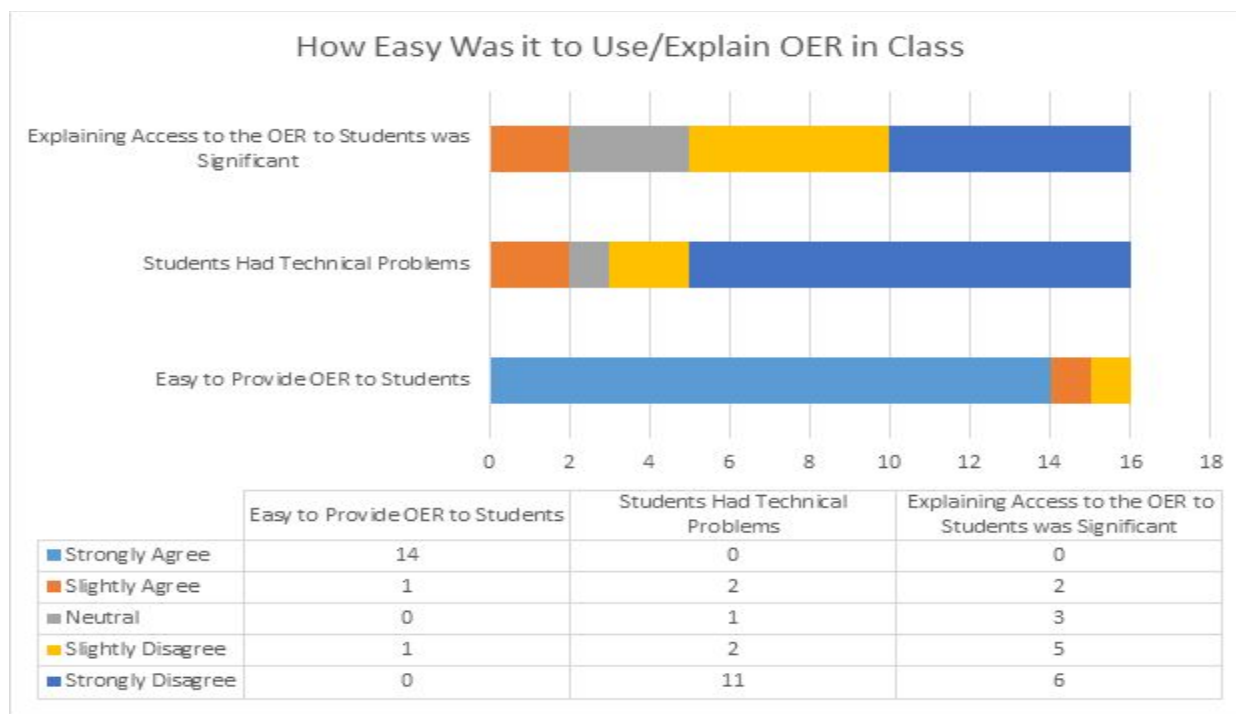
Faculty had a remarkably easy time making the OER textbooks available to their students. When asked if it was easy to provide the OER textbook to the students, 14 faculty strongly agreed. When asked if students had technical problems accessing the OER textbook, only two faculty "slightly agreed," indicating that they had students with problems. Of the two who identified problems, one professor indicated that they had a student with a disability in the class.

When asked if it was difficult to explain accessing the OER textbook to the students, results indicate that most faculty had no trouble. However, three faculty rated this as neutral and two indicated some trouble. For that reason, it may be good to have materials prepared ahead of time, with the assistance of eLearning, for example. Doing this could save faculty class-time and it could also help students become familiar with tools such as taking notes and highlighting of PDF files. Some comments in the student survey indicated that accessing OER textbooks was a drawback.

Searchability

Having a textbook that is searchable is a large advantage that an electronic textbook has over a traditional textbook. When asked if their textbook was searchable, 11 faculty said yes, three said no and two said N/A. Looking at the textbook sources, the two faculty that answered N/A for searchable textbook were using a website-based textbook. This is a book that is online, having several chapters/sections that are divided into different web pages. The student navigates the content via headings but cannot search the entire site.

Students with Disabilities

Faculty were asked if they had students with disabilities that had trouble accessing materials. Nine faculty indicated N/A, six faculty said no, and one said yes. A comment stated that their

reply to this question would have been "Not that I know of," if that had been an option. Faculty may not be aware that a student has a disability and therefore cannot tell if an OER textbook creates a problem for that person.

The person who answered yes used an OER textbook that was integrated into a website with multiple HTML pages, graphics and videos. Looking at that resource shows that accessibility conventions, such as alternative text and video captioning, were not available with this website.

Support Materials

High quality support materials are often an enhancement offered by publishers that convince faculty to adopt a specific textbook. Some OER textbooks come with support materials and others do not.

When asked about the quality of the OER support materials to support student learning, the results were mixed. Five faculty agreed that the OER support materials had sufficient quality to support learning and six faculty disagreed. Three answered neutral.

When asked if a significant amount of time was required to implement the support materials, there were four faculty who agreed and six who disagreed. In deciding to implement a textbook, having predeveloped materials such as PowerPoints and a test bank are seen as beneficial because the faculty member may not have to prepare these materials. Publisher produced textbooks often offer an advantage over OER textbooks in that they come fully supported with materials that are professionally developed and edited and integrate with the institution's learning management system.

Of the four faculty that agreed or strongly agreed that implementing the support materials took a significant amount of time, three of the faculty implemented a significant amount of the textbook in their courses. When asked what types of support materials would be most useful, faculty reported that having a test bank was the most useful in OER textbook adoption. Though, a comment on the survey was *"Quality first, then worry about supporting materials."*

Implementation of Support Materials

	The quality of the OER textbook support materials supported student learning.	It took a significant amount of time to implement the OER textbook support materials.
Strongly Agree	3	2
Slightly Agree	2	2
Neutral	3	1
Slightly Disagree	4	3
Strongly Disagree	2	3

Support materials that would be most useful for me to implement an OER textbook would be (check all that apply):

OER Comparison to Traditional Text
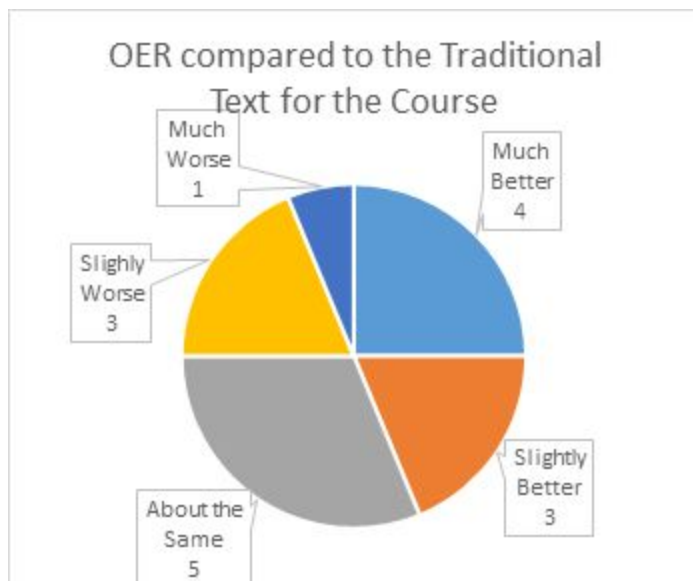
Faculty ratings of their textbook, compared to the traditional textbook in the class were predominantly in favor of the OER textbooks. Only 4 of 16 faculty felt that the OER textbook was worse. Five faculty members rated the difference as neutral, while seven reported that the textbook was slightly or much better than the traditional textbook.

When asked to compare the OER textbook with the traditional textbook for the course, the majority of faculty agreed that the OER was thorough and complete compared to the traditional textbook. The majority of faculty agreed that the students learned as well with the OER textbook in comparison to the traditional textbook for the course.

One faculty member "strongly disagreed" that the students learned as well. The data shows that the faculty member evaluated the textbook to be slightly worse than the traditional one used in the course and that the faculty member also had issues with the quality of the support materials and the time it took to prepare the materials. It may be that the OER textbook selected was not quite of high enough quality in several areas to justify replacing the traditional textbook. The faculty

member indicated that s/he remained positive about adopting a free or low-cost textbook, once one was available.

Compared to the Traditional Text

	OER was Thorough and Complete	Students Learned as Well
Strongly Agree	6	5
Slightly Agree	6	5
Neutral	2	3
Slightly Disagree	2	1
Strongly Disagree	0	1
Decline to Answer	0	1
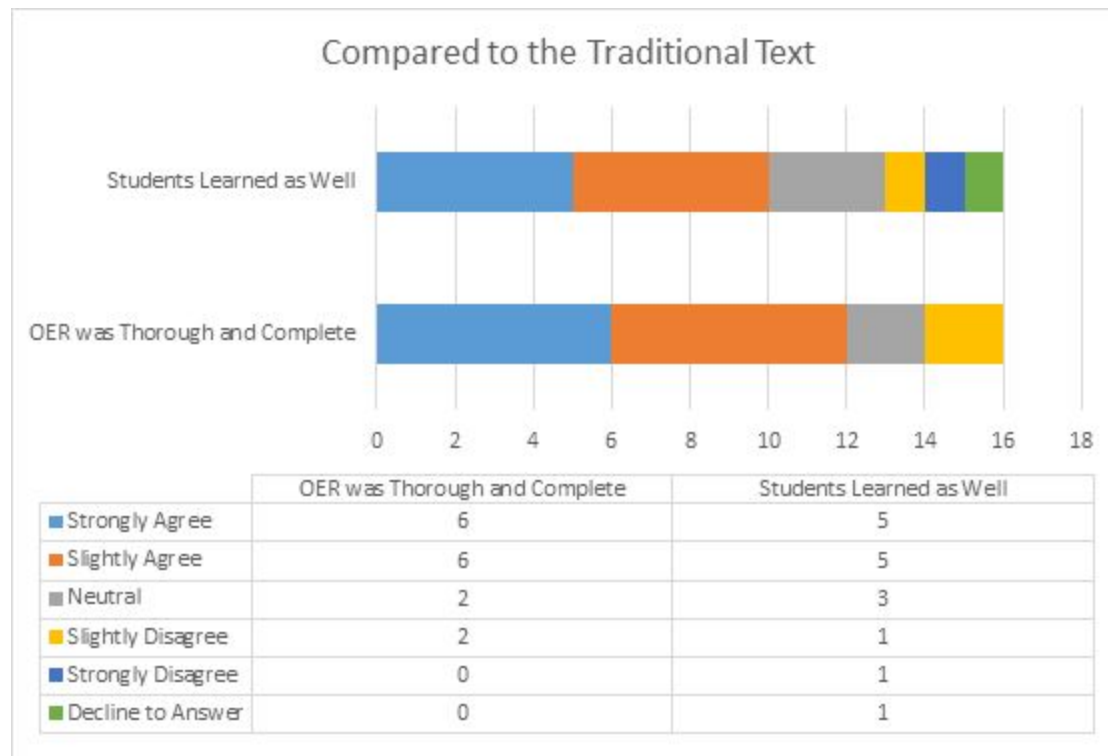
Preparation Time

Most faculty in this study felt that the technological skill required to use the OER textbook was reasonable and that the materials were easy to integrate.

Results were mixed on the issue of preparation time to implement the OER textbook. Looking into this question further with the filter of OER type reveals that faculty may have had an easier time implementing a PDF as compared to a book website. While only 16 people participated in this study, the faculty using websites had a more negative rating of preparation than those using PDFs. The three faculty reporting "disagree" on the PDFs were faculty that implemented significant amounts of the OER textbook.

	Same amount of time to prepare	Easy to integrate	Technology skill required was reasonable
Strongly Agree	6	7	7
Slightly Agree	1	2	4
Neutral	2	5	3
Slightly Disagree	7	2	1
Strongly Disagree	0	0	1
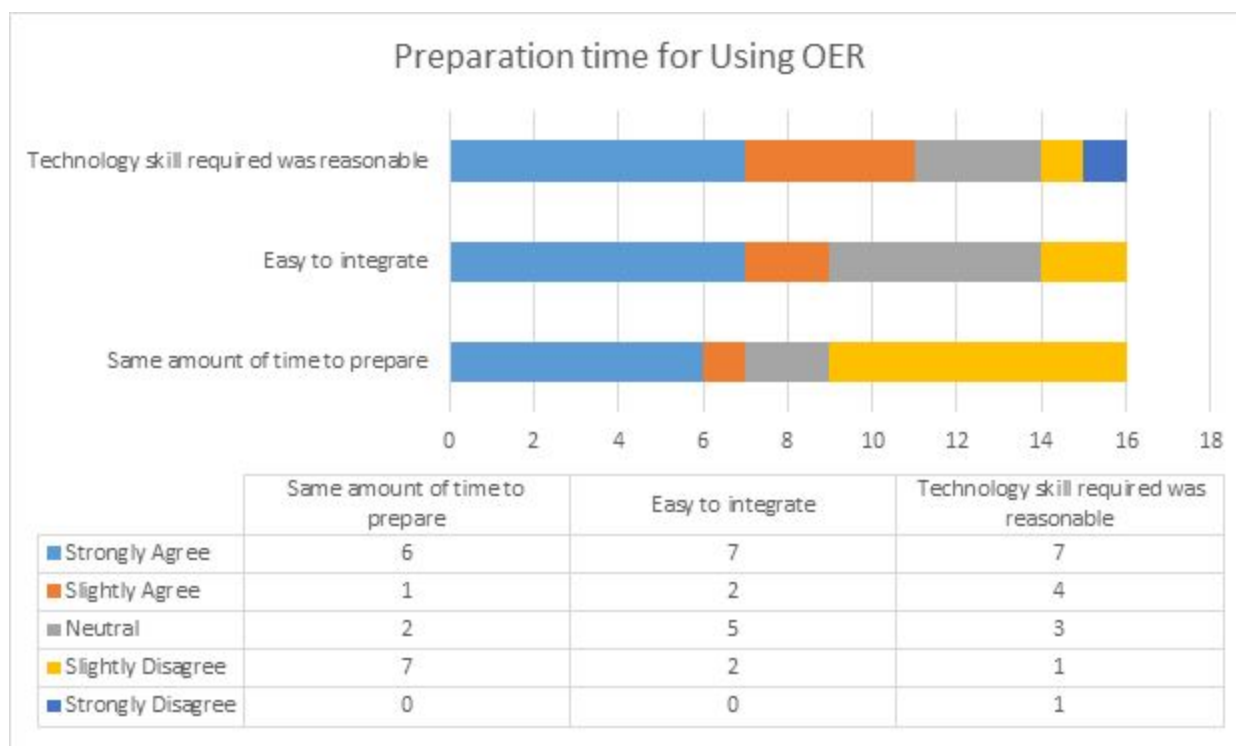
OER Preparation time is the same as the Traditional Text - Text Format Comparison			
	Agree	Neutral	Disagree
Khan Academy	1		1
Website for Textbook	1	1	3
PDF	5	1	3

Influence on Teaching

The results of this study agree with the other studies that OER use has an influence on teaching (Weller, Arcos, et. al, 2015,). Fourteen of the sixteen faculty reported that using an OER textbook encouraged them to reflect on teaching. When asked if the OER adoption changed their teaching, the results were mixed.

	Encouraged Reflection of Teaching	Changed Teaching	Stipend was Sufficent for Work Involved.
Strongly Agree	7	2	6
Slightly Agree	7	7	6
Neutral	0	2	1
Slightly Disagree	0	3	1
Strongly Disagree	1	2	0
Decline to Answer	1	0	2
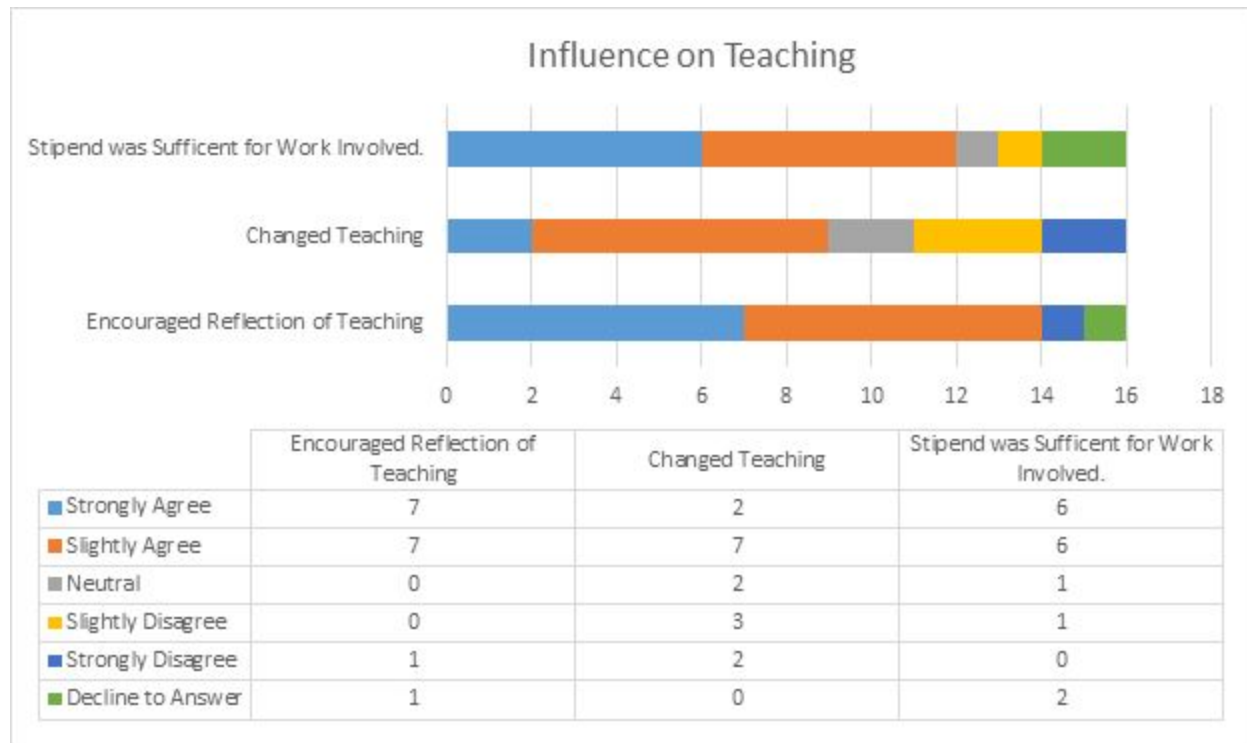
Future Use of OER

The OER movement often states that the future of OER textbooks and open culture is to reuse, revise, remix, and redistribute OER materials (Wiley, D. "Defining the 'Open' in Open Content"). Faculty who participated in the OER textbook adoption study were highly positive about their interest in adopting an OER textbook (81%) in the future (reuse). When asked about their desire to change (revise) a textbook for their own purposes, 88% responded positively. When asked if they would be interested in sharing what they created with the OER community, 75% of faculty were in favor of this.

However, participating in an OER adoption study might make them prone to answer "agree" to these questions. With the small sample size and the self-selection of the group, the numbers may be overly optimistic.

Future of OER Text Adoption

	Based upon my experiences in this class, I would be interested in fully adopting an OER textbook.	I would be interested in adopting an OER textbook with a copyright that allowed me to alter the text for my own purposes.	I would be interested in sharing materials that I created for an OER textbook with other faculty using the text.
■ Strongly Agree	11	12	8
■ Slightly Agree	2	2	4
■ Neutral	1	1	3
■ Slightly Disagree	1	0	0
■ Strongly Disagree	1	1	0
■ Decline to Answer	0	0	1

Summary of Faculty Survey Comments

What challenges did you face using this resource?

Summary of Challenges reported by Faculty in OER Adoption

Challenge	Frequency	Sample Quote
Time	5 (Making the OER fit 3, supplementing materials 2)	"The biggest challenge was supplementing the textbook with my own handouts, writing prompts/assignments, and particularly chapter review and critical thinking questions."
More Content	3 More subject content (2), more graphics and illustrations (1)	"It was only a chapter and it didn't contain that much information. It was clearly written but just barely scratched the surface. I wanted students to learn more."
Downloading enormous PDFs	2	"….students could not download the chapter, they had to download the entire book."
No challenge at all	2	"None in particular as I used the whole textbook so there were no integration issues or problems of making it fit into an ordinary syllabus."
Student Access	1	"Not all students have access to the Internet while at home. Many students still want to print out the materials. I had a student with differing abilities (visually impaired) and required all text content to be adjusted into larger text."
Less Content	1	"The text covers too much materials and includes specialized topics, concepts, and theories that are not typically covered in a traditional text."
Resistance from Department Chair	1	"I had some resistance at the department head level."
WIFI and access in the classroom	1	"Ensuring I was assigned a classroom with consistent wifi and audio/visual equipment to mirror my computer or tablet for instruction."

The predominant challenge listed by faculty (five) was a lack of time. Some comments were about making the OER fit with the course while others were about the lack of supplementary materials. One faculty member who adopted an entire textbook felt there was not a time issue because they didn't have to fit the OER in with a traditional textbook. Having adequate supplementary materials can save faculty a lot of time.

Three faculty listed a lack of content as a challenge in adopting the OER textbook chapter(s). This could be specific to particular textbooks. Thirteen faculty had no content issues and one listed too much content as an issue with their textbook.

Two faculty reported that in using PDFs, if the book was one file, it was hard for students to download the entire book, when they only needed a portion of it. A simple solution would be to make individual chapters and the entire textbook available to students. Students could then download or print only the chapters they need. If they have a need to search or read the entire

book, that is also possible. Providing multiple formats for the book (like Word copies) can also improve access.

Two faculty reported no problems or challenges in their adoption of the OER textbooks. Both of these faculty used books from OpenStax.

One person reported problems with students' access. First, not all students have Internet access at home. An online OER textbook and any website-based book is inaccessible to people without Internet access. Providing printed copies of the textbook can alleviate this problem, although a printed copy might not have the benefits of color graphics, search-ability and online notation that an electronic copy has. The same person reported that students wanted to print out the textbook. This is really an advantage of OER, as OER licenses (CC:BY) typically allow for students to print and share the textbook. Faculty may be unaware that they can get the bookstore to print copies of the entire textbook at very low cost. The same person also reported having a student who needed to adjust the text so that it was larger. Again, e-texts have this accessibility feature built in. This text was a website-based textbook. Typing Ctrl+ did automatically enlarge the text, though this book was inaccessible in other ways (alt text, captioned video). Faculty may need more information about website and e-textbook manipulation for accessibility for all students.

One person said that his textbook had too much content. This was an OpenStax textbook. Using a CC:By license would allow faculty to customize that book, dropping that content out. However, a faculty member might need support to do this in a large PDF document.

One person reported that his chair was reluctant to use an OER textbook. One person had problems with WIFI access in the classroom. Though only one person mentioned this, having Internet access in the classroom is essential if a person wants to use an OER textbook in class or an e-textbook from a traditional publisher.

What can be done to improve your experience with resources like the one used in this course?

Faculty had several comments about improving the content of specific textbooks. The more general comments included supplemental materials, making the textbook more interactive, and adding more multimedia content and hardware platforms.

Six individuals listed **supplementary materials** as something that could really benefit their experience with the OER adoption.

"I rely on instructor resources provided by publishers to optimize my teaching. So those materials would also need to be included."

Two faculty wanted an **interactive textbook**. If the textbook is online, that is a possibility.

"Since one of the huge advantages to online materials is the ability to have interactive activities, if there were some linked into the text, that would make it much more enticing for me and for students."

Three faculty wanted more multimedia content in the books they used. The content included use of more graphics, videos related to specific content, statistical packages. One person thought adaptive problem sets for novice and advanced students would be good. Two faculty made comments about students being able to use the same platform to access the book or to have access at all in a classroom.

"I think it would be very helpful if all students at the university (and hence in my class) were using the same platform. That way it would be much easier to explain in detail. However, I found that my students seem to be able to use whichever platform they are used to without much guidance from me (good thing!)."

The above statement is a little contradictory. While the person wanted similar platforms, the students were capable on any platform they used. The student survey of this study indicates that laptop computers are the most frequent platform that students use to access OER textbooks.

"I-pads/tablets that students get from a bookstore. Then they all have the same hardware ('level playing field'). They can rent the I-pads…at much lower cost."

The above statement reflects that not everyone has access to the textbook in class or perhaps even at home. In using an e-textbook, there may be options like this to assist students, in addition to have a printed version of the textbook.

Other Comments

In the general comments, faculty were very positive about their OER experiences and wrote about being motivated to use more OER in the future.

Conclusions: Implications for OER Adoption for Faculty

1. Support Materials & Preparation Time

OER Textbook adoption is easier if support materials are provided. Adopting any new textbook requires a certain amount of work. A typical publisher-supported textbook comes with a test bank, PowerPoint presentations for each chapter, and often with grill styles quizzing systems. If an OER textbook lacks these materials, the faculty member would be required to develop them, a massively time consuming task for an entire textbook. CSU faculty are not typically rewarded, financially or academically, for building a test bank or PowerPoint materials, though CCC faculty are generally expected to create many of these materials. In courses where faculty give multiple choice exams and have large sections of students, support materials are very important in the decision to adopt an OER textbook.

2. Standardized Support for OER Use

While very few faculty reported technical problems with OER, some attention to support of OER at colleges and universities could help faculty and students.

- Make faculty aware of the option for print OER textbooks. Faculty may not be aware that the bookstore can print copies of copyright free, OER textbook(s) prior to the start of the term. The bookstore can sell these copies to students for close to the cost of printing. At some institutions, the library prints copies or can keep the printed copies on library reserve. For schools without this option, low cost printing vendors could be identified.

- Having pre-developed materials for students on how to use OER PDFs, websites and other formats can save time when students need to use a textbook. The instructions, developed by eLearning department perhaps could be loaded into learning management systems and provided to faculty prior to classes. Topics include:

  - How to download a PDF on multiple devices
  - How to enlarge and reduce text size in browsers
  - How to annotate text in different formats
  - How to use a screen reader
  - Search strategies for website-based textbooks
  - How to navigate an e-textbook (page numbering, finding text, etc.)

- Support for breaking up a large PDF textbook into smaller chapters and integrating them with an LMS/CMS could save faculty time.

- At institutions with a technical help desk, educating the help desk staff on how to assist students with OER textbook access problems could help students with problems and reduce the need for faculty to troubleshoot student issues.

3. Internet Access

Only two faculty reported problems with access. However, if a classroom has no WiFi and students need to use the textbook in class, an e-textbook (OER or traditional) will not work. Most institutions could handle issues like this during classroom scheduling. One faculty member indicated that having low-rent, tablets available to students could help someone without a device to participate fully in class. Another access issue might be with students who lack Internet access at home. While getting a printed copy of the textbook is possible, it still is a barrier to full use of the texbook. This is also an issue with e-textbooks.

4. Reuse, Revise, Redistribute

Considering the very positive responses to questions on building upon existing OERs (revise) and sharing the materials with other faculty (redistribute), the future of OER looks promising. Capitalizing on faculty goodwill and their openness to shared materials can help boost the use of OER and begin a culture of openness where one's reputation is enhanced by one's willingness to help others.

7. Fall Pilot Project: OER Textbook Adoption Survey Results - Students

As part of the CA-OERC study on OER Adoption, 16 faculty adopted one or more chapters in an OER textbook. At the end of the term, those faculty provided their students with a survey link to answer questions about their OER experience in the course. Of the 397 students taking the survey, 42 were minors and their results were not recorded. Three surveys were incomplete. In one survey, the student reported that he did not read the textbook, yet had positive responses to it. These surveys were disregarded. The results below are from the remaining 351 students who answered the questionnaire. Most survey questions allowed the students to decline to answer, so some results do not add up to 351 (Appendix E: Student Survey).

Student Survey Highlights:

- 98% of students who had previous experience with OER resources were satisfied with that experience
- 77% of students said the OER chapter(s) used in the study met their expectations (3% said OER didn't meet expectations and 20% were neutral)
- Of the 351 students in the survey, 71 printed the textbook and 209 used a PDF
- Students find OER Textbooks to be readable with respect to organization, format, graphics and examples used

	Textbook is Well Organized	Font and Format were Readable	Layout was Readable	Graphics Helped Understanding	Examples Helped Understanding
Agree	76%	84%	78%	65%	78%
Neutral	18%	10%	15%	25%	17%
Disagree	4%	3%	4%	7%	3%
Decline	2%	3%	3%	3%	3%

- 16% of students wanted to have the option to purchase a printed copy of the textbook from the bookstore for a small fee (10% of students wanted to print the textbook themselves)
- The predominant platform for reading e-textbooks is a laptop computer (only 89 of 351 students reported reading from their cell phones)
- 100% of the students in the study wanted to use OER textbooks in the future and would recommend the use of OER to friends

Student Survey Results

Background Information

The 351 student participants in the OER adoption study had experience at many academic levels. Ten students reported being graduate students. Twenty-seven students reported being super seniors, meaning that they are students with a large number of units, possibly many more than needed to graduate. This sometimes occurs when a student changes majors, having all the units from a previous major and those of the new major.

Most of the students in the study are from the California State University System, 64%. 35% of responses were from California Community College students. 1% of the students claimed to be affiliated with the University of California system.

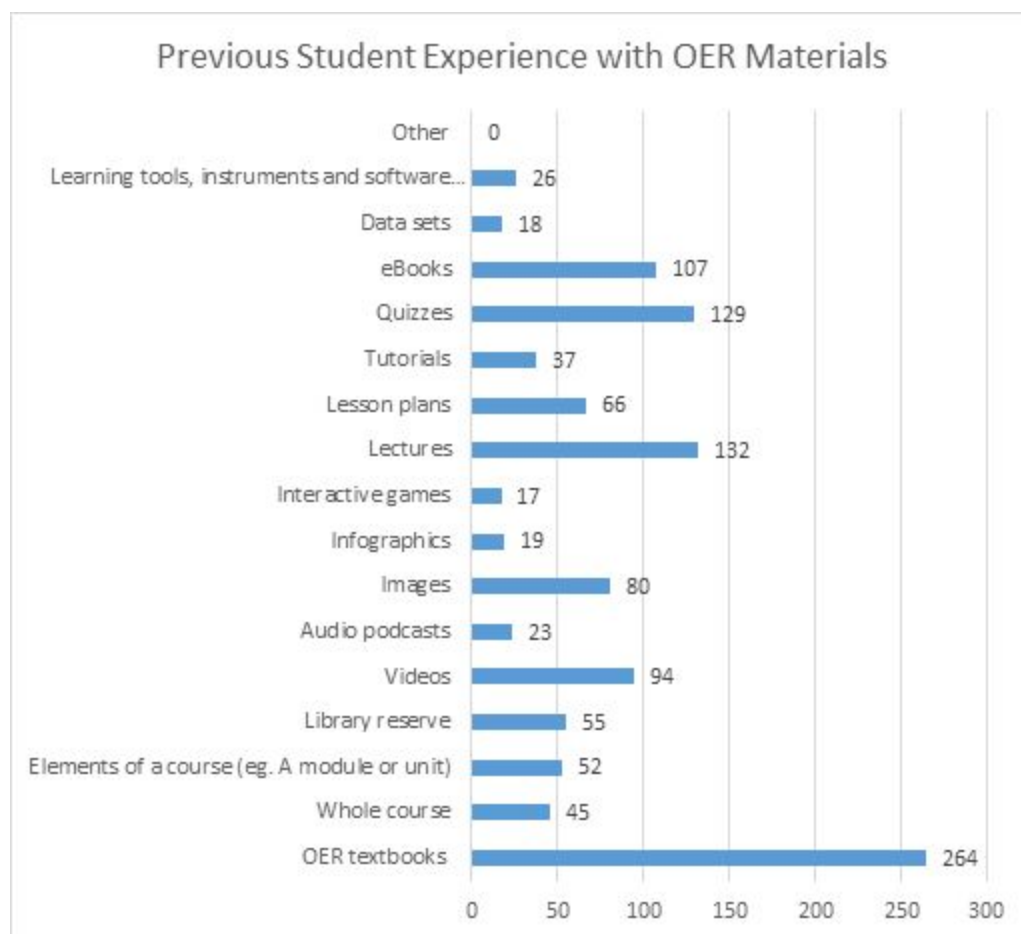| Class Standing	
Freshman	71
Sophomore	79
Junior	81
Senior	79
Super-Senior (a senior with many units over those required to graduate)	27
Graduate	10
Blank / Decline to State	4
Total	351

California College System	
California Community College	123 (35%)
California State University	223 (64%)
University of California	4 (1%)
Decline to State	1
Total	351

Courses Adopting OER Chapter(s) and Textbooks

Business Communication 300 (x chapter)	Introduction to Sociology
Ecology	Introductory Statistics
English	Lifespan 38 Development (child and family
History of Graphic Design	development)
History of US to Reconstruction – Futurism	Marketing Principles
and the great war	Physics
Human Communication	Principles of Biology
Human Development	Public Speaking
Humanities	Trigonometry

Open Educational Resources are not restricted to textbooks only. Students were given examples of OER and asked about their previous experiences. By far, the most common OER experience recognized by students was the use of free textbooks. Online lectures, quizzes and e-textbooks also were highly reported by students as resources they had some experience with. Resources that scored lower included datasets, interactive games, infographics, and audio podcasts.

There were 306 students who had experience with OER. When asked about their satisfaction with prior OER experiences, 98% of students were satisfied. Five people (2%) reported not being satisfied with their previous OER experience.

Previous Student Experience with OER Materials

Category	Value
Other	0
Learning tools, instruments and software...	26
Data sets	18
eBooks	107
Quizzes	129
Tutorials	37
Lesson plans	66
Lectures	132
Interactive games	17
Infographics	19
Images	80
Audio podcasts	23
Videos	94
Library reserve	55
Elements of a course (eg. A module or unit)	52
Whole course	45
OER textbooks	264

Experiences with OER Textbook Chapter(s) in this Study

When asked about the specific OER textbook used in the adoption study, students had a very positive response to the OER chapter(s). When asked if the OER chapters were easy to access, 80% of students answered "strongly agree" or "slightly agree." Only 3% of students responded negatively. Similarly, with the reading in the OER textbook helping student understanding, 78% of students agreed and 3% were negative. In evaluating whether the reading was engaging, the percentage of positive responses dropped to 70%. In evaluating if the OER textbook met the student expectations, a 77% positive response was given, with 3% negative.

Student Evaluation of OER Chapter(s) Use

	OER Chapter(s) Met Expectations	Reading Helped with Understanding Key Concepts	Reading Was Engaging	OER Chapter(s) Were Easy to Access
Strongly Agree	185	181	143	239
Slightly Agree	84	91	87	39
Neutral	62	60	95	51
Slightly disagree	8	9	9	5
Strongly disagree	3	3	9	8
Decline to answer	7	5	4	5
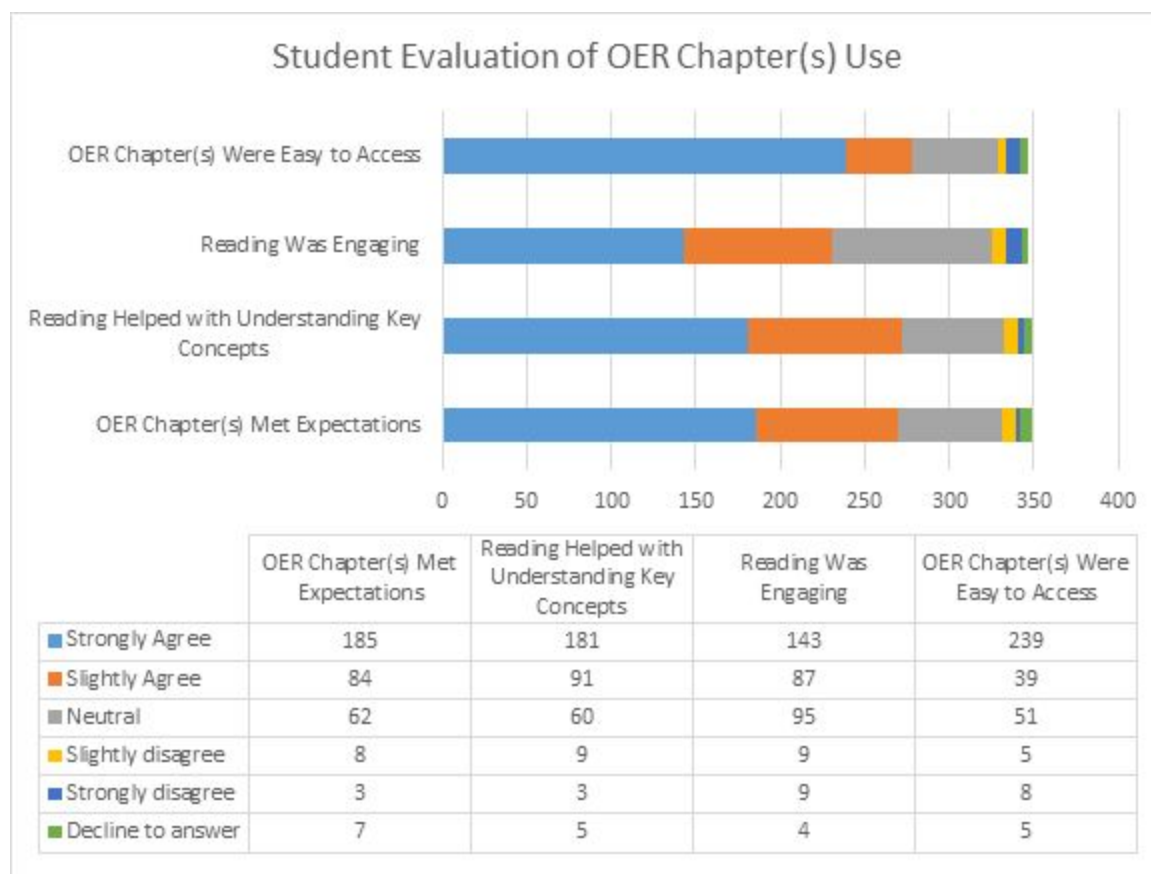
When asked what formats they used to access the OER textbook, students indicated PDF most frequently. A large number of students also indicated that they would access the textbook in a Learning Management System. There were 71 students who indicated that they used a printed copy of the OER textbook. The high use of PDFs isn't surprising considering that 9 of the 16 courses used a textbook available in PDF format. One of those nine textbooks was available in PDF or website format.
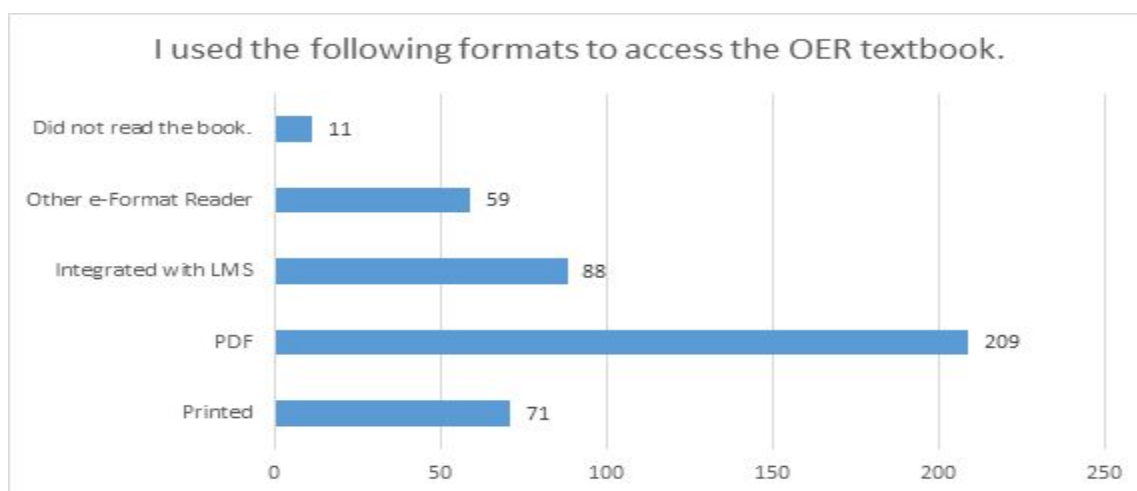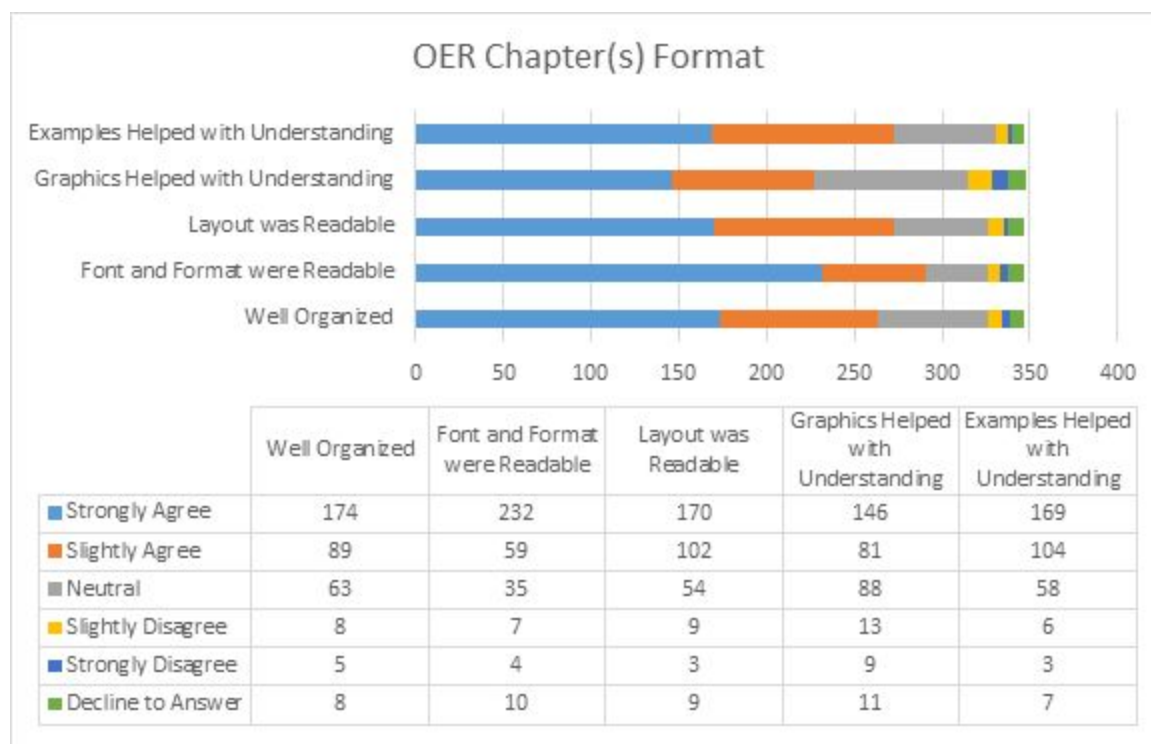
In one course in the study, the textbook was available in PDF or website format. Examining the data for the 25 student respondents in this course showed that students predominantly used the PDF version of the textbook. They also reported that reading the textbook online was easiest for them. Most students used laptops and tablets to access the book. 8% of students said they printed the book. This result may be highly influenced by how the professor implemented the textbook for their class.

Student preferences when given a choice between a PDF and a website Formats (n=25)

	I used the following formats to access the OER textbook. (check all that apply)
PDF	24
other e-reader	2
integrated with LMS	1
printed	2
	What would be the easiest way for you to use an OER textbook?
printed myself	2
read it online	20
bookstore	2
integrated with LMS	1
	What platform do you use for accessing an e-textbook? (check all that apply)
laptop	20

tablet	10
phone	7
desktop	3

Students were asked to report on how "readable" the OER textbook was. This included questions about examples used in the book, graphics, font, layout and organization. Results were overwhelmingly positive.

OER Chapter(s) Format

	Well Organized	Font and Format were Readable	Layout was Readable	Graphics Helped with Understanding	Examples Helped with Understanding
Strongly Agree	174	232	170	146	169
Slightly Agree	89	59	102	81	104
Neutral	63	35	54	88	58
Slightly Disagree	8	7	9	13	6
Strongly Disagree	5	4	3	9	3
Decline to Answer	8	10	9	11	7

OER Textbook Compared to Traditional Textbook

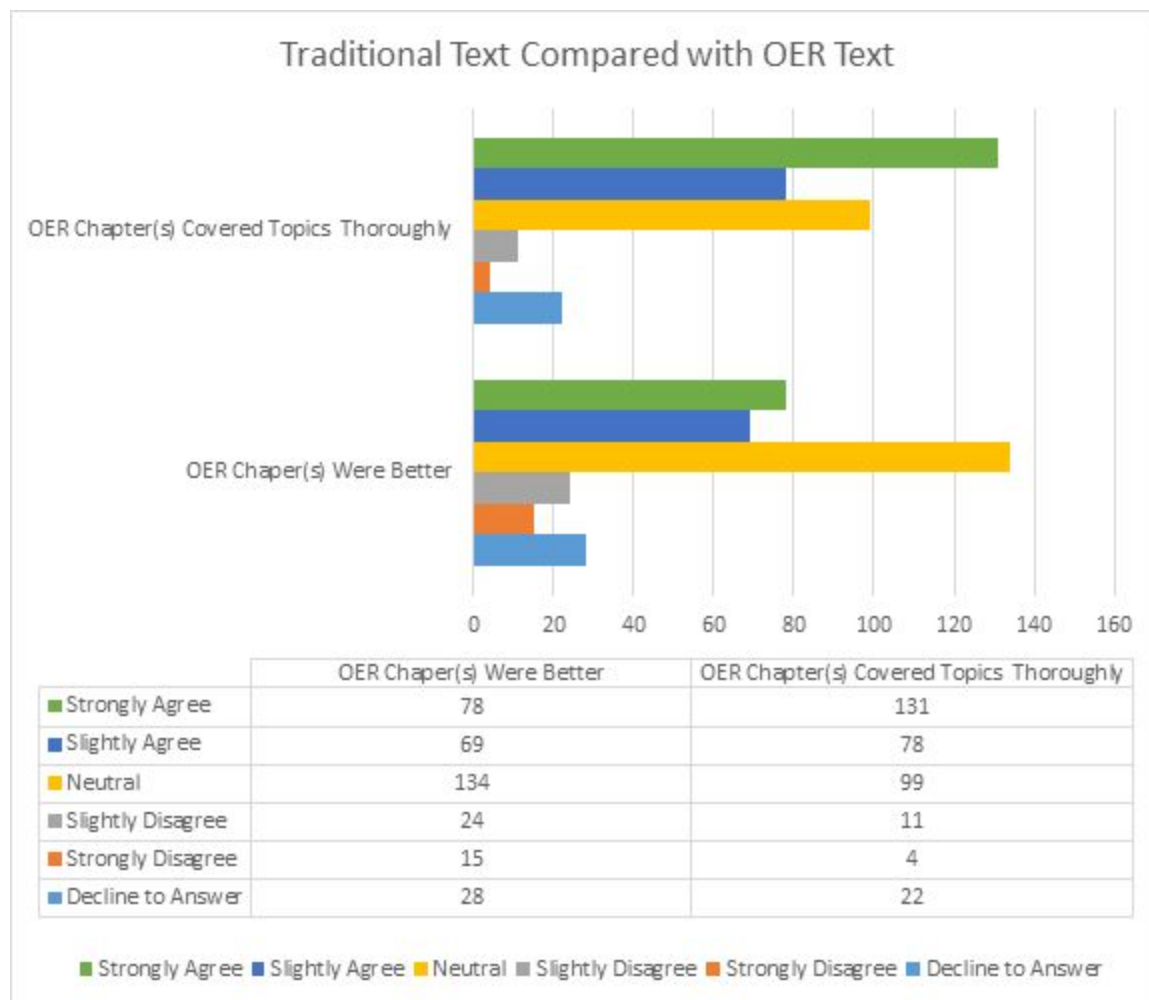When asked about reading an OER textbook, compared to a traditional textbook, there was very little difference. Of students who read the textbook once a week, a higher number was reported for the OER textbook. Of the students who read the textbook 2-3 times a week, a higher number was reported for the traditional textbook.
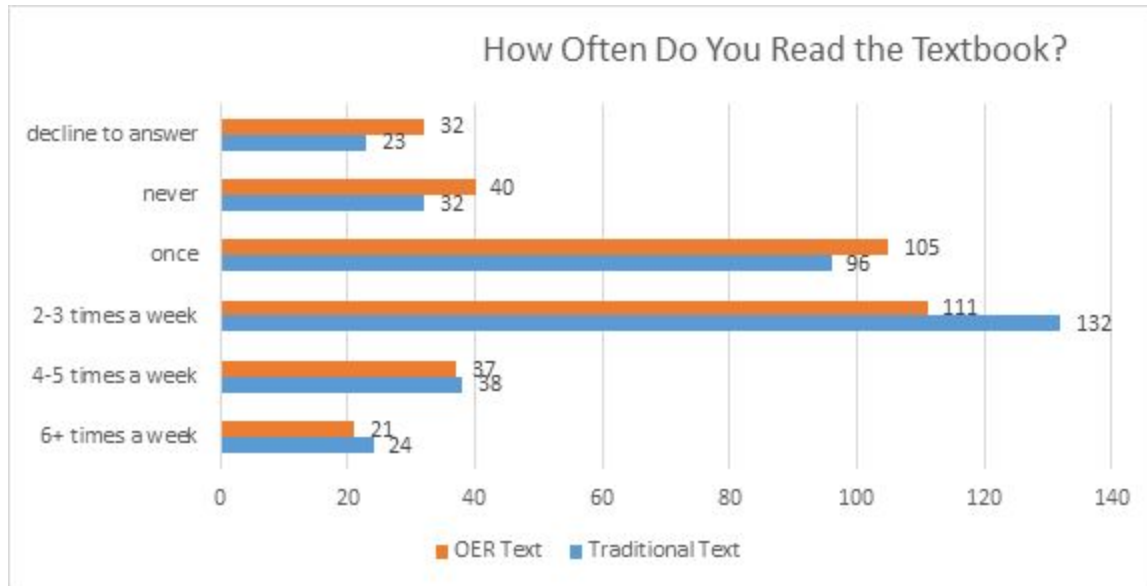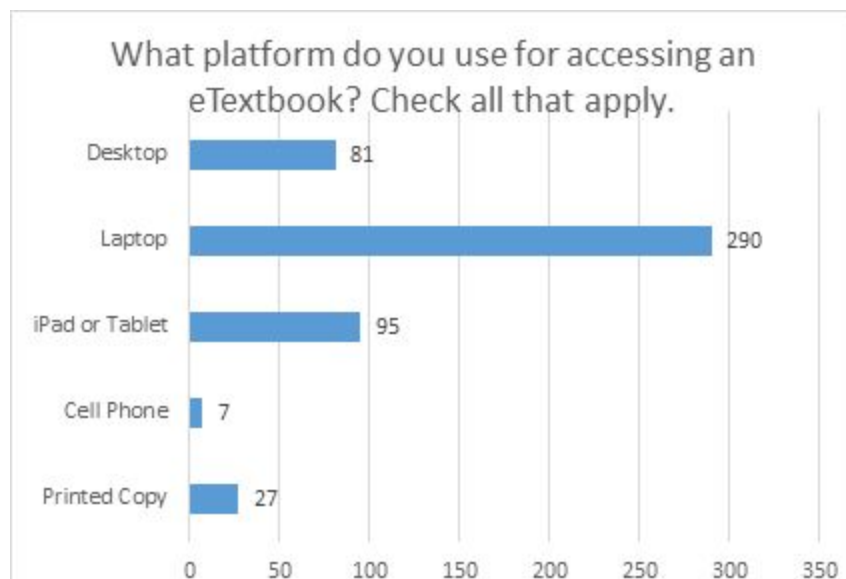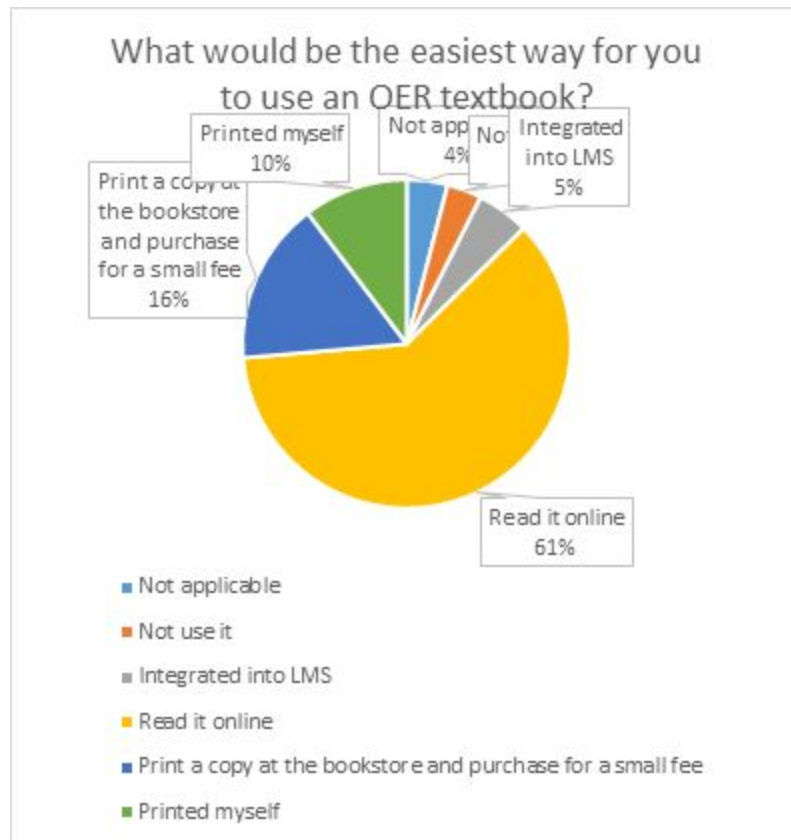

When students were asked if the OER textbook chapter(s) were better than the traditional textbook, most students answered neutral (39%). Though a high percentage of students rated the OER textbook as better (42% as "Strongly" or "Slightly Agree"), 11% rated the textbook as worse than the traditional textbook and 8% declined to answer.

Traditional Text Compared with OER Text

	OER Chaper(s) Were Better	OER Chapter(s) Covered Topics Thoroughly
Strongly Agree	78	131
Slightly Agree	69	78
Neutral	134	99
Slightly Disagree	24	11
Strongly Disagree	15	4
Decline to Answer	28	22

Strongly Agree ■ Slightly Agree ■ Neutral ■ Slightly Disagree ■ Strongly Disagree ■ Decline to Answer

When students were asked their opinion of coverage of topics, most felt that the OER textbook covered the topics thoroughly. This was a student perception of the topic. A faculty member may have a different perspective on thoroughness of the OER textbook.

Experience with OER

What would be the easiest way for you to use an OER textbook?

- Not applicable
- Not use it
- Integrated into LMS
- Read it online
- Print a copy at the bookstore and purchase for a small fee
- Printed myself

- Printed myself 10%
- Not app 4%
- No
- Integrated into LMS 5%
- Print a copy at the bookstore and purchase for a small fee 16%
- Read it online 61%

What platform do you use for accessing an eTextbook? Check all that apply.

- Desktop 81
- Laptop 290
- iPad or Tablet 95
- Cell Phone 7
- Printed Copy 27

Most students in this study used a laptop to access their materials and identified reading the textbook online as the easiest way for them to use the text.

Comments on Use of OER

What challenges did you face in using this resource?

The table below indicates the most popular responses from the students. Of the 116 responses to this question, 59 of them reported no significant challenges. This is a great indicator that OER textbooks, even non-traditional ones, work well for students. The most frequent challenge listed was that of poor or no Internet connection. Students also identified wordiness of the text, screen fatigue, and searching the textbook as challenges.

Challenge (Count of Times Mentioned)	Sample Comment
None (59)	"None, I even read other sections as they caught my attention." "I did not face any challenges when using this resource. It was easy to use and made the material easier to understand in lecture."
Poor or No Internet, connection speed (8)	"I have dial up at home, so I am heavily reliant on Internet at school and printing to continue reading things at home. Online book are very difficult for me to work with due to very poor connection at home."
Content too dense (7)	"It's not extremely easy to navigate the book and get a feel for where you are in the text, the reading is also extremely dense both literally and figuratively."
Screen Fatigue (6)	"Staring at a bright screen for long periods of time."
Finding Text (6)	"It is a great product, very satisfied with the product. My only gripe is with the search bar." "Difficulty access page numbers." "Searching for keywords, at times, brought up multiple different chapters. At times, it was hard to find the exact definition or example that I was looking for."
Navigation (5)	"Flipping through pages was time consuming. Would've rather used a paper textbook to find needed concepts." "Figuring out how to get to the right pages was difficult and took time."
Want a hard copy (4)	"I like hard copies for note-taking, highlighting, and easy referencing. The online text was not user-friendly and easily accessible."
Layout/Readability (4)	"I found the OER Textbook visually difficult to read. It's all just very bland and text and graphics don't stand out. It should be easier to find important spots in the text."

Annotation (4)	"I learn better when I can ANNOTATE in my text, and with the extra cost of adobe software to be able to annotate most students cannot afford the extra expense. Why did the whole textbook download and not just the chapter we were to review? File was big."
	"Font was so small that I stopped reading the physical textbook and began reading it in PDF. Of course, in PDF I can't underline or take notes."

Other challenges with one or two occurrences:

- The size of the textbook file was too large
- It was unclear at first, but then the student figured it out
- Graphics were hard to understand
- Textbook lacks content
- No glossary
- Grammatical mistakes were distracting
- Text needs more graphics

What can be done to improve your experience with resources like the one you used in this course?

- Positive comments "Everything was great" (19)
- Better organization and layout (8)
- Printable versions (5)
- More visuals and graphics (5)
- Better examples (3)
- Make it more engaging, not like a textbook (3)
- Introduce how to use it to first time users (2) (an online book)
- Make it accessible on all devices (2)
- Opening single chapters instead of entire textbook (1)
- Make the pages load faster (1)
- Improved page numbering (1)
- Add better explanations to the graphs (1)
- Formatting features of the textbook (1)
- Make access easier (1)
- Use language that is easier to understand (1)
- Getting a PDF file (1)
- Providing a DVD of the textbook for people without Internet access (1)

Please share any additional comments.

A sentiment analysis was performed on the general comments from the survey. Sentiment analysis is commonly used to evaluate social media comments on products and events. Several comments were incorrectly marked as negative because they contained phrases like "Cheap" and "A few parts were repetitive. However, the information was good."

After adjusting the errors, the results show 73% of the comments on the OER textbooks used were positive, 15% negative and 12% neutral (Appendix F: Content Analysis Data).

All Source Text from the Negative Comments

"For a textbook that is free, this is a pretty good one. The only issue is that the material is dry and difficult to get through because of it. Also, the online formatting is confusing and annoying to use."

"Some of my classmates seemed overwhelmed with the vocabulary and some of the examples from the text were not so clear or relevant."

"Homework questions should relate to textbook examples. They often did not."

"I didn't use the textbook all that much so my responses are more opinions about the early chapters. I personally got most of my information from my professor's lecture notes."

"I really tried my hardest to understand the material but it was like i said 'too wordy' and need step by step examples on how to do a specific problem than just reading it.. i rather stick with the required course book than this...the only good thing I like about using this new material and that was the fact of it being FREE!!...."

"There is a large population in our demographic area that have no computer, nor access to the Internet and this would encumber many in the impoverished areas. A standard DVD that would play on a TV set would help the visual learners like me not all text reading is retained unless annotated or highlighted with a personal link for retention."

"I love the idea of OER textbooks but this one was just awful compared to a standard textbook."

"The idea of online books is great but I need to have something real. I don't want to look at a screen all my life."

Selected Source Text from the Positive Comments

"Cheap textbooks will lift the burden for many students."

"Great textbook. It really helped me understand statistics concepts."

"I found it really easy and interesting to read. There weren't all these huge vocabulary words to learn and memorize, although they are sometimes necessary. I actually enjoyed learning it because it was simple but informational."

"I hope we can transition into this low-cost/free textbook in the near future. Not only would it be extremely helpful financially, but I found it a lot easier to read than other ebooks I have used."

"I think this an amazing resource and extremely helpful for those students like myself who aren't as financially fortunate as others." (There were many comments about textbook affordability.)

"I will recommend it to my friend because i think there is advantage to it compare to the textbooks that is instead of taking your heavy textbook anywhere you go, you can just pull it up from your iPhone or iPad."

"It is very convenient how I can click on some words and it shows me the definition right away."

"Some good aspects about the text are that the chapters and section organization is good, and it's especially easy to browse for the information you need using the chapter/section sidebar."

"THANK YOU! College textbooks are so overpriced and I can't express my gratitude enough!"

8. Fall Pilot Project: Discussion

- *Quality: Although the COOL4Ed textbooks have been peer-reviewed, to what extent does the quality of OER materials hold up under classroom conditions? What does the actual use of OER materials tell faculty about their quality? How do students judge the quality of OER materials they encounter in courses? Do OER materials have any effect on student satisfaction with a course?*

In comparing the OER textbooks with the traditional textbook for the course, most faculty rated the OER textbook as comparable (5 of 16 faculty) or better (7 of 16 faculty). In questions related to subject matter, instructional design, and editorial conventions very high marks were given to the OER textbook.

When asked how easy it was to implement OER in the classroom, most faculty reported that it took very little time to explain it to students (11 of 16 faculty agreed) and that it was easy to provide to students (15 of 16 faculty agreed).

The OER textbooks appear to hold up very well under classroom conditions. When asked about the ancillary materials for the textbook, the reviews on quality and on time to implement, the results were mixed. This suggests that if faculty are going to adopt OER textbooks, it may be worthwhile to give them support in finding or developing the ancillary materials.

When asked what support materials would be most useful, faculty rated the test bank as the number one item. Faculty also indicated a need for presentations and problem sets.

	The quality of the OER textbook support materials supported student learning.	It took a significant amount of time to implement the OER textbook support materials.
■ Strongly Agree	3	2
■ Slightly Agree	2	2
■ Neutral	3	1
■ Slightly Disagree	4	3
■ Strongly Disagree	2	3

Student ratings of the OER materials were also high. 77% of students said the OER chapter(s) used in the study met their expectations. (3% said OER didn't meet expectations and 20% were neutral.) When asked to compare the OER textbook with the traditional textbook, students were mostly neutral or positive on the quality of the textbook. Students did rank the coverage of topics more highly in the OER textbooks.

	OER Chaper(s) Were Better	OER Chapter(s) Covered Topics Thoroughly
Strongly Agree	78	131
Slightly Agree	69	78
Neutral	134	99
Slightly Disagree	24	11
Strongly Disagree	15	4
Decline to Answer	28	22

- *Workload: How does the incorporation of OER materials into class meetings and courses affect faculty time and kinds of faculty labor? Does the incorporation of OER materials require more or less faculty time? More or less faculty labor? Are faculty prepared to use OER materials? Or, does the use of OER material require faculty development?*

Faculty participating in this study had a choice of how much of the OER textbook they wanted to adopt. Some faculty did one chapter, others did several chapters.

When asked their agreement with "The OER textbook chapter(s) took the same amount of time to prepare as a traditional textbook for the class," the responses were split. Examining the amount of the textbook adopted and the type of course shows that in courses adopting one or two OER chapters, two faculty strongly agreed that the workload was the same as a traditional textbook, while three faculty slightly disagreed. In courses that adopted over two chapters (many adopted the entire textbook or a significant part of it), four faculty strongly agreed that the workload was the same as a traditional textbook, and four faculty slightly disagreed. OpenStax is the gold standard for OER textbooks, coming professionally edited and with fully developed support materials. When we look at the results and identify which courses (six of them) adopted an OpenStax textbook, more faculty "slightly disagree" that the workload is the same. However, the number of participants in the study are 16, so the numbers are very small.

When asked about the significance of the time spent implementing support materials, faculty were split, four reporting a significant amount of time spent, six reporting and one person who was neutral.
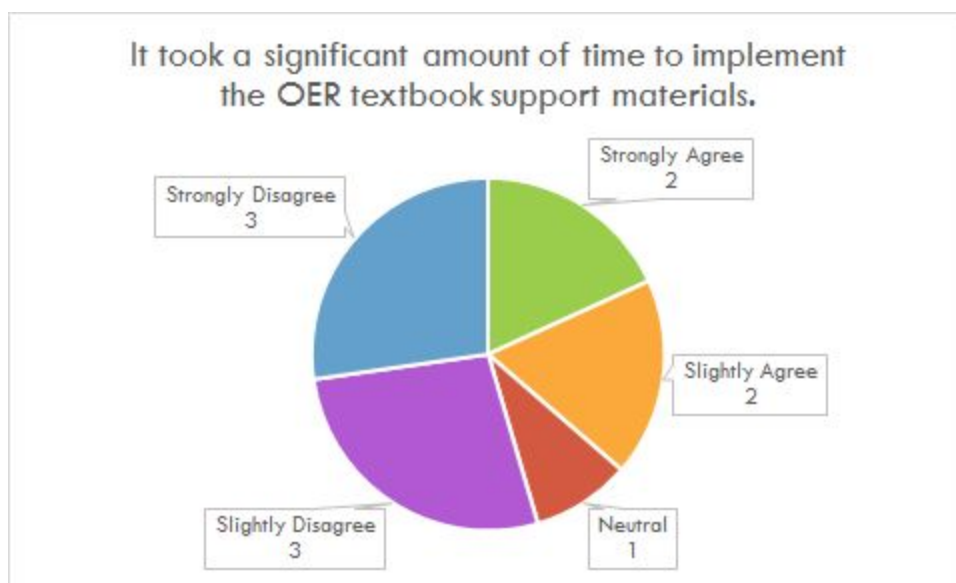
It took a significant amount of time to implement the OER textbook support materials.

- *Performance: Does the use of OER materials lead to any significant differences in student performance? Is there any relation between OER use and learning outcomes? Does the use of OER materials affect student engagement with the classroom and learning?*

When asked to compare the OER textbook with the traditional textbook for the course, the majority of faculty agreed that the OER was thorough and complete compared to the traditional textbook. The majority of faculty agreed that the students learned as well with the OER textbook in comparison to the traditional textbook for the course.

Student perceptions of learning agree with the above. Compared to the traditional textbook, 42% of students rated the OER textbook as better, 11% as worse, 39% as neutral and 8% declined to answer. When students were asked their opinion of coverage of topics, most felt that the OER textbook covered the topics thoroughly.

When faculty were asked about the quality of the OER support materials to support student learning, the results were mixed. Five faculty agreed that the OER support materials had sufficient quality to support learning and six faculty disagreed. Three answered neutral.

- *Usability: How difficult or easy is it for faculty and students to use existing OER materials? Can this usability be improved in terms of technological infrastructures -- platforms and media? (For instance, how well do existing OER materials fit with current CMS (Course Management System) or LMS (Learning Management System) platforms? How easy or difficult is it for students to navigate and manipulate OER materials?) What role does ICT (Information and Communication Technology) literacy play in the use of OER materials for both students and faculty? What role does ICT literacy play in student and faculty satisfaction with OER materials? (See also recent study on the use/success of ChemWiki: "Assessing the Impact and Efficacy of the Open-Access ChemWiki Textbook Project")*

Faculty and students who participated in this study found the OER materials overwhelmingly easy to use and access. Some issues arose with availability of Internet and access to computers. Sometimes, layout and clarity were an issue. However, these were very rare

instances. Faculty had a relatively easy time making the OER textbooks available to students and explaining how to use them.

- *Self-Reflection: To what extent does the use of OER materials encourage faculty to reflect on, and possibly adapt, their teaching practices?*

Faculty agreed that use of the OER textbook encouraged them to think about teaching.

	The use of the OER textbook chapter(s) encouraged me to reflect on my teaching practices.	The use of the OER textbook chapter(s) changed my usual way of teaching.
Strongly Agree	7	2
Slightly Agree	7	7
Neutral	0	2
Slightly Disagree	0	3
Strongly Disagree	1	2
Decline to Answer	1	0

Strongly Agree Slightly Agree Neutral
Slightly Disagree Strongly Disagree Decline to Answer

9. Fall Pilot Project: Faculty E-Portfolios

Fifteen instructors reported on their OER textbook adoptions. (These e-portfolios can be found on MERLOT; see conclusion of this section for links). This cohort taught at both CSU and California Community College campuses. The e-portfolios offer four topics for faculty to report feedback on their OER textbook adoptions: adoption motivation; student feedback; teaching and learning impact; and curricular revision.

In broad strokes, affordability was the key factor for faculty adoption of OER textbooks. Most students responded positively to the OER textbooks, especially to the quality of the textbooks. Few instructors noticed a significant impact on student learning or retention. OER textbook adoption was associated with minimal curricular revision.

Adoption Motivation

The overwhelming motivation for adoption is cost (and cost-related access), i.e. the zero cost of OER textbooks as compared to publishers' textbooks. Other instructors mentioned motivations like: multimedia capabilities of OER textbooks (Taylor, Matsumoto); anytime, multiple path availability of OER textbooks (Harris, Rahim, Corbett (somewhat)); customization (Nelson, Matsumoto, Corbett, Sharp (somewhat)); assessment of OER quality (Grindstaff).

Student Feedback

Student feedback on their OER textbook experience was generally very positive. One instructor, who administered a survey to his class, reports that: "When asked whether they liked the OER book better than the required class textbook, responses ranged from 'neutral' to 'strongly agree'" (Collins). A significant part of this positive experience was related to cost, as one instructor notes: "Students are heartened by the possibility of doing away with the burden of exorbitant textbook costs. When I presented the PDF text of *Introductory Statistics* in my statistics class, students were overjoyed when they heard they can download it for free" (Rahim). Another reports that: "students were overwhelmingly positive and appreciative when they were informed of the OER project and its primary objective of cutting textbook costs for college students" (Totton).

While students appreciated the zero cost of OER textbooks, most instructors also note that the quality of the OER textbook (in terms of clarity, use of examples, structure, style, and thoroughness) was also positively evaluated by students. In one class survey, a student noted that: "Two things I liked about the online reading is objective layout and the easily understandable content" (Harris). Another instructor who surveyed their class reports that: "When asked to compare the thoroughness of the OER book with the required class textbook, responses ranged from 'neutral' to 'strongly agree'" (Collins). Another instructor notes that: "What students particularly appreciated was the fact that the use of TI-83/84 calculators in solving various statistical problems was clearly demonstrated in the body of the text itself" (Rahim). It is safe to conclude that -- regardless of media or cost -- students found the OER textbooks to be either comparable or superior in quality to publishers' textbooks.

Student raised several issues in terms of the accessibility of the OER textbook. On the one hand, many students are reported as liking the portability and convenience of digital textbooks.

One instructor notes: "Students appreciate the fact that the text is easily accessible, and many of them even access the book on either their laptop computers or by using their smartphones during class when working on written responses to the textbook and specific chapter content" (Deare). The digital medium of the open textbooks could also however pose accessibility problems. For instance, at least one instructor notes some confusion over accessing online textbooks: while students "seemed excited at the prospect of free online texts, I was soon swamped with comments about 'hardware'" (Moran). In addition, at least one instructor notes that the affordances of digital text may inhibit conventional practices like annotation. Likewise, paper and pencil can still prove valuable for certain tasks: "With homework exercises," the same instructor reports, "students found it easier to work with problems on paper; they could circle problems, underline, and mark the spot with a finger while copying the problem which is not easy to do on a computer monitor" (Matsumoto).

Teaching and Learning Impacts

The impact of OER textbooks on teaching and learning was measured by the e-portfolio instructors according to four indices: collaboration with other faculty; use of a wider range of teaching materials; improvements in student learning; improvement of student retention. Instructors also indicated whether they had seen any unexpected results in their use of OER textbooks.

There was only one measure which showed a clear positive; 11 out of 15 faculty reported using a wider range of teaching materials when they adopted OER textbooks. Most faculty (11 out of 15) did not find increased collaboration with other faculty. On two important indices, there was no clear consensus: 6 out of 15 faculty reported that OER textbook use improved student learning, but most faculty (9) were unsure if student learning improved. Likewise, only three faculty reported an improvement in student retention; again, the majority (12) were unsure if OER textbooks impacted student retention. About half of the faculty reported unexpected results of their OER textbook adoption but there was no description of these unexpected results.

When instructors did broaden the range of their teaching materials, the digital media of the OER textbook encouraged this wider range. For instance, two instructors reported using videos linked to the textbook (Taylor, Schroeder). Other instructors linked the textbook to Internet resources. For example, one instructor added primary sources, available on the Internet, to the textbook (Corbett).

Although faculty generally don't report increased collaboration through OER textbook adoption, at least two instructors cite the OER itself as a catalyst for collaboration. For example, one (Collins) sought help from colleagues in locating an appropriate OER textbook. Another (Deare) shared the same OER textbook with an instructor for a different course section and, so, traded notes and reactions to the textbook.

Although most instructors could not attribute any improvements in student learning or retention to OER textbook adoption, a handful did indicate some learning improvements. These ranged from "improved grammar" (Nelson) to one report of "87% of students" producing "superior assignments" (Corbett). At least one instructor cited the low cost and greater accessibility of the OER textbook as a possible factor in improved student learning: "I will say that since the textbook was free and easily accessible . . . [this] could have led to an overall increase in the number of students who learned the text" (Deare). Another instructor notes that the digital media

of the OER textbook and availability on devices like the iPad increased student engagement and, hence, retention (Lamourelle).

Curricular Changes

Only one instructor reports making significant changes to his or her curriculum. Most of the curricular changes noted by the instructors were minor and of the sort typically required by adoption of any new textbook. These minor revisions included: adding new quizzes and assignments, adding new modules or lessons, and adjusting lectures. For instance, one instructor describes that "lessons on genre, grammar, prewriting and revision, as well as research have been adapted to incorporate this text" (Nelson). Another says, "I have added a short-answer writing assignment based on the addition of the supplemental chapter" (Harris).

The instructor who reported making significant changes to the class curriculum does raise a significant issue. She states: "Faculty workload increased upon adoption of the new textbook in order to (re-)create and re-organize lectures (about an hour per week), homework assignments (about an hour per assignment) and quizzes (about an hour per quiz)" (Sharp). The instructor estimates that these changes required an extra two to four hours a week of instructor-time. Again, this workload increase might happen with any new textbook adoption. On the other hand, the possible workload increases associated with a transition from print to digital textbook (for those instructors who adopted a digital version of the open textbook) should be recognized.

Links to E-Portfolios[5]

Stand Up, Speak Out: The Practice and Ethics of Public Speaking

Biology for Undergraduate Science Majors

Rhetoric & Composition

Child Development: Attachment Through the Life Course

Principles of Marketing

A Primer on Communication Studies

History and Theory of Graphic Design

College Trigonometry

Introductory Statistics

Business Communication for Success

U.S. History

Child Development: Attachment Through the Life Course

College Physics

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[5] Other faculty e-portfolios not associated with the Fall Pilot Project are available on COOL4Ed: http://coolfored.org/facultyshowcase.html

Environment Concepts and Issues: Concepts of Biology

Humanities: The Beginnings of Civilization

10. Fall Pilot Project: Recommended Best Practices

Successes

Participants reported that students appreciated not having to buy a textbook, which saved them money, or carry around heavy textbooks. Students who could not purchase conventional textbooks due to financial reasons were able to access the OER textbooks right away. In some classes, the OER was shared via Blackboard Collaborate, which allowed students to choose between printing it out or reading online. Students liked having the material in different formats for easier access. A faculty who used one chapter of the Introduction to Statistics textbook reported that s/he will adopt the entire OER next semester since the students' response was extremely positive.

Faculty found that OER was pedagogically advantageous. They noted that creating lecture slides for some OER was easily accomplished. OpenStax, for instance, provides images as separate downloadable files. One faculty reported that while students tend to not take the time to read and refer to images when they are using physical textbooks, OER material in video form overcame this issue as the students were presented with the images while voiceover provided information. In addition to videos, OER advantages included searchability, direct links, and other features that are not replicable in a physical textbook. Faculty discovered that students performed (~10points) higher on exams, experienced better grades, and improved retention when using OER. Faculty expressed appreciation for the support they received for this project to make adjustments and improvements to their courses that they had thought about for a long time, but never had the support or push to implement.

Issues

Making sure that students have access to OER in the format they prefer came up multiple times in the discussion. Some students did not like reading on a screen, and thus printed the textbook out to read. Others used laptops, tablets, and smartphones. Faculty noted that it is important to have bookstore support for print-on-demand for students who prefer to read on paper. They also pointed out that economically challenged students may not have access to Internet at home or an appropriate device to access OER. Sometimes students used these as an excuse for not completing assignments, even though a computer lab is available on campus. Students were still taking notes on a hard copy or a separate paper rather than on the PDF. This suggests that the annotation capability of the textbook is not adequate. Some textbooks also fell short in terms of usability. One faculty who preferred to pull out one or two chapters from an OER found that the textbook can only be printed in its entirety and, therefore, was lacking in flexibility of the reuse and remix. Other faculty discovered that the test banks were missing or otherwise not useful and that the OER covered breadth, but not sufficient in depth. It was also noted that text-heavy OER was more difficult for ESL students to comprehend and that retention was an issue when students were reading on a screen, especially a smartphone.

Student Needs

- Want to be able to read OER in the preferred format (online, from a SmartPhone, in print, etc.)
- Do not want to have to get a new device as a result of OER textbook
- Do not want not having an Internet connection at home to be a problem for OER textbooks
- Want reliable WiFi so they can access the book during class

Requests for OER Providers

- Develop more OER in commonly taught courses such as Human or Personal Communication
- Recommend notetaking/annotation software or app (ex. Kurzweil 3000) for each textbook
- Provide OER textbooks in variety of formats (online, PDF, iBook, etc.) that are accessible from multiple platforms (SmartPhones, tablet, laptop)
- Make optional print copy readily available
- "Streaming" textbooks similar to subscription streaming from Netflix
- Make individual chapters available for printing or online access
- Develop more and better test banks
- Always include author, contributor, and editor credentials on the OER
- Develop OER marketing material (e.g. brochure) that includes correct information about articulation and quality of the OER as well as about the process of OER authorship (the peer review process, author/contributor/editor credentials) (Refer to BCcampus and OpenStax processes)
- Add text-to-speech option so that students can listen to the textbook

Recommendations at Institutional Level

- Standardize or remove obstacles in the adoption approval process
- Secure IT or DSPS center support for OER adoption
- Provide funding to faculty, especially for adjunct, to make the transition to OER and/or improve a particular OER textbook
- Build relationships with campus partners that can help support OER (Bookstore, Library, Disabled Student Center, eLearning, Students, Technology Services)
- Provide funding to support faculty who purchase apps needed to use the OER more robustly
- Incentivize faculty to adopt OER by ramping up institutional support and encouragement
- Devise better printing options/resources on campus for students (e.g. have Reprographics Department print out the textbook at a very nominal cost)
- Support departmental textbook selection committees by offering incentives to at the department level
- Equip bookstores with tablets for rent/use with the OER material already uploaded to device
- Ensure access to hardware and Internet for all students who are assigned OER

Recommendations to Enhance Faculty Development

- Develop video on "what is OER" and on CA-OERC's project[6]
- House all videos/tutorials on [CA-OERC YouTube channel](#)
- Create a one-stop-location for all OER studies, user stories, etc.[7]
- Gather and make available information about how faculty are using OER, providing feedback to faculty who are interested in OER adoption and want to know what their colleagues think[8]
- Send PR information in multiple ways (emails, tweets, mailers) so that more faculty will become aware of OER[9]
- Show faculty that the quality of OER is on par with physical textbooks by studying more OER adoptions and providing evidence of OER benefits[10]

Pedagogical Support

- Develop student tutorial video on how to read & use digital textbooks[11]
- Develop a library of tutorials for a variety of annotation apps and tools
- Provide text-to-speech capability for students
- Allow faculty to continue making book selections (e.g. if one faculty member teaching a highly enrolled course wants to use an OER textbook [not the traditional textbook that other instructors are using], support that activity)
- Give support to faculty implementing OER textbooks for modification of the text and developing ancillary materials when necessary
- Encourage faculty to share their OER development with a larger community
- Break the book up so it's easy to download

Classroom needs

- Projector or media cart, screen (ceiling-mounted preferred), computer
- Rolling tables and chairs
- Smart boards
- Free and reliable WiFi
- Tablets students can use during class
- Install technology that would allow faculty to present the textbook on the screen and make notes directly onto the projected image

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[6] See the CA-OERC's [Toolkit #1](#) and [Toolkit #2](#). Though these are intended to help applicants for AB 798 funding, they are also applicable to anyone interested in conducting professional development about adoption, use, and implementation of OER textbooks and materials. See especially [Reading on Electronic Devices: A Tutorial](#).

[7] The CA-OERC and COOL4Ed have created a one-stop online repository with [COOL4ED.org](#)

[8] See [faculty e-portfolios](#) in COOL4Ed. Videos of user stories will be added in mid-April (and this document and the toolkits will be updated).

[9] See also "[Marketing Strategies](#)" (Community College Consortium for OER), [How to](#) (NCVO KnowHow NonProfit), "[7 Creative Ways NonProfits Can Use Social Media](#)" (Hiba Haider).

[10] See [Toolkit #1](#) for an extensive bibliography of peer-reviewed research studies. See specifically "[A multi-institutional study of the impact of open textbook adoption on the learning outcomes of post-secondary students](#)" (Lane Fischer, John Hilton III, T. Jared Robinson, David A. Wiley, *Journal of Computing in Higher Education*, Dec 2015, 27:3, 159-172, PDF)

[11] See [Reading on Electronic Devices: A Tutorial](#).

11. Conclusions & Ongoing Work

In both the focus groups and the Fall Pilot Project, faculty identified several issues with adopting, implementing, and using OER textbooks. However, some of these issues have been resolved with the work of the CA-OERC and/or MERLOT.

OER & PR

OER in general suffers from a lack of recognition, a lack that the CA-OERC spent a considerable amount of time attempting to overcome. Faculty are often already using OER materials but are not aware that they are participating in OER. Though proponents of OER have been working to publicize OER as well as open access, OER in general still suffers from a lack of extensive outreach and education. Rather than OER textbooks and materials needing further infrastructure, education about existing OER resources and materials needs to be widely distributed across colleges and universities.

Faculty Development & Campus Efforts

In its work, the CA-OERC has found that faculty development programs often aid in the adoption and use of OER materials. With this in mind, the CA-OERC created toolkits, admittedly for the development of proposals for the Textbook Affordability Act (Bonilla 2015) but nonetheless relevant to any campus engaged in the adoption of OER materials.

Toolkit 1 (Appendix G) offers relevant materials and resources on:
- What is OER? What is an open textbook?
- A bibliography of case studies, user stories, and peer-reviewed articles on adopting OER textbooks and materials
- A list of resources for finding OER textbooks and materials
- Recommendations on how to advocate for OER adoption to particular audiences (faculty, deans, presidents, and other stakeholders)

Toolkit 2 (Appendix H) offers relevant materials and resources on:
- Crafting faculty development workshops
- Demonstrating faculty use of OER textbooks
- Tutorials on finding OER materials once faculty have been identified
- Tutorials on student use of OER textbooks
- Information on ADA compliance
- How to peer review OER materials
- Identifying best practices to facilitate OER textbook adoption, implementation, and use
- Creating a sustainable OER adoption plan

Toolkit 3 (Appendix I) offers videos of user stories by faculty who have already adopted, used, and implemented OER textbooks and materials as well as further information on OER textbooks and ADA compliance.

Of special importance is the video tutorial for students on how to study from OER materials: Reading on Electronic Devices: A Tutorial (Bonilla 2016) (Appendix J). See also the CA-OER Council's YouTube Channel for past webinars on a variety of topics.

Continuing Rigorous Peer Reviews of OER Textbooks

The system of rigorous peer review for OER textbooks is an essential element for faculty adoption of OER, but it requires a significant amount of effort to administer. Though some publishers, such as OpenStax and BCcampus, are dedicated to providing a space for peer review of their OER textbooks, this responsibility needs to be borne by institutions, not publishers. Rigorous peer review of OER textbooks and materials is a primary concern expressed by faculty in this focus group. In 2014, the CA-OERC created the infrastructure for and conducted rigorous peer review of OER textbooks (see peer review rubric (Appendix K)) based on 50 high-impact courses offered in the CCC, CSU, and UC systems. All of those peer reviewed materials are available on COOL4Ed. Institutions, rather than publishers, need to continue this good work of reviewing new and revised OER textbooks

Repository for OER Textbooks and Materials

The request for a repository of actual OER materials that are freely available for sharing is already fulfilled with MERLOT, a curated collection of free and open online teaching, learning, and faculty development services contributed and used by an international education community. MERLOT was created in 1997 and continues development of OER materials through its international community even today.

Digital Literacy: A Tutorial on Reading & Studying

Many faculty expressed a concern about students' digital literacy, especially regarding students' ability to study from OER textbooks and materials. The CA-OERC has created "Reading on Electronic Devices: A Video Tutorial" (Bonilla 2016) that facilitates proper study habits and use of digital reading materials.

Sustainability

Making OER textbooks into a familiar option for faculty and common experience for students requires adequate, consistent support. AB 798 (Bonilla, 2015) and its OER Adoption Incentive Program represent an important step forward in this commitment. However, more may be required. Campuses and systems might need to consider durable incentives and types of recognition for OER activity similar to the CSU's Affordable Learning Solutions initiative. Long-term financial support might be achieved through a variety of configurations: direct State funding; system-wide budgeting; campus-based instructionally-related funds; campus- or systemwide student micro-fees. In any case, no OER textbook initiative can survive, much less prosper, without fiscal nutrition.

CSU, CCC & UC Collaboration

SB 1052 (Steinberg, 2012), AB 798 (Bonilla, 2015) (Bonilla), and CA-OERC have established California public higher education as a significant innovator in the OER movement. Maintaining this position will require a long-term perspective, prudent cultivation of an emergent OER ecosystem of knowledge, institutions, and people, and, most importantly, continuing leadership.

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Appendix A

Fall Pilot Project Description

Understanding Important Factors for Adopting Free, Low-Cost, and Open eTextbooks

[CA-OER Council](#) **Pilot Project - Fall 2015**

V1.1 - 3/9/15
CA-OER Approved 3/9/15
IRB Approval (CSU Long Beach) [741757-4] 6/22/15

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See also [webinar descriptions](#) (for scheduling), [e-Portfolio description](#), & [project timeline](#)

Description

CA-OER has been identifying prospective free, low-cost, and open etextbooks for possible adoption by CCC, CSU, and UC faculty and has been implementing a rigorous peer review process so faculty are provided feedback and evaluation information about the qualities of the etextbooks to help inform adoption decisions. Making links to the etextbooks conveniently available through the www.cool4ed.org website and making the reviews and faculty eportfolios conveniently connected to the etextbooks are two important steps to increase the opportunities for the adoption of free, low-cost, and open etextbooks.

The next step to design and support the adoption process is to determine if there are additional, important factors that affect the decision to adopt OER textbooks. CA-OER is conducting an applied research project in the Fall 2015 term to acquire data about these additional enablers and barriers to faculty and student adoption. The findings will help inform strategies for scaling and sustaining strategies for improving adoption in addition to understanding what services are necessary to support faculty adoption.

Outcomes for CA-OER Council

To better understand the adoption process, and so design practices and strategies to encourage faculty adoption of OER materials, the CA-OER Council will use the Fall 2015 pilot project to explore the following research questions:

- Quality: Although the COOL4Ed textbooks have been peer-reviewed, to what extent does the quality of OER materials hold up under classroom conditions? What does the actual use of OER materials tell faculty about their quality? How do students judge the quality of OER materials

they encounter in courses? Do OER materials have any effect on student satisfaction with a course?

- Workload: How does the incorporation of OER materials into class meetings and courses affect faculty time and kinds of faculty labor? Does the incorporation of OER materials require more or less faculty time? More or less faculty labor? Are faculty prepared to use OER materials? Or, does the use of OER material require faculty development?
- Performance: Does the use of OER materials lead to any significant differences in student performance? Is there any relation between OER use and learning outcomes? Does the use of OER materials affect student engagement with the classroom and learning?
- Policy: Does the use of OER materials pose any challenges for existing policy?
- Usability: How difficult or easy is it for faculty and students to use existing OER materials?   Can this usability be improved in terms of technological infrastructures - - platforms and media? (For instance, how well do existing OER materials fit with current CMS (Course Management System) or LMS (Learning Management System) platforms? How easy or difficult is it for students to navigate and manipulate OER materials?) What role does ICT (Information and Communication Technology) literacy play in the use of OER materials for both students and faculty? What role does ICT literacy play in student and faculty satisfaction with OER materials? (See also recent study on the use/success of ChemWiki: "Assessing the Impact and Efficacy of the Open-Access ChemWiki Textbook Project")
- Self-Reflection: To what extent does the use of OER materials encourage faculty to reflect on, and possibly adapt, their teaching practices?   Do students notice a difference in pedagogical practices when faculty use OER materials?

Summary of research plan: Invite CCC, CSU, and UC faculty who have applied to review or have reviewed one or more of the CA-OER selected etextbooks: 1) to select 1 or more chapters from the etextbooks that they have already reviewed or applied to review; 2) to implement this material in their Fall 2015 course; 3) and, to assess how well (or not) the etextbook worked for both faculty and students. Alternatively, to conduct a wide study, we have invited faculty to include courses for which they will use OER textbooks that are not included in COOL4Ed.

Selecting faculty: CA-OER has already identified CA faculty willing and interested in free, low-cost, and open etextbooks through the review project, and these faculty are already familiar with 1 or more of these etextbooks. Thus, CA-OER's invitation to test the use of a chapter or two in a classroom setting would give these faculty a reasonably scoped task that might significantly increase our understanding of the adoption process for free, low-cost, and open etextbooks.

Support Provided To Faculty Volunteers:
- Grant will pay the faculty participant, upon completion, to conduct the assessment project ($1,000).
- CA-OER will provide some general guidelines and expectations about how OER textbooks could be used for this research project.
- CA-OER will provide templates for:
  - a communication to students about the project and its purpose
  - an online survey for students to evaluate their experience using the etextbook (informed consent)
  - a survey and an ePortfolio for the faculty to share their reflections about the adoption

process. ([Informed consent](#))

- CA-OER will provide the faculty a summary of their students' evaluation and a summary of the findings across all the students and faculty participating at the conclusion of the project.
- COOL4Ed has earned IRB approval and then CA-OER can use the data to write a research project for publication (Scholarship of Teaching and Learning with Technology).

Task:

Faculty participants (past reviewers and reviewer applicants) will select a small section of their course for which they would use a portion of a CA-OER-selected etextbook as an additional teaching resource. The faculty will decide how and when to blend the use of the etextbook into their courses. The portion of the OER textbook could be used later in the Fall term, providing them some time to prepare for the changes in instruction. There would be little additional cost for the students (the etextbooks are free in most cases[12]), and the faculty would continue to use their planned course materials for the vast majority of their course, minimizing disruptions to their teaching plans and practices.

The faculty participating in the program will document their OER adoption using an ePortfolio, which will include:

1. Description of the course and bibliographic information about the selected OER textbook (including cost of OER textbook and URL used to link to the textbook)
2. Description of the course curriculum aligned with the section of the OER textbook
3. Identification of the section of the OER textbook being used
4. Description of assignments and learning activities that will employ the OER textbook, such as:
   a. Reading assignment
   b. Homework assignment(s)
   c. In-class assignment(s)/activities
5. Assessments of the positives and negatives of the adoption of OER textbook, for example:
   a. Assess faculty workload requirements
   b. Assess the quality and reliability of the OER textbook
   c. Assess student access to OER materials
   d. Assess reactions of students to the OER textbook

CA-OER would collect all this information and with the permission and approval of the faculty, write a report and have faculty construct an ePortfolio summarizing the results of the project. The COOL4Ed Team will provide the support needed to produce the ePortfolio and/or report as needed.

Faculty will be provided an online student survey asking students about, including but not limited to[13]:
1. General textbook affordability issues (see US Dept of Ed survey conducted by Florida Virtual Campus)
   a. Does the cost of textbooks result in you …. taking few courses, not buying the required textbook, etc.
   b. Would access to a free etextbook help you…do better, take more courses, etc.

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[12] For those very few etextbooks that have a fee, we will work with the publishers and the faculty to obtain free versions for their student use.
[13] CA-OER members are in the process of creating the survey for both faculty and students for submission to IRB. According to the timeline, a draft of the survey instrument will be provided to faculty for discussion and input.

2. Specific assessment of OER textbook used in their course
   a. Assess expectations for using OER textbooks (retrospectively – does it meet your expectations?)
   b. Assess quality of learning experiences
   c. Assess preferences for digital and print
   d. Did they buy the assigned textbook
   e. How much do you really use the free/low-cost OER textbook

Budget:

    10-30 participants X $1,000 = $30,000 for faculty stipends

Schedule

    Note (approximately):
    Quarters Sept 24 to about Dec 10
    Semesters Sept 2 to about Dec 19

1. Send out inquiry to current CA-OER reviewers to identify potential participants (March 25) with a due date for application materials of April 20, 2015
2. Notify selected participants -- May 1, 2015
3. Send vendor forms & informed consent (via Theresa) - May 1, 2015
4. Check that proposed OER textbooks have been catalogued in MERLOT -- May 1, 2015
5. Receive returned commitments from faculty participants & send documentation – May 20, 2015
6. Faculty Participation in Project
   a. Complete paperwork for payment of stipend and Informed Consent – July 2015
   b. Faculty prepare materials to teach a chapter(s) from an OER textbook during Fall 2015 – August 2015
   c. Participate in 2 hour webinar(s) for participants to review guidelines and expectations, answer questions, discuss templates for ePortfolios, and survey tools; discuss/demonstrate Merlot ePortfolio content builder (requires Merlot account); (see sample: http://contentbuilder.merlot.org/toolkit/html/snapshot.php?id=6198670106193 7) – August 14, 2015 (semesters), September 15, 2015 (quarters)
   d. Faculty inform students about the OER textbook research project being done during the course. (start of term)
   e. ePortfolio #1 - Faculty begin adding to ePortfolio work-in-progress using Merlot content builder (see sample: http://contentbuilder.merlot.org/toolkit/html/snapshot.php?id=6198670106193 7) – Focus on adaptation of free text, time involved and obstacles and benefits. – September 21 (semesters), October 15th (quarters)
   f. Participate in 2-hour webinar for faculty to discuss progress and problems – October 1

g. ePortfolio #2 - Faculty add to ePortfolio work-in-progress using Merlot content builder on implementation of OER textbook (how it's working) (see sample: http://contentbuilder.merlot.org/toolkit/html/snapshot.php?id=6198670106193 7) - Focus on Teaching and OER, Access, Readability. November 2 (semesters & quarters)

h. Participate in 2-hour webinar for faculty to discuss progress and problems – December 1, 2015 (semesters & quarters)

i. Administer (anonymous) student surveys, including informed consent (IRB approval), at the conclusion of the use of the OER materials - [end of term or earlier as requested]

j. Completed faculty surveys due to CA-OER Council by December 30th (semesters), December 15th (quarters)

k. ePortfolio #3 – Faculty wrap it up. Reflect on what would have made it better. December 30th (semesters), December 15th (quarters)

6. CA-OER review and analyze data/reports – January/February 2016. (Share findings with faculty participants)

7. Potential conference for all pilot project participants.

Appendix B

Fall Pilot Project E-portfolio Description

Fall 2015 Pilot Project - E-Portfolio Description & Due Dates

Katherine D. Harris, CA-OER Council Chair & Co-PI (COERC2014@gmail.com)
Theresa Dykes, CA-OER Council Administrator (tdykes@calstate.edu)
Ruth Guthrie, CA-OER Council member & Co-PI
Leslie Kennedy, CA-OER Council Consultant & Co-PI

Resources: project description, webinar descriptions (for scheduling), & project timeline

MERLOT and ePortfolio Consultant: Cathy Swift - coswift@outlook.com

Due Dates:

Due: September 20 (semesters), October 15th (quarters)
ePortfolio #1 - Faculty begin adding to ePortfolio work-in-progress using Merlot content builder (creating an e-Portfolio subject of Webinar #1; see FAQ & sample) – Focus on adaptation of OER text, time involved, and obstacles and benefits.

Due: November 1 (semesters & quarters)
ePortfolio #2 - Faculty add to ePortfolio work-in-progress using Merlot content builder on implementation of OER textbook (how it's working) (creating an e-Portfolio subject of Webinar #1; see FAQ & sample) - Focus on Teaching and OER, Access, Readability.

Due: December 30th (semesters), December 15th (quarters)
ePortfolio #3 – Faculty wrap it up. Reflect on what would have made it better. (creating an e-Portfolio subject of Webinar #1; see FAQ & sample)

E-Portfolio Contents
1. Description of the course and bibliographic information about the selected OER textbook (including cost of OER textbook and URL used to link to the textbook)
2. Description of the course curriculum aligned with the section of the OER textbook
3. Identification of the section of the OER textbook being used
4. Description of assignments and learning activities that will employ the OER textbook, such as:
    a. Reading assignment
    b. Homework assignment(s)
    c. In-class assignment(s)/activities
5. Assessments of the positives and negatives of the adoption of OER textbook, for example:
    a. Assess faculty workload requirements
    b. Assess the quality and reliability of the OER textbook
    c. Assess student access to OER materials
    d. Assess reactions of students to the OER textbook

How to Create a MERLOT account and e-Portfolio
1. See FAQ in MERLOT
2. Use the COOL4Ed template
3. See FAQ and How to Make your Portfolio Public by the first deadline
4. If you're having issues with the content builder for the e-portfolio, please contact Cathy Swift <coswift@outlook.com>

Appendix C

Fall Pilot Project Timeline

Fall 2015 Pilot Project - Timeline

Katherine D. Harris, CA-OER Council Chair & Co-PI (COERC2014@gmail.com)
Theresa Dykes, CA-OER Council Administrator (tdykes@calstate.edu)
Ruth Guthrie, CA-OER Council member & Co-PI
Leslie Kennedy, CA-OER Council Consultant & Co-PI

Resources: project description, e-Portfolio description, & webinar descriptions (for scheduling)

July 2015

1. Complete paperwork for payment of stipend and Informed Consent and return to Theresa Dykes)
2. Send IRB approval documentation to any participant who requests it (email Theresa Dykes)
3. Review video tutorial for using Collaborate
4. Respond to schedule request for all 3 required webinars by August 10, 2015
5. Review FAQ on creating an account and building an e-Portfolio in MERLOT

August-September 2015
1. Faculty prepare materials to teach a chapter(s) from an OER textbook during Fall 2015
2. Webinar #1: August 15, 2015 (semesters), September 15, 2015 (quarters) -- Participate in 2 hour webinar (see schedule) for participants to
   a. review guidelines and expectations (see project description, e-Portfolio description, & webinar descriptions)
   b. answer questions
   c. discuss/demonstrate MERLOT ePortfolio content builder (requires MERLOT account); (Review FAQ on creating an account and building an e-Portfolio in MERLOT)
   d. discuss templates for ePortfolios, and survey tools;
3. Faculty inform students about the OER textbook research project being done during the course. Letter provided by CA-OER Council (start of term)

September-October 2015
1. ePortfolio #1 - Faculty begin adding to ePortfolio work-in-progress using MERLOT content builder (see FAQ & sample) – Focus on adaptation of free text, time involved and obstacles and benefits. – **Due**: September 20 (semesters), October 15th (quarters)

2. Webinar #2: Participate in 2-hour webinar (see schedule) for faculty to discuss progress and problems – October 1

November 2015
1. ePortfolio #2 - Faculty add to ePortfolio work-in-progress using MERLOT content builder on implementation of OER textbook (how it's working) (see sample) - Focus on Teaching and OER, Access, Readability. **Due**: November 1 (semesters & quarters)

December 2015
1. Webinar #3: Participate in 2-hour webinar (see schedule) for faculty to discuss progress and problems – December 1, 2015 (semesters & quarters)
2. Administer (anonymous) student surveys, including informed consent (IRB approval), at the conclusion of the use of the OER materials - [end of term or earlier as requested]. Survey tool supplied by CA-OER Council
3. Completed faculty surveys **due** to CA-OER Council by December 30th (semesters), December 15th (quarters). Survey tool supplied by CA-OER
4. ePortfolio #3 – Faculty wrap it up. Reflect on what would have made it better. **Due**: December 30th (semesters), December 15th (quarters)

Appendix D

Faculty Survey

Faculty Survey on Experiences with Open eTextbooks

Background Information

What is the name of the course you teach?

Identify the title and author of the OER textbook used for this class. How many chapters did you adopt?

What additional resource(s) did you use for this course?

- ☐ Quiz/test bank materials associated with e-textbook
- ☐ PowerPoint materials provided with e-textbook
- ☐ Homework questions from e-textbook
- ☐ Simulations from e-textbook
- ☐ None
- ☐ Other

What is your position as a faculty member?

- ○ Adjunct Professor
- ○ Assistant Professor
- ○ Associate Professor
- ○ Full Professor
- ○ Other

At what type of California educational institution are you a professor?

- ○ California Community College
- ○ California State University
- ○ University of California

Do you have prior experience using OER textbooks?

- ○ Yes
- ○ No
- ○ Decline to answer

Overall, were you satisfied with your previous experiences with OER textbooks?

- ○ Yes
- ○ No
- ○ I have no prior experience with open e-textbooks
- ○ Decline to answer

OER Subject Matter

The OER Chapter(s) use sufficient and relevant examples to present its subject matter.

- ○ Strongly agree
- ○ Slightly agree

- o Neutral
- o Slightly disagree
- o Strongly disagree
- o Decline to answer

The OER Chapter(s) use a clear, consistent terminology to present the subject matter.

- o Strongly agree
- o Slightly agree
- o Neutral
- o Slightly disagree
- o Strongly disagree
- o Decline to answer

The OER Chapter(s) reflect current knowledge in the subject matter.

- o Strongly agree
- o Slightly agree
- o Neutral
- o Slightly disagree
- o Strongly disagree
- o Decline to answer

The OER Chapter(s) present its subject matter in a culturally sensitive manner.

- o Strongly agree
- o Slightly agree
- o Neutral
- o Slightly disagree
- o Strongly disagree
- o Decline to answer

OER Instructional Design

The OER textbook materials/chapter(s) supported the learning objectives for the part of the course in which they were used.

- o Strongly agree
- o Slightly agree
- o Neutral
- o Slightly disagree
- o Strongly disagree
- o Decline to answer

The OER textbook materials/chapter(s) presented the subject material at appropriate reading levels for undergraduate use.

- o Strongly agree
- o Slightly agree
- o Neutral

- Slightly disagree
- Strongly disagree
- Decline to answer

The OER textbook materials/chapter(s) reflect best practices in the instruction of the designated course.

- Strongly agree
- Slightly agree
- Neutral
- Slightly disagree
- Strongly disagree
- Decline to answer

Is the OER textbook chapter(s) searchable?

- Yes
- No
- N/A

OER Editorial

The language of the OER textbook chapter(s) was free of grammatical, spelling, usage and typographical errors/

- Strongly agree
- Slightly agree
- Neutral
- Slightly disagree
- Strongly disagree
- Decline to answer

The OER textbook chapter(s) adheres to effective principles of design. (e.g. pages are laid out and organized to be clear and visually engaging and effective.)

- Strongly agree
- Slightly agree
- Neutral
- Slightly disagree
- Strongly disagree
- Decline to answer

The OER textbook chapter(s) uses conventional editorial features. (e.g. table of contents, glossary, citations)

- Strongly agree
- Slightly agree
- Neutral
- Slightly disagree
- Strongly disagree
- Decline to answer

The OER textbook chapter(s) used multimedia elements effectively. (e.g. graphics, animations, audio)

- o Strongly agree
- o Slightly agree
- o Neutral
- o Slightly disagree
- o Strongly disagree
- o Decline to answer

OER Ease of Use

It was easy for me to make the OER textbook chapter(s) available for students to use.

- o Strongly agree
- o Slightly agree
- o Neutral
- o Slightly disagree
- o Strongly disagree
- o Decline to answer

I had students with disabilities who had trouble accessing the OER textbook chapter(s).

- o Yes
- o No
- o I did not have disabled students in my class.

I had students who had technical problems accessing the OER textbook materials in my class.

- o Strongly agree
- o Slightly agree
- o Neutral
- o Slightly disagree
- o Strongly disagree
- o Decline to answer

The work I had to do to explain how to access the OER textbook chapter(s) was significant.

- o Strongly agree
- o Slightly agree
- o Neutral
- o Slightly disagree
- o Strongly disagree
- o Decline to answer

OER Textbook Support Materials

Support materials for the open e-textbook chapter(s) include test banks, PowerPoint presentations, homework assignments and simulations. These are ancillary materials provided with the text to support teaching. The following questions are about these support materials.

Did you use any support materials for the chapter(s) you adopted?

- ○ Yes
- ○ No

The quality of the OER textbook support materials supported student learning.

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

It took a significant amount of time to implement the OER textbook support materials.

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

Support materials that would be most useful for me to implement an OER textbook would be (check all that apply):

- ☐ PowerPoints for the chapters
- ☐ Quizzes and test banks
- ☐ Assignments and Problem Sets
- ☐ Simulations
- ☐ Other

OER Textbook Compared to Traditional Textbook

Compared to the regular text for the class, the OER textbook was:

- ○ Much better
- ○ Slightly better
- ○ Neutral
- ○ Slightly worse
- ○ Much worse
- ○ Decline to answer

Compared to the regular textbook, the OER textbook materials were thorough and complete in presenting the required topics and competencies.

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

Student learned as well with the OER textbook as with the regular text from the class.

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

Preparation Time for OER Textbook

The OER textbook chapter(s) took the same amount of time to prepare as the traditional textbook for the class.

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

Compared to other textbooks, the OER textbook chapter(s) were easy to integrate into my course.

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

The technological skills and knowledge necessary to incorporate the OER textbook chapters(s) into my class were reasonable.

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

The use of the OER textbook chapter(s) encouraged me to reflect on my teaching practices.

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

The use of the OER textbook chapter(s) changed my usual way of teaching.

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

The stipend provided was sufficient for the amount of work involved in adopting the OER chapter(s).

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

Overall Interest in OER Textbook Adoption

Based upon my experiences in this class, I would be interested in fully adopting an OER textbook.

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

I would be interested in adopting an OER textbook with a copyright that allowed me to alter the text for my own purposes.

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

I would be interested in sharing materials that I created for an OER textbook with other faculty using the text.

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

Appendix E

Student Survey

Student Survey on Experiences with Open eTextbooks

Background Information
What is your class standing?

Freshman

Sophomore

Junior

Senior

Super Senior

Graduate

What type of California educational institution do you attend?

- ○ California Community College
- ○ California State University
- ○ University of California

What is the title of the course you are taking that uses an OER textbook?

Which, if any, of the following

g types of open educational resources have you used (check all that apply).

- ☐ OER textbooks
- ☐ Whole course
- ☐ Elements of a course (eg. A module or unit)
- ☐ Library reserve
- ☐ Videos
- ☐ Audio podcasts
- ☐ Images
- ☐ Infographics
- ☐ Interactive games
- ☐ Lectures
- ☐ Lesson plans
- ☐ Tutorials
- ☐ Quizzes
- ☐ eBooks
- ☐ Data sets
- ☐ Learning tools, instruments and software plugins
- ☐ Other

Overall, were you satisfied with your previous experiences with open educational materials?

- ○ Yes
- ○ No
- ○ I have not used Open Educational Resources

Experiences with OER textbook

The OER textbook chapter(s) or materials used in this course met my expectations for the class.

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

The assigned reading from the OER textbook helped me to understand key concepts from the course.

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

The assigned reading from the OER textbook was engaging to me.

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

I had no trouble accessing the OER textbook for this class.

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

I used the following formats to access the OER textbook. Check all that apply.

☐ Printed copy of materials
☐ Pdf
☐ Other e-format reader
☐ Electronic copy integrated into a learning management system
☐ I did not read the text
☐ Other

OER Textbook Readability

The OER textbook was organized in a way that helped my understanding of the course concepts.

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

The OER textbook was readable. I had no trouble reading the font used in the text.

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

The OER textbook had a layout that contributed to the readability of the materials.

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

The OER textbook used graphics that helped my understanding of course concepts.

- ○ Strongly agree
- ○ Slightly agree
- ○ Neutral
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

The OER textbook used examples that helped my understanding of course concepts.

- ○ Strongly agree

- o Slightly agree
- o Neutral
- o Slightly disagree
- o Strongly disagree
- o Decline to answer

OER Textbook Compared to Traditional Textbook

On a weekly basis, how often did you typically use the required textbook for this course?

- o 6+ times a week
- o 4-5 times a week
- o 2-3 times a week
- o Once a week
- o Never
- o Decline to answer

On a weekly basis how often did you use the OER textbook for this course?

- o 6+ times a week
- o 4-5 times a week
- o 2-3 times a week
- o Once a week
- o Never
- o Decline to answer

The OER textbook chapter(s) was better than the regular class textbook.

- o Strongly agree
- o Slightly agree
- o Neutral
- o Slightly disagree
- o Strongly disagree
- o Decline to answer

Overall, compared to the regular text, the OER textbook was thorough and complete in covering required topics and competencies.

- o Strongly agree
- o Slightly agree
- o Neutral
- o Slightly disagree
- o Strongly disagree
- o Decline to answer

Experience with OER Textbooks

I would recommend the use of the OER textbook to my classmates.

- ○ Strongly agree
- ○ Slightly agree
- ○ N/A
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

Based upon my experience in this class I would be interested in fully using an OER textbook in a future course.

- ○ Strongly agree
- ○ Slightly agree
- ○ N/A
- ○ Slightly disagree
- ○ Strongly disagree
- ○ Decline to answer

What would be the easiest way for you to use an OER textbook?

- ○ Printed myself
- ○ Print a copy at the bookstore and purchase it for a small fee
- ○ Read it online
- ○ Integrated with a course learning management system
- ○ Not use it
- ○ Not applicable

What platform did you use for accessing the eTextbook?

- ☐ Desktop Computer
- ☐ Laptop Computer
- ☐ iPad or Tablet Computer
- ☐ Cell Phone
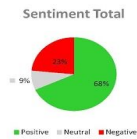- ☐ Printed Copy of eTextbook

Comments

What challenges did you face in using this resource?

What can be done to improve your experience with resources like the one you used in this course?

Appendix F

Content Analysis Data

Sentiment	Total	
Positive		32
Neutral		4
Negative		11
Sum		47

Sentiment Total

Positive 68%, Neutral 9%, Negative 23%

■ Positive ■ Neutral ■ Negative

Auto Categories	Total	Positives	Neutrals	Negatives
Sum	0			

Auto Categories (NO DATA)

■ Auto Categories Total Positives Neutrals

User Categories	Total	Positives	Neutrals	Negatives
Sum	0			

User Categories (NO DATA)

■ User Categories Total Positives Neutrals

appreciative wordy thank helpful available appreciated higher friend advantage recommend convenient complete confusing appreciate like repetitive difficult free standard nice problem strong interesting real good **cheap annoying amazing love great** clear pull more idea course questions follow cost issue parts something simple keep definition believe find need help words play material thing fact understand points future experience other screen homework questions **some of my classmates**

Source text	Sentiment	Sentiment Score	Subjectivity	Summarization	Entities	Themes	Facets
Homework questions sho	negative	-0.967494349	OBJECTIVE			homework questions, ne	examples, neutral, -0.947 | textbook, neutral, -0.986 | questions, neutral, -0.993
A few parts were repetiti	positive	-0.2495	OBJECTIVE				parts, neutral, -0.994 | repetitive, negative, -0.443
Cheap textbooks will life	positive	-0.2495	OBJECTIVE				burden, neutral, -0.956 | students, neutral, -0.960 | cheap, negative, -0.525
For a textbook that is fre	neutral	-0.122607687	OBJECTIVE				issue, neutral, -0.993 | material, neutral, -0.996 | annoying, negative, -0.530 | confusing, negative, -0.437 | difficult, negative, -0.444 | free, positive, +0.452 | online, neutral, -0.948 | go
Good reading and we sho	positive	0.2495	OBJECTIVE				practice, neutral, +0.982 | good, positive, +0.494 | more, neutral, +0.992
Great textbook. It really	positive	0.2495	STRONG SUBJECTIVE				statistics, neutral, +0.631 | great, positive, +0.908 | understand, neutral, 0.997
Hope to use this more in	positive	0.746433418	OBJECTIVE				future, neutral, -0.997
I am glad I was a part of t	positive	0.778586242	STRONG SUBJECTIVE				glad, neutral, -0.770
I didn't use the textbook	negative	-0.15162075	WEAK SUBJECTIVE				lecture, neutral, +0.883 | professor, neutral, -0.900 | information, neutral, +0.976 | notes, neutral, -0.980 | textbook, neutral, -0.986
I found it really easy and	positive	0.17303643	WEAK SUBJECTIVE				informational, neutral, +0.631 | interesting, positive, +0.485 | easy, neutral, +0.991 | simple, neutral, +0.995
I had very good experien	positive	0.142478344	WEAK SUBJECTIVE		(PERSON), Mr. Rahim, neutral, +0.409		homework, neutral, +0.733 | class, neutral, +0.978 | questions, neutral, -0.993 | experience, neutral, +0.998 | good, positive, +0.494 | help, neutral, +0.996 | understand, neutral, 0.997
I hated this book with a s	positive	-0.2495	STRONG SUBJECTIVE				passion, neutral, +0.985 | strong, positive, +0.477
I have none.	neutral	-0.861228212	OBJECTIVE				
I hope we can transition	positive	0.090780147	WEAK SUBJECTIVE				textbook, neutral, -0.986 | transition, neutral, -0.987 | future, neutral, -0.997 | low-cost, neutral, +0.631 | free, positive, +0.452 | near, neutral, -0.981 | read, neutral, -0.986 | easier, ne
I like how they have key t	positive	0.2495	WEAK SUBJECTIVE				objectives, neutral, +0.631 | chapters, neutral, +0.631 | points, neutral, +0.997 | like, positive, +0.442
I liked using this resource	positive	0.869526554	STRONG SUBJECTIVE				resource, neutral, +0.631 | students, neutral, -0.960 | cost, neutral, -0.993 | convenient, positive, +0.422 | love, positive, +0.895 | find, neutral, -0.995
I love the idea of OER tex	negative	-0.2495	STRONG SUBJECTIVE				textbook, neutral, -0.986 | idea, neutral, -0.992 | standard, negative, -0.453 | awful, neutral, -0.976 | compared, neutral, -0.990
I needed a textbook for m	neutral	0.630407884	OBJECTIVE				textbook, neutral, -0.986 | learn, neutral, 0.986
I really do prefer OER tex	neutral	0.067434772	STRONG SUBJECTIVE				textbooks, neutral, +0.631 | classes, neutral, +0.945 | implemented, neutral, +0.631 | prefer, neutral, +0.974 | believe, neutral, +0.995
I really tried my hardest t	negative	-0.691460395	STRONG SUBJECTIVE				problem, negative, -0.475 | book, neutral, -0.986 | step, neutral, -0.992 | course, neutral, -0.993 | material, neutral, -0.996 | thing, neutral, -0.996 | fact, neutral, -0.997 | wordy, negativ
I recommend using this c	positive	0.2495	STRONG SUBJECTIVE				recommend, positive, +0.411
I think this an amazing re	positive	0.720920236	STRONG SUBJECTIVE				resource, neutral, +0.631 | helpful, positive, +0.277 | fortunate, neutral, +0.631 | amazing, positive, +0.723 | like, positive, +0.442
I was really appreciative	positive						
	positive	0.7277648844	WEAK SUBJECTIVE				appreciative, positive, +0.182 | available, positive, +0.327 | free, positive, +0.452 | good, positive, +0.494
I will recommend it to m	positive	0.801841086	STRONG SUBJECTIVE				textbooks, neutral, +0.631 | iPhone, neutral, +0.631 | friend, positive, +0.383 | advantage, positive, +0.398 | recommend, positive, +0.411 | compare, neutral, 0.957 | pull, neutral, +0.9
It is very convenient how	positive	0.2495	STRONG SUBJECTIVE				definition, neutral, 0.995 | words, neutral, +0.996 | convenient, positive, +0.422
it would be nice to have	positive	0.922472431	STRONG SUBJECTIVE				books, neutral, -0.977 | access, neutral, +0.992 | free, positive, +0.452 | nice, positive, +0.470 | cost, neutral, -0.993
Jolly ho	neutral	0.742660292	STRONG SUBJECTIVE				
Liked the idea of the bou	positive	0.804880923	STRONG SUBJECTIVE				boundless, neutral, +0.787
nice book!	positive	0.177971677	STRONG SUBJECTIVE				book, neutral, -0.986 | nice, positive, +0.470
only used OER textbook,	neutral	-0.95355787	OBJECTIVE				textbook, neutral, -0.986 | other, neutral, -0.998
Overall a complete and a	positive	0.830900317	STRONG SUBJECTIVE				resource, neutral, +0.631 | complete, positive, +0.723 | complete, positive, +0.433 | free, positive, +0.452
overall, I like it!	positive	0.23340548	STRONG SUBJECTIVE				like, positive, +0.442
Overall, I think OER is a g	positive	0.12448843	WEAK SUBJECTIVE				textbooks, neutral, +0.631 | substitute, neutral, -0.982 | great, positive, +0.908 | expensive, neutral, -0.911 | think, neutral, -0.990
Please keep making more	positive	0.89454041	STRONG SUBJECTIVE				textbooks, neutral, +0.631 | appreciate, positive, +0.442 | free, positive, +0.452 | keep, neutral, 0.995
Promote these types of b	positive	0.058920395	WEAK SUBJECTIVE				schools, neutral, -0.951 | types, neutral, 0.984 | promote, neutral, +0.631 | higher, positive, +0.342
see above-challenges.	positive	0.837172326	WEAK SUBJECTIVE				above-challenges, neutral, +0.631
Some good aspects abou	positive	0.2495	WEAK SUBJECTIVE				chapters, neutral, +0.631 | organization, neutral, +0.631 | sidebar, neutral, +0.631 | information, neutral, +0.976 | browse, neutral, +0.631 | good, positive, +0.494 | easy, neutral, +0.99
Some of my classmates s	negative	-0.2495	WEAK SUBJECTIVE			some of my classmates, r	examples, neutral, -0.947 | text, neutral, -0.988 | clear, neutral, -0.992
Text are ridiculously exp	positive	0.03179571	WEAK SUBJECTIVE				saver, neutral, +0.631 | students, neutral, -0.960 | cost, neutral, -0.993 | expensive, neutral, -0.911 | real, positive, +0.488
Thank you for the free bo	positive	0.689681448	STRONG SUBJECTIVE				College, neutral, +0.631 | thank, positive, +0.238 | free, positive, +0.452
Thank you for the resour	positive	0.570420979	OBJECTIVE				resource, neutral, +0.631 | thank, positive, +0.238 | appreciated, positive, +0.333
THANK YOU! College text	positive	0.981445489	STRONG SUBJECTIVE				
the course / instructor, m	positive	0.248163008	STRONG SUBJECTIVE				great, positive, +0.908
The idea of online books	positive	0.941604489	STRONG SUBJECTIVE				something, neutral, +0.994 | screen, neutral, -0.998 | great, positive, +0.908 | real, positive, +0.488
There is a large populatio	negative	-0.2495	WEAK SUBJECTIVE				computer, neutral, -0.976 | reading, neutral, -0.985 | text, neutral, -0.988 | standard, negative, -0.453 | large, neutral, -0.987 | play, neutral, -0.996
This should be the standa	positive	-0.24626376	OBJECTIVE				standard, negative, -0.453 | schools, neutral, -0.951
Very clear, easy to read a	positive	0.88849022	WEAK SUBJECTIVE				information, neutral, +0.976 | easy, neutral, +0.991 | follow, neutral, 0.993

Appendix G

OER Toolkit #1

California College Textbook Affordability Act

The goal of College Textbook Affordability Act of 2015 (AB 798) is to save college students money by empowering professors and local campuses to adopt high quality, free and open educational resources for courses materials. The [Request for Proposals (RFP)](#) provides the guidelines, requirements and processes for campuses to submit proposals for their local textbook affordability programs and receive up to $50,000 to implement their program and report on the student savings created by their program. See also [Toolkit #2](#) (released March 30, 2016) and the Council's "[White Paper, OER Adoption Study: Using Open Educational Resources in the College Classroom](#)." Need help with these topics? Join us for a webinar or two! Take a look at the [calendar and register here](#).

Understanding and Using OER/open textbooks

A. **What is OER? What is an open textbook?**
   a. Defining Open Educational Resources
      i. "[Seven Things You Should Know about Open Educational Resources](#)" (Educause)
      ii. "[The Five R's of OER](#)" (OpenContent)
      iii. "[Open Educational Resources](#)" (a more extensive guide from JISC)
   b. "[What Is a CC (Creative Commons) License](#)?" (Creative Commons)
   c. "[Finding Open Textbooks and Fostering Faculty Adoptions](#)" (video)

B. **Case Studies of open textbook use in higher education**
   a. "[White Paper, OER Adoption Study: Using Open Educational Resources in the College Classroom](#)" (California OER Council)
   b. "[Peggy Brickman, Textbook Hero](#)" (video)
   c. "[Affordable Learning Georgia](#)" (video)
   d. "[The Use of E-Textbooks in Higher Education: A Case Study](#)" (Doering, et al.)
   e. "[Adopting OER: A Case Study of Cross-Institutional Collaboration and Innovation](#)" (Educause)
   f. [Three in Four U.S. Teachers Say Open Educational Resources Are Used More Often Than Textbooks](#) + [Infographic](#)
   g. Bibliography of Case Studies:
      i. "[A multi-institutional study of the impact of open textbook adoption on the learning outcomes of post-secondary students](#)"
      ii. "[The Tidewater Z-Degree and the INTRO Model for Sustaining OER Adoption](#)"
      iii. [Babson Survey Report - Findings regarding OER](#)
      iv. "[Fixing the Broken Textbook Market](#)" (study)
      v. "[OER Evidence Report 2013-2014](#)"
      vi. "[2012 Florida Student Textbook Survey](#)"

      vii.   Summary of Student Survey Responses, created by CA-OERC 2014 (live results; survey still open to students)

      viii.   Other references on OER adoption (compiled by CA-OERC 2014-2015)

C. **Finding open textbooks**

    h. California Online Open Library for Education (includes peer-reviewed open textbooks for the 50 most highly enrolled courses across CCC, CSU, and UC)

        i.   use this list to find faculty in disciplines mentioned in these 50 courses

    i. Merlot (extensive collection of OER materials, ranging from textbooks to course modules)

    j. OpenStax College (a collection of highly-rated open textbooks for higher education)

    k. BCCampus (a finding guide to open textbooks)

    l. Highly Rated Textbooks (of CA-OERC reviewed OER textbooks)

Creating a grant proposal

A. **Planning your campus project**

    a. CSU Affordable Learning Solutions Value Proposition Framework (a sample rubric for formulating the value of open textbooks for students, teachers, administrators)

    b. OER Campus Action Plan Template (a sample worksheet to organizing stakeholders, goals, support, and assessment for open textbook initiatives - - from SPARC)

    c. Mobilizing Faculty as Affordable Learning Solutions Ambassadors (a sample guide to involving faculty in affordable learning solution programs with case studies from CSU-San Marcos and CSU-Chico - - from CSU's AL$ initiative)

    d. "White Paper, OER Adoption Study: Using Open Educational Resources in the College Classroom" (California OER Council)

For Questions, Contact Us

Register to receive updates & notifications about
future webinars, office hours, draft feedback

http://cool4ed.org/index.html

Appendix H

OER Toolkit #2
California College Textbook Affordability Act

While Toolkit #1 offers help with beginning the process of finding campus partners, orienting yourself with OER, and writing a proposal for submission, Toolkit #2 offers help with creating elements of your campus plan, including: crafting faculty development workshops, demonstrating faculty use of OER textbooks, tutorials on finding OER materials once faculty have been identified, tutorials on student use of OER textbooks, information on ADA compliance, how to peer review OER materials, identifying best practices to facilitate OER textbook adoption, implementation, and use, and creating a sustainable OER adoption plan. Of special importance is the video tutorial for students on how to study from OER materials: Reading on Electronic Devices: A Tutorial. Or read through our "White Paper, OER Adoption Study: Using Open Educational Resources in the College Classroom." See also the CA-OER Council's YouTube Channel for past webinars on a variety of topics. Need help with these topics? Join us for a webinar or two! Take a look at the calendar and register here.

Sample Professional Development Workshop Formats
1. OER Workshop Toolkit (WikiEducator)
2. OpenEd Immersion Training: 3-Day Workshop (Emory University Open Education Initiative)

Professional Development Workshop Topics

1. **Understanding OER and Open textbooks**

   a. **What is OER? How OER works**?
      i. OER Starter Kit (Open Education Centralia College)
      ii. How to Use Open Education Resources, a Workshop (Open Washington)
      iii. OER Mythbusting (European Open EDU Policy Project)

   b. **Open textbooks**
      i. "Open Textbook FAQ" (BCcampus)
      ii. "Open Textbooks: Why? What? How? When?" (Jia Frydenberg and Gary W. Matkin, Hewlett Foundation, 2007, pdf)
      iii. "A multi-institutional study of the impact of open textbook adoption on the learning outcomes of post-secondary students" (Lane Fischer, John Hilton III, T. Jared Robinson, David A. Wiley, *Journal of Computing in Higher Education*, Dec 2015, 27:3, 159-172, pdf)
      iv. Quality: Rubric for peer-reviewing open textbooks (CA-OER Council)

2. **Let's Build a Community**

   a. **Understanding faculty and campus needs** (locally/CA-OER Council)
      i. Faculty Open Education Awareness Survey (Centralia College)

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      ii.   [Faculty](#) and [Student](#) survey templates on OER use (CA-OER Council)

    b. Campus involvement
   - i. "[Marketing Strategies](#)" (Community College Consortium for OER)
   - ii. [Portland Community College Report [on OER Initiative]](#) (Open Oregon Educational Resources)
   - iii. Social media campaigns
       1. [How to](#) (NCVO KnowHow NonProfit)
       2. "[7 Creative Ways NonProfits Can Use Social Media](#)" (Hiba Haider)

3. Discipline-specific

    a. OER Commons [Network Hubs](#) and [Curated Collections](#)
    b. MERLOT [Academic Discipline Communities](#)

4. Working with OER textbooks & materials

    a. Teaching
   - i. LMS integration and publishing (contact your local campus Instructional Design or LMS team)
   - ii. Remixing - textbook + OER materials
       1. [Localization](#) (OpenStax, OER Commons)
       2. "[The Future of OER & Mathematics](#)" (Prof. Mike Nevins, Open Washington)
       3. Linking and aggregating - examples of teaching
           a. [Prof. P. Scott Corbett e-portfolio](#)
           b. [Prof. Alice Taylor e-portfolio](#)

    b. Learning
   - i. Digital Reading
       1. "[Digital Reading: An Overview](#)" (Ziming Liu, 2012, pdf)
       2. "[The Importance of Deep Reading](#)" (Maryanne Wolf and Mirit Barzillai, *Literacy 2.0,* 66:6, March 2009, 32-37, pdf)
       3. "[College Student Academic Online Reading: A Review of Current Literature](#)" (Kate Sandberg, *Journal of College Reading and Learning*, 42:1, Fall 2011, pdf)
       4. "[Building Bridges to Critical Reading in a Digital Context](#)" (Michael Larkin and Donnet Flash, UC Berkeley, Center for Teaching and Learning)
   - ii. Strategies for Digital Reading
       1. "[Reading on Electronic Devices: A Tutorial](#)" (Diego Bonilla, CA-OER Council)
       2. Annotation
           a. Annotating strategies
               - i. "[I'll Have Mine Annotated, Please: Helping Students Make Connections with Texts](#)" (Matthew D. Brown, *English*, 9:4, Mar 2007, pdf)
               - ii. "[Study Strategies: A Simple Guide to Text Annotation](#)" (pdf)

          iii. "Annotation and Notetaking" (University of Texas, El Paso, pdf)
- b. Digital Annotation
  - i. "Digital Document Annotation on an iPad, iPodTouch, or Laptop" (Scott McLeod)
  - ii. "Context, Commentary, and Close Reading: What Slate's Annotated 'Bartelby' Can Tell Us About Reading and Writing with Digital Annotation" (Leigh Meredith, Digital Rhetoric Collaborative)
  - iii. Digital annotation tools
    1. Hypothes.is
    2. Classroom Salon (Carnegie-Mellon)
    3. Diigo
    4. Genius
    5. Annotation Tools (Digital Research Tools Wiki)

- iii. Social Reading
  1. "And Then We Went to the Brewery": Reading as a Social Activity in a Digital Era" (Danielle Fuller and DeNel Rehberg Sedo, *World Literature Today*)
  2. "Platforms for Reading: The Material Book's Return" (Tully Barnett, *Scholarly and Research Communication* 6:4, 2015)
  3. eComma:A Space for Social Reading (UT Austin) [Instructions for LMS integration]

- iv. Printing services for textbooks (services work with campus bookstores)
  1. Montezuma publishing
  2. LAD Custom Publishing
  3. NASCORP
  4. RR Donnelly
  5. Lulu Publishing
  6. Xanedu
  7. Lightning Source

- b. Assessment and data
  - i. Survey instrument template for students using OER (CA-OER Council)
  - ii. Survey instrument template for faculty using OER (CA-OER Council)
  - iii. Peer Review Rubric for OER Textbooks (CA-OER Council)

- c. Sustainability
  - i. "On the Sustainability of Open Educational Resource Initiatives in Higher Education" (David Wiley, OERC, pdf)
  - ii. "Developing a Sustainable OER Ecosystem in HE" (Li Yuan, JISC CETIS, U. of Bolton)
  - iii. "White Paper, OER Adoption Study: Using Open Educational Resources in the College Classroom" (California OER Council)

- d. Accessibility

i.   "Accessibility and Open Educational Resources" (UDLonCampus)
ii. Accessibility Review Criteria (COOL4Ed)

Appendix I

OER Toolkit #3

[California College Textbook Affordability Act](#)

While **[Toolkit #1](#)** offers help with beginning the process of finding campus partners, orienting yourself with OER, and writing a proposal for submission, and **[Toolkit #2](#)** offers help with creating elements of your campus plan (including, crafting faculty development workshops, demonstrating faculty use of OER textbooks, tutorials on finding OER materials once faculty have been identified, tutorials on student use of OER textbooks, information on ADA compliance, how to peer review OER materials, identifying best practices to facilitate OER textbook adoption, implementation, and use, and creating a sustainable OER adoption plan), **Toolkit #3** offers videos of user stories by faculty who have adopted, implemented, and used OER textbooks. This toolkit also includes ADA compliance reviews of all textbooks that have been peer-reviewed on [COOL4Ed](#).

See also the [CA-OER Council's YouTube Channel](#) for past webinars on a variety of topics. Need help with these topics? Join us for a webinar or two! Take a look at the [calendar and register here](#).

User Stories & Case Studies - Brief Videos of Faculty Use of OER

1. [COOL4ED - Alice Taylor - Humanities - West Los Angeles College](#)
2. [COOL4ED - Ruth Guthrie - Computer Information Systems - Cal Poly Pomona](#)
3. [COOL4ED - Dianne Bennett - Chemistry - Sacramento City College](#)
4. [COOL4ED - Vera Kennedy - Sociology - West Hills Community College](#)
5. [COOL4ED - Roxanne Schroeder - Biology - Humboldt State](#)
6. [COOL4ED - Liz Harris - Communication Studies - San Jose State University](#)
7. See also more case studies in [Faculty Showcase, COOL4Ed](#)

Accessibility of OER Textbooks

1. "[Accessibility and Open Educational Resources](#)" (UDLonCampus)
2. [Accessibility Review Criteria](#) (COOL4Ed)
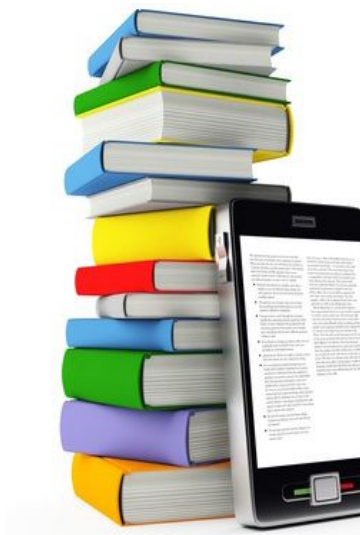3. [ADA Compliance & Measuring Student Learning Webinar](#), Dr. Ruth Guthrie (CA-OER Council)

Research & Tutorials

1. "[Reading on Electronic Devices: A Tutorial](#)" (Diego Bonilla, CA-OER Council)
2. "[White Paper, OER Adoption Study: Using Open Educational Resources in the College Classroom](#)."

Appendix J

Reading on Electronic Devices
by Diego Bonilla

Interactive Table of Contents
Electronic reading applications
Bibliography
Credits

This video tutorial covers how to engage in a critical use of electronic readers. While there are some recommendations about how to perform technical tasks in this video, the tutorial is mostly about the issues that make electronic devices appropriate (or not) for reading textbooks.

The video tutorial is paired with an interactive mind map and a document with an interactive table of contents. Both of these provide you the ability to directly access different parts of the video so (1) instructors can assign only parts of it, or (2) so it can be watched in a nonlinear fashion.

Interactive Table of Contents

By clicking on the links below,
you will be taken to different segments of the tutorial.

[Type of reading](#)	17:47
[Device related](#)	20:37
[Human related](#)	29:22
[Reading well is a skill](#)	33:11

Electronic reading applications

In the following link you can find a [comparison of electronic reading applications for **Android**](#) devices.
In the following link you can find a [comparison of electronic reading applications for **iOS**](#) devices.

Bibliography

Cassidy, E., Martinez, M., & Shen, L. (2012). Not in love, or not in the know? Graduate student and faculty use (and non-use) of e-books. The Journal of Academic Librarianship,38(6).

Daniel, D., & Woody, W. (2013). E-textbooks at what cost? Performance and use of electronic v. print texts. Computers & Education, (62).

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Waters, J., Roach, J., Emde, J., McEathron, S., & Russell, K. (2014). A comparison of e-book and print book discovery, preferences, and usage by science and engineering faculty and graduate students at the University of Kansas. Issues in Science and Technology Librarianship.

Woody, W. D., Daniel, D., & Baker, C. (2010). E-books or textbooks:S Students prefer textbooks. Computers and Education, (55).

Image Credits

Appendix K

Faculty Review of Open eTextbooks

California OER Council eTextbook Evaluation Rubric

<u>CA Course ID:</u>

Subject Matter (30 possible points)	N/A (0 pts)	Very Weak (1pt)	Limited (2 pts)	Adequate (3pts)	Strong (4 pts)	Superior (5 pts)
Is the content accurate, error-free, and unbiased?						
Does the text adequately cover the designated course with a sufficient degree of depth and scope?						
Does the textbook use sufficient and relevant examples to present its subject matter?						
Does the textbook use a clear, consistent terminology to present its subject matter?						
Does the textbook reflect current knowledge of the subject matter?						
Does the textbook present its subject matter in a culturally sensitive manner? (e.g. Is the textbook free of offensive and insensitive examples? Does it include examples that are inclusive of a variety of races, ethnicities, and backgrounds?)						

Total Points: 0 out of 30

Please provide comments on any aspect of the subject matter of this textbook:

Instructional Design (35 possible points)	N/A (0 pts)	Very Weak (1pt)	Limited (2 pts)	Adequate (3pts)	Strong (4 pts)	Superior (5 pts)
Does the textbook present its subject materials at appropriate reading levels for undergrad use?						
Does the textbook reflect a consideration of different learning styles? (e.g. visual, textual?)						
Does the textbook present explicit learning outcomes aligned with the course and curriculum?						
Is a coherent organization of the textbook evident to the reader/student?						
Does the textbook reflect best practices in the instruction of the designated course?						
Does the textbook contain sufficient effective ancillary materials? (e.g. test banks, individual and/or group activities or exercises, pedagogical apparatus, etc.)						
Is the textbook searchable?						

Total Points: 0 out of 35

Please provide comments on any aspect of the instructional design of this textbook:

Editorial Aspects (25 possible points)	N/A (0 pts)	Very Weak (1pt)	Limited (2 pts)	Adequate (3pts)	Strong (4 pts)	Superior (5 pts)
Is the language of the textbook free of grammatical, spelling, usage, and typographical errors?						
Is the textbook written in a clear, engaging style?						
Does the textbook adhere to effective principles of design? (e.g. are pages latid0out and organized to be clear and visually engaging and effective? Are colors, font, and typography consistent and unified?)						
Does the textbook include conventional editorial features? (e.g. a table of contents, glossary, citations and further references)						
How effective are multimedia elements of the textbook? (e.g. graphics, animations, audio)						

Total Points: 0 out of 25

Please provide comments on any editorial aspect of this textbook:

Usability (25 possible points)	N/A (0 pts)	Very Weak (1pt)	Limited (2 pts)	Adequate (3pts)	Strong (4 pts)	Superior (5 pts)
Is the textbook compatible with standard and commonly available hardware/software in college/university campus student computer labs?						
Is the textbook accessible in a variety of different electronic formats? (e.g. .txt, .pdf, .epub, etc.)						
Can the textbook be printed easily?						
Does the user interface implicitly inform the reader how to interact with and navigate the textbook?						
How easily can the textbook be annotated by students and instructors?						

Total Points: 0 out of 25

Please provide comments on any aspect of access concerning this textbook:

Overall Ratings						
	Not at all (0 pts)	Very Weak (1 pt)	Limited (2 pts)	Adequate (3 pts)	Strong (4 pts)	Superior (5 pts)
What is your overall impression of the textbook?						
	Not at all (0 pts)	Strong reservations (1 pt)	Limited willingness (2 pts)	Willing (3 pts)	Strongly willing (4 pts)	Enthusiastically willing (5 pts)
How willing would you be to adopt this book?						

Total Points: 0 out of 10

Overall Comments:

If you were to recommend this textbook to colleagues, what merits of the textbook would you highlight?

What areas of this textbook require improvement in order for it to be used in your courses?

CALIFORNIA
OER
COUNCIL
CSU + CCC + UC

For questions or more information, contact the CA Open Educational Resources Council.

Fall Pilot Project Description	https://drive.google.com/file/d/0B_vzpPKgCfk_S0F0SklFZExXREU/view?usp=sharing
Fall Pilot Project E-portfolio Description	https://drive.google.com/file/d/0B_vzpPKgCfk_aVZwaG5jTTRPaTA/view?usp=sharing
Fall Pilot Project Timeline	https://drive.google.com/file/d/0B_vzpPKgCfk_MDVCNDhLN0NwVE0/view?usp=sharing
Faculty Survey on Experiences with Open E-textbooks	https://drive.google.com/file/d/0B5ITEMAeYmsAcGdvWGxGcWNWLWs/view
Student Survey on Experiences with Open E-textbooks	https://drive.google.com/file/d/0B5ITEMAeYmsAV1V0Qkw3NzBJdEE/view
Content Analysis Data	https://drive.google.com/file/d/0B_vzpPKgCfk_dlBGUFB4YTgyajA/view?usp=sharing
Toolkit #1	https://drive.google.com/file/d/0B_vzpPKgCfk_ek1INjllN3J3ejQ/view?usp=sharing
Toolkit #2	https://drive.google.com/file/d/0B_vzpPKgCfk_VVFwcko0eGM2cTA/view?usp=sharing
Toolkit #3	https://drive.google.com/file/d/0B_vzpPKgCfk_eUsxRHUxNXBqRDQ/view?usp=sharing
Reading on Electronic Devices	https://drive.google.com/file/d/0B_vzpPKgCfk_WU9MWW5DMjlpckE/view?usp=sharing
Textbook Peer Review Rubric	https://drive.google.com/file/d/0B_vzpPKgCfk_UEV0NnhQSHpGaFU/view?usp=sharing