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Faculty Members' Lived Experiences with Open Educational Resources

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A thesis submitted to the faculty of
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Master of Science

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ABSTRACT

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The cost of textbooks has continued to increase, and the financial effect on students in higher education is significant. Numerous studies have been done to learn more about student and faculty perceptions toward Open Educational Resources (OER) use. Recent studies confirm that most instructors would use OER in order to alleviate the financial burden placed on students; however, OER adoption rates do not reflect this belief. In my study I sought to better understand what instructors experience when they search for OER. In this phenomenological study, I interviewed faculty who expressed a desire to use OER and to capture their lived experiences of adopting and adapting OER. I would like to better understand what is working well for these faculty and what challenges exist as they seek to find and adopt OER and identify possible solutions that could improve OER adoption rates. I learned that there is a desire to use OER to reduce the financial burden that textbooks impose on students, but that there is very little understanding on where to find quality OER and tools that are needed to adapt it. Future research may focus on ways to improve the process of finding and customizing OER so that it can be an alternative to expensive textbooks.

Keywords: textbooks, open educational resources, lived experience, phenomenology

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TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

Introduction

Access to relevant, high-quality information is an important and fundamental activity to all life-long learners. Schools have been the primary source for gathering, curating and disseminating information and there is little argument about the importance of education as a means of enriching individuals and societies (Dewey, 1897). More importantly, quality education can be the means by which those born into poverty can escape a world of despair and become more self-reliant (Aldaz-Carroll & Morán, 2001). For the past hundred years individuals had to find a way to physically get themselves to "school" so that they could participate in the learning process. Books, especially textbooks for specific classes, were located centrally in the library and only way you could access them was to enroll and become part of a cohort, or class. Gratefully, we live in a world in which technologies, such as the World Wide Web and digital textbooks, have reduced the distance between this valuable information and those who wish to learn.

But, as great as the technologies are that we have today there is still a need for instructors to review and select textbooks that match the learning objectives of their class. In other words, there is still value in having a teacher teach and explain the content found in textbooks. To that end, textbooks have been, and continue to be a key pedagogical technology to share information and instructors have long been interested in providing the highest quality textbooks they can to their students (Brandt, 1964). Instructors spend a great amount of time and resources searching, evaluating and selecting textbooks that not only present the information for students to learn, but also textbooks that support pedagogy. Evaluation and selection of textbooks has been a key topic of research, debate and discussion in education for many years. In fact, an entire book was

published on the topic of textbook evaluation and selection nearly a hundred years ago (Franzen & Knight, 1922).

Historically, instructors are rarely involved in the development of the textbooks they use in class and spend most of their time creating evaluation criteria that will be used to review commercially published textbooks. To this end, Watt (2009) conducted a review of the textbook selection process of teachers at the K-12 level in the United States and concluded that most textbook selection criteria promoted by states were related to cost. Other selection criteria commonly mentioned in the literature include sensitive to cultural diversity (Cruz, 2002), content coverage (Falduto, 2009), content accuracy (Steuer & Ham, 2008), readability (Gunning, 2003), educational impact (Durwin & Sherman, 2008), and pedagogical aids (Honeycutt, 2007).

I believe there is a need to observe and document not only the evaluation criteria that teachers use to select textbooks, but also the entire process by which teachers use to make their decisions. I am interested in other determining factors such as policies, budget, reviews, and the time it takes to replace a textbook, or to select one that will be used in a newly created class. I want to better understand the entire process of textbook selection and specifically talk with instructors who have looked into using open, or "free" textbooks generally referred to as Open Educational Resources (OER). I want to know what experiences these instructors have as they go through the process to select OER.

An effective research method to better understand these perceived barriers and environmental factors is to conduct qualitative research and more specifically, phenomenological research. Phenomenology seeks to identify the lived experiences of individuals and how they perceive those experiences (Creswell, 1998). According to Moustakas (1994) researchers using a phenomenological approach do so to view the world through the subject's point of view and then

use those observations to identify their perception. I used this research method to capture the lived experiences of faculty who seek to use OER. I wanted to better understand their lived experiences so that I could identify what is working well and where potential barriers exist. As such, the goal of this study was to identify what types of changes can and should be made so that OER can not only enhance learning but benefit those who need it most. In order to accomplish this goal, this study sought to answer the following research questions:

1. What influences faculty to adopt new teaching materials?

2. What influences faculty decisions to select published content vs. open/free materials?

3. If faculty select open/free materials, how do they use them (e.g., adopted, adapted, revised)?

CHAPTER 2

Literature Review

As mentioned, textbooks (especially those that are commercially published) have been a key pedagogical tool in the United States and constitute the primary method of distributing learning content to students (Darwin, 2011). Research suggests that academic performance increases when students use textbooks to prepare for class and to study and prepare for tests (Skinner & Howes. 2013). While the freedom to explore and select adequate textbooks may sound appealing, many face several challenges including ensuring that the textbook is of high quality (Oakes & Saunders, 2002) and that it aligns with their pedagogical approaches (Williams, 1983).

Despite its critical role in education, one increasingly disturbing aspect of textbook use in higher education is rising costs and their financial and potentially academic impact on students. Recent studies show that a college student in the United States now can expect to spend over $900 per year on textbooks (Allen, 2010). This expense can be a large portion of the overall cost of a college degree, particularly at community colleges, and is making a college education prohibitively expensive for many students (Kingkade, 2011). Since textbook prices are relatively small in comparison with the larger costs of tuition or living expenses, they are often overlooked, and addressing this problem is often deprioritized.

Between 2006 and 2016, college textbook prices increased by 73 percent (Senack & Donoghue, 2016). That rise in textbook prices took place at the same time as the enactment of the Higher Education Opportunity Act in 2008, which addressed textbook prices by requiring price disclosures to professors. Despite this legislation designed to reduce prices, commercial

textbook prices remain high as textbook publishers have maintained the high cost of new books by undermining cheaper market alternatives like used textbook programs.

In response to these rising costs, Open Educational Resources (OER) have been developed to reduce the cost of educational content, including textbooks. The United Nations Educational Scientific and Cultural Organization (UNESCO) is commonly cited as the organization that coined the term, "OER," UNESCO (2002) and now defines it as: "any type of educational materials that are in the public domain or introduced with an open license" (UNESCO, 2017, para. 1). The nature of these open materials means that anyone can legally and freely copy, use, adapt and re-share them. Though not always the case, OER content is usually digital in nature and consists of textbooks, syllabi, lecture notes, assignments, tests, projects, audio, video, and animations. With the advances of internet-based technologies and the introduction of digital technologies such as laptops, mobile phones and tablets the ability to publish and consume digital content is easier now than ever.

High-quality, openly-licensed textbooks can be made available to students at dramatically reduced costs, essentially eliminating the textbook barrier to a college education (Caswell, 2012). Like open source software, OER content can be openly licensed and freely distributed leaving traditional closed source, publisher-provided textbooks themselves in a state of flux (DeNoyelles, Raible, & Seilhamer, 2015). Contrary to popular belief, not all digital textbooks are free. In fact, some digital textbooks introduce more restrictions than traditional copyright-restricted textbooks. Since their inception, "open textbooks" have emerged as an alternative option and differ from traditional textbooks in that they can be freely distributed with no licensing costs and can be edited by instructors without permission from the original authors.

If OER content is digitally formatted, licensed to share and to modify, and abundantly available, then why is the perceived adoption rate in higher education so low? Recent research at a prominent university in the United States suggests that over 91% of faculty would be willing to use OER, but that less than 6% actually do (Martin et al., 2017). Ehlers (2011), quoting a study from the Open Educational Quality Initiative (OPAL) argued "that there is a gap between the concept of giving knowledge for free … and the actual use of free and open resources for teaching and learning (OPAL, 2011)." This study reveals that individuals are faced with five main barriers when they want to use OER: lack of institutional support; lack of technological tools for sharing and adapting resources; lack of user skills and time; lack of quality or fitness of the resources; and personal issues such as lack of trust and time. While the author, himself, admits that sampling bias might have existed in the study, its results reveal that "greater efforts will have to be made in the future to understand the personal, organizational, and environmental factors that hinder or enable creation, sharing, use, and reuse of OER" (Ehlers, 2011, p. 1).

The importance and utility of the World Wide Web ("the web") has evolved rapidly over the past few years to become an indispensable resource for social interaction, education, commerce, and entertainment (Martindale &. Dowdy, 2010). The web is quickly becoming a key component to lifelong learning as it enables learners of all abilities to participate in self-directed learning and enables one to learn what, where, when, and how they please. The use of the web as a learning tool supports a constructivist approach to learning as it enables students to construct their own learning opportunities from web resources (Wilson & Lowry, 2000). Despite all it affords, a challenging aspect of web-based, self-directed learning is the need and ability for students to interpret and create meaning from the vast amounts of information available. This

challenge has created a significant need for better online tools to search, curate, and find meaning to the vast amount of information available.

Web 2.0 technologies have given rise to personal, professional and social learning networks, or 'learning platforms' that allow participants to not only consume information but to share, or contribute as well. This shift from push, or "read only" data sharing to the ability to post, or create "read/write" data sharing scenarios have allowed learners to share thoughts and ideas in a whole new way (O'Reilly, 2005). Web 2.0 enables learners to actively participate in social interactions, organize and share digital content through different ways such as social media posts, pictures, video, written blogs, and personal websites. In short, the web, using Web 2.0 technologies, allows people to publish and consume information like never before.

Despite the advances of the web and the ability for people to learn seemingly what and where they please, there is still a case, maybe more than ever, for formal education. One of the primary objectives of academia is to provide an environment in which knowledge and information can be easily exchanged and shared. Schools are not only facilitators of the learning process, but also sources of new ideas and knowledge. It would seem that schools, now more than ever, would support the open, constructivist approach to learning on the web. It would also seem that schools in the information age should support, not inhibit, technologies that enable learners to effectively and easily consume and share information.

In the Web 2.0 world there are technologies that are both open and closed. Open technologies allow users to view the source code, or machine language that is used to create and run websites and Web 2.0 applications. Closed technologies are essentially "black boxes" that only allow users to pass in information and receive back results. In the web, open systems

encourage the free exchange of ideas, access, and an invitation to participate in the development process. Closed systems do not.

The same can be said for systems in education: open system encourage learning, dialog and participation; closed system do not. Schools, especially those in higher education, are made up of many complicated systems that are necessary in order to comply with state and federal regulations. Universities are responsible to operate many sophisticated systems such as student information systems, content management systems, learning management systems, financial aid systems, and many more. Of all the ways that universities have to disseminate information to students, none are more important that those tools that are used in teaching and learning. And in the process of teaching and learning, the textbook is still one of the most efficient, convenient, and effective ways to curate and distribute knowledge.

For this reason, one could argue that open textbooks would be better aligned with the mission of academia as "open" encourages one to not only consume, but to also share something new. Most commercially published textbooks are "closed" in the sense that they are very difficult, and depending on the license, sometimes impossible to modify, copy, and distribute variations of the original source. Open textbooks, in theory, support the aforementioned constructivist learning theory by allowing instructors and students to access, modify, and share versions of the original content.

Another negative aspect of published (closed) textbooks is cost. A 2012 survey of 22,129 students in Florida found that 64% of them did not purchase a suggested textbook for a course due to cost (Florida Virtual Campus, 2012), and it has been suggested that increasing textbook costs are making a college education prohibitively expensive for many students (Kingkade, 2011).

Partly in response to the rising cost of textbooks, OER have been developed to offset and reduce the cost of educational content, including textbooks (UNESCO, 2017). Recent research has shown that high quality, openly licensed textbooks can be made available to students at dramatically reduced costs. For instance, one study showed that students were paying about $90 per textbook and that in many instances they could find free textbooks with equal, or even better quality (Hilton, Robinson, Wiley, & Ackerman, 2014). By eliminating or reducing the cost of textbooks in this way, educators can also eliminate one of the financial barriers to a college education (Caswell, 2012).

Open Educational Resources ("OER")

The term "Open Educational Resources" (OER) was first introduced at UNESCO's 2002 Forum on Open Courseware. At this forum, the following definition of OER was established, "OER is teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions. Open licensing is built within the existing framework of intellectual property rights as defined by relevant international conventions and respects the authorship of the work" (UNESCO, 2002, p.4).

Definitions of OER vary, with many institutions creating a local framework that meets the objectives of their OER or affordable course content initiatives. The proliferation of OER provides a new option for evaluating, selecting, and adapting textbooks. Open textbooks are OER that allow students and educators free access to openly licensed educational content. In most instances, open textbooks are licensed to allow instructors to modify the content and customize it for use in their own teaching environments.

University professors, as well as K-12 instructors, schools, districts, and states, are now able to draw upon OER to retain, reuse, revise, remix, and redistribute course textbooks at dramatically reduced costs (Wiley, 2017). These open textbooks can also be iteratively improved by the authors from year to year or from course to course. To make these improvements most effective, educators need guidelines about effective textbook design and training on how to adapt them (Kimmons, 2014).

Partly in response to the rising cost of textbooks, OER have been developed to offset and reduce the cost of educational content, including textbooks. Recent research has shown that high quality, openly licensed textbooks can be made available to students at dramatically reduced costs, essentially eliminating the excessive costs of some textbooks as a barrier to a college education (Caswell, 2012). The proliferation of OER provides a new option for evaluating, selecting and adapting textbooks. Open textbooks are OER that allow students and educators free access to openly licensed educational content. In most instances, open textbooks are licensed to allow instructors to modify the content and customize it for use in their own teaching environments.

Effect of Textbook Cost on Students

Rising costs of higher education in the United States have made it so that the percentage of the cost of college borne by students (as opposed to government) has risen from 33% to more than 50% over the last 30 years (The Pell Institute, 2015). In the short span of 8 years, the total student debt in the United State nearly tripled from $364 billion in 2004 to $966 billion in 2012 (Lee, van der Klaauw, et al., 2014). These costs have risen so rapidly that the federal government has created a College Scorecard project, in order to help students better understand the costs associated with attending various colleges (Whitehouse.gov, 2015).

Textbooks are a significant part of the costs facing students, and in some instances can be even more expensive than tuition. The College Board (2013) estimated that full-time students at public two-year colleges spend $1,270 per year on textbooks and course supplies. In contrast, two semesters of tuition at California community colleges costs $1,104 (assuming twelve credits taken each semester). The cost of textbooks can be extremely troublesome for students; Senack (2014) surveyed 2,039 college students and found that 93.6% were concerned with textbook costs and that nearly half reported that textbook costs influenced the classes they took each semester.

Perhaps most significant is the impact that textbook costs can have on student academic behavior. The Florida Virtual Campus (2012) conducted a survey of 22,129 students and found the following:

- 63% of students reported not having purchased a required textbook due to cost,

- 35% reported taking fewer courses because of the financial impact of high textbook costs,

- 14% reported dropping (registered, but then dropped out *before* attending) a course because of the financial impact of high textbook costs

- 10% withdrew (registered for and attended classes and then withdrew) from a course because of the financial impact of high textbook costs

From this existing literature it appears that students have been deeply concerned with the cost of textbooks and report that these costs negatively impact their academic performance.

Faculty Perceptions of Financial Impact to Students

While there are many factors contributing to the costs of higher education, the typical professor cannot generally do anything about them (e.g., the cost of tuition). However, many faculty members do control the textbooks that they assign. Because open textbooks are by

definition free, faculty adoption of open textbooks can significantly decrease costs for students. One persistent challenge is that many faculty members are not aware of OER. Allen and Seaman (2017) surveyed a nationally representative sample of 2,144 college faculty members in the United States and found that only 34% of respondents were aware of OER. Moreover, they found that proven efficacy and trusted quality were the most important factors for faculty in determining which textbooks to adopt.

In terms of quality, faculty who have used OER have expressed positive perceptions of the quality of the OER textbooks they have used in multiple studies (Bliss et al., 2010). Moreover, Hilton (2016) examined nine efficacy studies when OER were substituted for traditional textbooks and found that students using OER did as well as or better than students using commercial products. Thus, the mantra that "you get what you pay for" does not actually apply to the use of OER.

In a similar perception-study of 80 instructors, Bliss et al., (2013) found that only 9% of instructors reported negative impressions of the OER material they used, with 34% stating that the open textbooks were better and 55% saying they were the same. They also found that more than 20% of the positive instructor comments reflected a feeling that the cost of the OER textbook was better both for the students and for them as instructors as well. In addition, one-third of instructor comments praised the customization and adaptability of OER material.

Another recent study (Martin et al., 2017) revealed that 83% of faculty surveyed were aware of the price of the textbooks they required students to purchase. Of total faculty responses, 69% were not aware of OER alternatives and of that number 53% reported that they would like help identifying suitable alternatives. This gap between the percentage of instructors aware of

OER and the number who would like help exploring OER alternatives may suggest a possible opportunity for improvement in overall awareness.

Despite the growth of OER-related textbooks and increasing evidence showing no significant difference in the quality of OER content from commercial alternatives (Hilton, 2016), a recent Babson Survey (2016) found that only 5.3% of faculty in higher education were currently using OER. The same study suggested that only 6.9% of faculty plan on using OER in the future and 2.5% indicated that searching for OER was 'easier' than doing so for published content. This is hard to explain given the following: textbooks play a key role in teaching and learning, textbooks are expensive, students would like to save money on textbooks, instructors would like to help students save money on textbooks, open textbooks can be found and downloaded for free on the web, and open textbooks can be modified and updated and shared on the web. If all of these assumptions have some truth, then why hasn't the innovation of open textbooks taken firmer root in higher education? To understand this problem better, it is worth looking at this phenomenon through the lens of Rogers' (2003) Diffusion of Innovation model.

OER Through a Diffusion of Innovation Lens

Innovation diffusion has been a topic of academic research since the 1960's and is best defined as an approach to explain the process for how new ideas, technologies, and products are spread and accepted in society. It has also been referred to by some as "Diffusion Innovation" and defined as "...the process of the market penetration of new products and services, … [involving] all of the interdependencies among consumers that affect various market players with or without their explicit knowledge" (Peres, Muller, & Mahajan, 2010). Many of the original definitions, frameworks, and models for innovation diffusion are the result of pioneering works from several authors including Fourt and Woodlock (1960), Mansfield (1961), Floyd (1962),

Roger (1967), Chow (1967), and Bass (1969). Of these authors, the best known is Everett Rogers who published his book *Diffusion of Innovations* in 1962. The latest edition is the 5th edition and is widely used today to describe this process and to identify elements and categories of diffusion.

Rogers proposes that there are four main elements that influence the spread of a new idea or technology. These include the innovation itself, communication channels, time, and a social system (Rogers, 2003). Rogers also suggests that as people adopt a new idea, they fall into one of the following five categories "...innovators, early adopters, early majority, late majority, and laggards" (Rogers, 2003). For the purposes of this study I used Rogers' elements and categories of adoption and try to determine how OER, as a relatively new idea and/or technology, can be understood through these criteria. Doing so allowed me to understand the perceived barriers that are in place that might contribute to its relatively low adoption rate.

There has been a good amount of quantitative research to seek to understand and identify barriers to OER adoption. Recent quantitative research from the OPAL study reveals that individuals are faced with five main barriers when they want to use OER: lack of institutional support; lack of technological tools for sharing and adapting resources; lack of user's skills and time; lack of quality or fitness of the resources; and personal issues such as lack of trust and time (OPAL, 2011). Additional research from the OPAL studies suggests that "greater efforts will have to be made in the future to understand the personal, organizational, and environmental factors that hinder or enable creation, sharing, use, and reuse of OER" (Ehlers, 2011, p. 2). The comment that the "...barriers (to OER) have not been addressed in research…" served as the primary motivation for this study. Since most of the research to date has focused on quantitative analysis and very little qualitative research has been done, this study captures the lived

experiences of faculty as they adopt materials and approach OER, and connects these

experiences back to Rogers' model and the findings of OPAL.

CHAPTER 3

Method

The aim of this phenomenological study was to capture and understand a context of meaning of a few faculty members' lived experiences in seeking and adopting new content, and especially open content, for the courses they teach. In this study, I conducted over 16 hours of interviews with 8 different faculty members at Brigham Young University (BYU) to answer the following three research questions:

(a) What influenced faculty to adopt new teaching materials like textbooks?

(b) What influenced them to choose textbooks from a publisher vs. using alternatives like OER?

(c) If they did select OER, how did the find them, did they modify them and with what tools, and did they take the effort to share them?

A previous (2016) Utah Academic Library Consortium (UALC) survey was conducted at Brigham Young University by members of the BYU Harold B. Lee Library to gather information about faculty and student perceptions toward OER. One of the questions asked of the participants was if the individual (faculty member) would like assistance in seeking open resources and if so, if they would share their personal contact information. Over 38% of respondents expressed interest in receiving help and shared their contact information so that they could learn more about where to find and adapt open resources for their courses. Operating from this list, I sent over 150 email requests to BYU faculty members to request their participation in this study.

Creswell (1998) suggests that qualitative research is the best approach when seeking specific, rich information of a given experience. I have selected to use phenomenology in order to gather data about the lived experiences that faculty had when searching for, evaluating, and

adapting OER content. My research is guided by Dahlberg, Dahlberg, and Nyström's assertion that when conducting phenomenological research and seeking to capture lived experiences that "there is a general form of the phenomenon … an essential meaning or essence to the phenomenon, which makes the phenomenon what it is" (2008, p. 250). Through this study I have sought to establish the 'essence' of faculty members' experiences when seeking new content, especially 'open content,' for the courses they teach.

Phenomenological Method

Phenomenology seeks to identify the lived experiences of individuals and how they perceive those experiences (Creswell, 1998). According to Moustakas (1994), researchers using a phenomenological approach do so to view the world through the subject's point of view and then use those observations to identify their perception. This allows the researcher to identify a person's perception as reality as observed using their own words, descriptions, and interpretations. According to Moustakas (1994) there are three major methods or phases that make up phenomenological research as a whole: preparation, collecting data, and analyzing data. For the first, method preparation, Moustakas (1994) identifies three separate activities when preparing for phenomenological research: clearly identifying the phenomenon being researched, choosing the participants to interview, and disclosing personal assumptions and/or bias, referred to as "bracketing." The following sections articulate how I propose to use these activities in my research.

Identifying the phenomenon. As mentioned earlier, the phenomenon in question was the lived experience of BYU faculty as they seek to identify, acquire, and adapt OER content for their class. Using the email addresses provided in the UALC survey, I invited faculty who had actually attempted to find OER as participants in my research study. Since the phenomenon was

the experience they had while seeking OER, I needed to find and identify individuals who had, in fact, sought OER material on their own.

Selecting the participants. Patton (2002) argues that in order to conduct effective qualitative research the researcher does not need to "interview a large number of participants" (p. 245). Rather, the researcher can gather an appropriate amount of information when he/she focuses on intentional, purposeful sampling that captures the participants' "rich descriptions" (p. 240). He further suggested an approach in which "researchers estimate the minimum number of samples required to cover the topic at the outset and make adjustments as needed if it becomes clear that more participants will be beneficial" (p. 246). With this in mind, I interviewed 8 participants: 4 men and 4 women from different backgrounds, university status, levels of involvement and interaction with OER, and from different departments. I did so with the understanding that if as I did so I did not feel that I had enough information to draw conclusions or establish a specific trajectory with regard to common statements and/or themes, I would do as Patten (2002) suggested and select 2-3 additional faculty members to interview. In reading Patten and looking at other phenomenological research, the number of participants is generally no more than 10 and the final numbers is left up to the researcher to select how many interviews to conduct and if additional interviews are necessary. With regard to appropriate sample size, research suggests that the guiding principle should be the concept of saturation (Mason, 2010). By 'saturation' it is suggested to judiciously select the number of people you believe will give you the right amount of rich descriptions relative to your research topic. In the end, the correct number of people to interview is up to the researcher as the subject of saturation is still debated, and some say little understood. In the end, eight participants provided enough detail and rich description to reach saturation and to sufficiently answer the research questions.

Participants included those who participated in the UALC survey (Martin et al., 2017) and requested further assistance with selecting and adapting OER materials for their classroom. A copy of the survey is available in Appendix A. Included in this survey are the following questions:

Q14 - If a suitable open textbook could be identified for the course you teach, would you be willing to use it?

Q15 - Why would you be willing to use an open textbook?

Q16 - Why would you not be willing to use an open textbook?

Q17 - Would you like assistance in identifying a suitable open textbook?

Q18 - Please provide your name and email address so that a campus librarian can assist you in identifying a suitable open textbook for your course(s).

Faculty who volunteered their name and contact information and their accompanying open responses to questions 14 - 17 were used to screen and select participants in my research. These responses were used to identify faculty who were aware of and willing to use OER and those that were not. I used the email addresses to contact faculty directly and to explain my research and ask for volunteers.

Bracketing personal assumptions. Researchers are human and prone to error, thereby engaging in qualitative research with different backgrounds, preconceived notions, and personal bias. By its very nature, qualitative research is subject to human error, and the results often raise questions about validity because of personal bias (Norris, 2002). The phenomenological process of accounting for this obvious flaw in qualitative research is known as "bracketing" (Creswell, 1998). Creswell (1998) suggests that by identifying personal bias of those participating in the research process you accomplish two things: (a) you inform your readers about the researcher's

background, but (b) you also allow the researchers, themselves, to be better informed and self-aware.

Bracketing, or epoch, is the process by which the researcher momentarily suspends his/her personal views, or bias in order observe and seek to understand a given phenomenon through a new lens, or point of view. The phenomenon speaks for itself and is not contextualized in prior knowledge by the researcher (Moustakas, 1994). In this study, the epoch I encouraged the participants to discuss how they select course material and if they have sought to use OER and what their (lived) experience was in doing so. I had them to describe the process, experience, or phenomenon as if they are doing so to someone completely unfamiliar with the process. I provide the following statements to make visible potential areas of personal bias relevant to this study and to assist in my own process of bracketing.

Bracketing strives to minimize bias, increase validity and reduce error so that the results and interpretations of the results can improve validity or be trustworthy (Norris, 2002). Guidelines for conducting phenomenological research by various authors including Patton (2002), van Manen (1990) and Lincoln and Guba (1985) shows that qualitative researchers need to self-report, or "bracket," their personal biases in the early stages of gathering information to establish trustworthiness. In conjunction with these guidelines, I provide the following information in order to call out my own personal biases as part of this thesis project proposal.

I have spent over 20 years in the information technology sector designing, building, deploying and supporting computer systems, online tools, and websites. I have been formally trained on what makes websites easy to use and what constitutes "good user design" or "usability." Because of my background, I was aware to ask open-ended questions about the systems and tools instructors use to adapt course materials including textbooks.

While I have taught thousands of lessons and participated in leading professional training courses, I have not taught at the university or secondary education level. While I have designed and created curriculum, I have never been responsible for selecting free or published course materials. I have never used, downloaded, read, or adapted a free, open source (OER) textbook. This is important, I believe, because while I consider myself an advocate or supporter of OER, I have never actually used OER material as an instructor.

Demographics

Brigham Young University is a private higher education institution in the western United States. I purposefully selected an even mix of men and women (4 each) and a sampling of different faculty based on their rank and status with the university (e.g., adjunct vs. tenured). Each of the participants signed an agreement that allowed me to use their exact statements.

Table 1 provides details on the resulting purposeful sample. To protect my users, I assigned pseudonyms that reflected each participant's gender.

Table 1

Information on Study Participants

Faculty	Gender	Academic Rank & Status	OER Awareness
Julie	Female	Adjunct	New
Michelle	Female	Adjunct	Aware
Angela	Female	Tenured-track	New
Kate	Female	Tenured-track	Aware
Don	Male	Adjunct	New
Matt	Male	Adjunct	Aware
Phil	Male	Tenured-track	New
Colby	Male	Tenured-track	Aware

Data Collection

Bloomberg and Volpe (2016) suggest that there are three types of qualitative research: induction, deduction, and abduction. Induction is data-driven and states that data lead to theory. Deduction is theory-driven and seeks to create frameworks in order to interpret the data. Alternatively, abduction seeks to understand why something happened and how that knowledge can be used to do something. My phenomenological approach to gather data was abductive in that I wanted to better understand the "lived experiences" of faculty as they go through the process of selecting textbooks and specifically as they try to use OER for the classes they teach so as to identify best practices or opportunities to improve the process. If there are tools and processes that are working well and that enable instructors to implement OER successfully, I wanted to highlight those and find ways to increase awareness. Conversely, if there were challenges and/or barriers to using OER I wanted to identify what those were and identify potential solutions from other instructors who successfully deployed OER.

Phenomenological research typically follows an informal, interactive, open-ended interview process where the researcher prepares a contextualizing statement and a series of questions designed to help the participant provide a comprehensive account of the phenomenon being studied (Moustakas, 1994). The researcher is not, however, bound to use these questions if the participant is able to convey a full account (Moustakas, 1994). With this approach in mind, I used a semi-structured interview protocol. I planned questions that encouraged the interviewee to share as much first-hand information as possible and attempted to bracket my own assumptions.

In seeking to obtain an epoch perspective, the participants were free to discuss in detail their experience in a non-restrictive manner. Having a set of questions before the interviews helped me to shape my thoughts and the direction that I wanted to have in our meetings. In order

to find rich, descriptive information from the participants I used the following questions that mirrored my stated research objectives as follows:

1. What influences you to adopt new teaching materials?

2. What influences your decisions to select published content vs. open/free materials?

3. If you have searched for and selected open/free materials, how did you attempt to use (or not) them (e.g., adopted, adapted, or revised)?

The interviews began with these general questions about how textbooks and other teaching materials were selected for the classes that they taught. It was interesting to me how excited and willing faculty were to share with me the process of how they selected teaching materials. I interviewed eight different faculty members and each had a different method that was used to select textbooks. While those that I spoke with knew I was interested specifically in OER, I rarely had to guide the conversation in that direction. When the topic of OER was raised I allowed the conversation to naturally go in that direction. My follow-up questions then focused around what they knew about OER and if OER was a consideration in the overall textbook selection process. I remembered that the results of the UALC conducted (Martin et al., 2017) revealed that, generally speaking, 91% of BYU faculty were willing to use OER, but that less than 6% actually did. The comments that were captured shed light as to why this might be the case.

I conducted the interviews using phenomenological methods and allowed each person to share his/her thoughts at their own pace and in their own words. All of the interviews took place in the participants' respective offices. This was by design, as I wanted to be able to see what they saw as I asked them to show me how they search for and acquire textbooks. On several occasions they would show me books, policy statement, websites, and personal documentation on different

subjects. Each interview was digitally recorded and then transcribed. While each interview was unique there were still common ideas captured and several consistent themes identified. All of the recorded interviews were transcribed into printed text.

These individual responses of all the faculty were then combined into a spreadsheet in order to begin the coding process. To stay true to the phenomenological research, many quotes are shared in the pages that follow so as to represent the 'lived experience' of these faculty members as they go about the process of selecting textbooks for their classes. Specifically, the quotes are their actual words--no editing, or restructuring of the comments took place. I wanted to capture and share the actual statements as they were recorded so that the reader could sense what these faculty experience as they select textbooks.

I used Strauss and Corbin's (1990) approach of using three levels of codes including open, axial, and selective/thematic. This approach has proven to be an effective analytical method that guides the researcher past mere descriptions and into conceptualization and theorizing about the data obtained (Kendall, 1999). After the transcribed text was placed in the spreadsheet I went through each of the individual statements and, using their own words, pulled out the main thought. These statements were used to create the "open" codes, using their actual words with no editing, or modification of the text. The open statements were then compared to create the axial and selective, or thematic codes. This approach was effective in organizing, capturing and depicting the sentiment shared from the faculty.

CHAPTER 4

Results

Analysis of the open codes resulted in the development of 12 axial codes organized by 5

overarching themes as shown in Table 2.

Table 2

Thematic and Axial Codes

Thematic Code	Description	Axial Code
Content Selection	Comments related to how textbooks were selected.	• Policies for integrating content • Teach how to select good content • Relevant content selection criteria and process
Technology	Tools and skills that are needed to access and adapt textbooks.	• Access to content • Technical skills
Resources	In terms of people and money needed to acquire textbooks.	• Time • Funding
Development	The process of procuring a textbook.	• Content Development Process • Pedagogy
OER Definition	As a viable alternative to purchased material.	• Understanding of OER • Rationale for using OER • Attitudes toward free content

The following sections will discuss the five thematic codes and will contain tables that give

examples of interview text and open and axial codes that helped comprise each theme.

Content Selection

Each interview began with questions about the process for how textbooks and other

teaching materials were chosen--categorized as, 'content selection.' While most instructors were

free to choose their own textbooks, some departments have committees that are used to evaluate

and select textbooks--especially, for courses considered "General Education" that have many

students. In both cases--those who can select textbooks on their own and those that are members of committees--I asked participants to share with me the process, tools, and criteria that were used to influence their decision. In each interview, the instructor brought up the subject of OER on their own. Each instructor I interviewed stated that they were indeed willing to use OER in the place of published/purchased textbooks. When asked why this is true, the usual response was to reduce the financial burden placed on students. They all knew that OER textbooks were available at no cost to the students, but while "free" was good, the quality of the textbook was important. It was interesting that most instructors I spoke with equated "free" and "OER" textbooks to being "digital." Two of the people I spoke with asked me if OER material could be printed out. A common assumption between most faculty I spoke with believed that OER textbooks only existed in digital format. Table 3 contains some sample texts that I gathered in the interviews and an example of how the text was coded into Open and Axial themes.

Table 3

Content Selection Quotes with Open and Axial Statements

Interview Text	Open	Axial
So, I guess at the heart of it all, I think it's an issue of building an identity for them. Instead of spending my time trying to teach them content (although we do plenty of that) I'm trying to help them construct a professional identity and set of professional philosophies for themselves.	instructors need to establish a clear identity in how they teach and find content that supports	selection criteria
CM: See that's a loaded question because if you were to ask me about copyright in general, in many ways it's the bane of my existence because I use huge quantities of images in my professional presentations, because I am a cherry picker, or an eclectic instructor, when it comes to the kinds of texts I want my students to be exposed to.	feel guilty for using cherry-picked content	policies for integrating content
Textbooks, by definition, are not on the cutting edge in science. There's no way they can be.	Textbooks are outdated	content types
So, from the second they come into my undergraduate classes, even in the very first intro class, I start talking to them about why they need to be professionally engaged;	provide them skills and training to select content	teach how to select good content
We really scoured the market, but the textbooks were all quite expensive, and to us they seemed not that much better than what we were using.	non-OER were too expensive and didn't meet model	content selection process
The tone with which you speak, the graphics, the visuals you use, and about two years ago, I just became really uncomfortable with our textbook, I was often saying "don't believe this and believe this" and I had to do a lot of extra work to bring in current information and things like that.	existing textbook wasn't current, relevant with students	relevant content

Before I conducted my research, I believed that textbooks were the primary tool used to deliver content to students. However, one instructor (Julie) said, *"Textbooks, by definition, are not on the cutting edge in science. There's no way they can be."* When asked why that was so, or what Julie meant, the instructor expressed the opinion that the moment the textbook is printed, it is already out of date. This perspective was shared from faculty in technical disciplines like software development, engineering, or areas where there are constant discoveries being made and the content is in a constant state of change. For other disciplines such as language learning and statistics many of the things taught have not changed in decades.

In addition to instructors acknowledging that printed textbooks are viewed as obsolete, one instructor said,

Students today have a hard time reading. The future of textbooks will be videos. Reading technical content is hard. This generation is used to watching videos. As a department, we want to push back. We want to keep technical content as read-only. But, maybe incorporate video to enhance. Students need to learn to be able to read technical papers. (Don)

So, whether 'textbooks' are printed, or some other medium, such as video, is used, instructors have a constant battle to selecting content that is relevant and of high quality. To better understand the subject of relevance and quality, I asked many questions about what tools, or methods they used to guide and inform that process. The following represent common axial codes from each interview:

- Policies for integrating content
- Teach how to select good content

- Relevant content selection process

It is worth exploring specific responses in each axial code to better understand this theme.

Policies for integrating content. One of the recurring axial codes around integrating content was concern of complying with copyright restrictions on material. The following quotes represent some common feelings around copyrighted material:

So really, I would do chapters out of digital textbooks, but copyright is a big pain. I don't know how to make sure what I'm using is 'legal.' (Julie)

Dr [X] retired a couple years ago and intended to keep the textbook going, but he was in his seventies when he retired and the content was not fresh for today. He knew the process for checking outside material that may, or may not be copyrighted. I don't know how to do that.

...I haven't really interacted with the Copyright Office enough to be able to say quote-unquote 'whose side they're on'. When I have interacted with them in the past I left feeling overwhelmed with the amount of work required to include copyrighted content. I remember thinking 'this is just not worth the time and effort'. (Michelle)

What I can tell you, is that in my first year as professor here, in the orientations for the Center for Teaching and Learning--or Faculty Center I guess it was--they had information about the copyright office and that you could have packets made. That was very helpful and I wish they still offered that service. (Julie)

[I]n many ways [copyright is] the bane of my existence because I use huge quantities of images in my professional presentations, because I am a cherry picker, or an eclectic instructor, when it comes to the kinds of texts I want my students to be exposed to. I really wish there was a department on campus where I could go for help, like the Center

for Learning and Teaching, or even more people in the Copyright office itself to help me. (Kate)

The prevailing sentiment about copyright and the copyright office by those I interviewed was one of knowing that it was necessary and a desire to comply with federal and university policies, but this was coupled with frustration and fear. There was a desire expressed by each interviewee for help or assistance in navigating the process, and this willingness was tempered by fears that emerged from not wanting to violate copyright.

Several instructors stated that they would be willing to generate more content, or even adapt content that they found, including OER, but they feared being "caught" or reprimanded for possibly violating copyright. Every instructor was aware of copyright rules and had a desire to be compliant. Very few, however, had the desire to take the time to reach out to the copyright office and go through the steps necessary to have the content reviewed and approved. It was easier to just use something that was already commercially published and approved and not bother with materials that might require some copyright know-how.

Teach how to select good content. In almost every interview that I conducted the topic of how to find "good" and "relevant" textbooks came up. These conversations focused on the criteria they used to "spot" good textbooks and the process by which they were taught as new faculty to identify good textbooks--or, how they learned how to do this on their own. The following quotes shed light on these points:

To some degree, we assume that [new faculty] already know what is and isn't a "good textbook." I was a department chair for three years and I assumed they already had some criteria to use in selecting textbooks. I think with the younger faculty, that there's more of

a motivation to find these open access, or "free" sources. Online, digital, or "free"

textbooks seems to be an emerging fad. (Don)

 I try extremely hard to model good digital citizenship for my students and for new

faculty. With regard to selection criteria, or "training" to students I do the following: find

out what is current in the field by serving on national committees and attending

professional conferences. Being aware of district and/or departmental requirements and

to go into those environments and start advocating for change. (Julie)

In both of these instances, participants mentioned criteria or processes of selection, but these

tended to be informal (e.g., modeling) and non-descript.

When pushed on how they ensured that the textbooks they selected were actually good,

many instructors talked about the need for having a sense of empowerment or confidence by

being active in departmental settings and participating in public conferences. Instructors also

seemed to interpret quality (of textbooks) solely in terms of content accuracy. The following

quotes are indicative of this sentiment:

In selecting textbooks. I can't solve it all for [new instructors], but ... I do know that if the

textbook is technically accurate, chances are that it will be considered "good" by another

faculty as well. (Phil)

If new instructors have been taught how to interact in faculty meetings about textbooks

that have correct content and if they know what's being used nationally, or in other

countries, you can be relatively confident that the textbooks are high quality. (Matt)

In large part, instructors are free to search and select textbooks on their own. Everyone I

interviewed seemed to take this process very seriously. Instructors are constantly searching for

quality and relevant content to use. Interestingly, textbooks aren't always the first thing that they

look for. Online content, especially digitally recorded video, is often more easily found and used to teach certain ideas and concepts.

   Relevant content selection criteria and process. When asked if OER were considered in the textbook selection process most said that they were not. There was one instructor that said OER came up when considering general education courses. For "GE" courses this person (Kate) felt that there seemed to be more rigor around selecting a textbook and that there were usually more individuals involved in the selection process. She explained:

> For this [General Ed.] class, since it's a huge class, there are usually 5 or 6 faculty who teach the classes each semester, so they form a committee and they're the ones who decide the materials, review quizzes and exams. The content doesn't change that much, but what is interesting is that they're not the same from the previous semester. They're the ones who decide what books will be used and depending on who is on the committee the textbook can change. If our department were to use or consider an OER textbook it would probably be in this committee. (Kate)

However, not all committees' decisions are implemented. Matt explained:

> Well there is a committee that meets once a year to review the different courses that are taught. This committee doesn't have a lot of oversight or teeth to enforce the recommendations to update content. Each instructor or faculty member is left to him or herself to choose the content that is used within the classroom. So, some courses we have a textbook selected are the same ones we have used for several years. (Colby)

For courses that involve many students (generally more than 50) multiple instructors, or designated committees work together in the process. Everyone seemed open to using OER if it

was deemed high quality and relevant to the course. This process seemed to me to be ongoing--in other words, it doesn't seem to be a single event every few years.

Even when formal committees are not used, however, faculty often relied upon advice from their colleagues in curricular decision-making. Some example comments included the following:

Most of us tend to consult with our colleagues in the section about that, and then I know that some people would also consult with other people nationally about what they're using at other universities. (Angela)

If you teach the undergraduate methods courses, I have used kind of what I wanted for a while, and everybody kind of uses the textbook differently and to a different extent. As far as the graduate courses are concerned, you can pretty much do whatever you want. Although, like I said, we try to sort of touch base with one another. But, never has OER been considered as a viable option. (Michelle)

When trying to explain why OER were not generally considered at either committee or individual levels, participants generally cited lack of motivation or encouragement, as Matt explained: With regard to motivation or encouragement to use OER content the following comments reflect a common theme.

Inertia to use OER, or any other type of e-Textbook, is non-existent. … What is there [OER] with all the materials available we choose a textbook that has a robust set of supplementary exercises, including the higher orders of Bloom's taxonomy. We are very selective about choosing the textbook we're going to use. We aren't going to use OER just to use OER. We have the same kind of approach with all our classes. We call these the shared curriculum classes because there were multiple programs and departments that

were relying on these classes to provide predictable content and predictable learning objectives. (Matt)

From the instructors I met with it was evident to me that looking for a good textbook and consulting colleagues was important in the decision process. Looking beyond their department and seeing what other instructors at other universities was also important, but this process was not typically influenced by factors that might lead to OER adoption (e.g., student cost considerations, adaptability). Phil, however, described one instance when his department was very interested in OER as follows:

Thinking back on the 20 years of my career and all the hours I spent reviewing manuscripts for various publishers, it dawned on me that I was providing this professional service, essentially for free. When I looked into how much the publisher was charging for the very textbook that helped review and edit, it really irritated me. So, when the time came for us to find new textbooks I talked to our program director and several of the other faculty about choosing a new textbook and to research using a textbook that was from a different publisher. We spent a good deal of time searching hoping that there might be something better out there. We really scoured the market, but the textbooks were all quite expensive, and to us, in the end, they seemed not that much better than what we were using. This experience really made me motivated to look into using OER. (Phil)

It was interesting to me that textbooks were generally selected on the sole basis of the content being accurate and that accurate content was considered "high quality." Committees and departmental policies influenced what textbooks were used, and what had been used in the past, the status quo, was considered good practice and a safe option for general education courses. In

other words, sticking to the tried and true textbooks was always a safe (and quick) choice, and though everyone was familiar with OER, as Phil mentioned, "...you don't do OER just to do OER."

Technology

Most OER, including textbooks, are found on the Internet and stored in a digital format. It may seem obvious, but in order to use OER you need to know how to search for and download digital content. Searching for and downloading content from the Internet are fairly basic skills that we can assume most faculty know how to do in a general way, but I was interested to learn how instructors used these skills in order to find and download digital OER content. I had assumptions on what tools (e.g., Google) instructors would use, but I really wanted to invite them to show me how they would go about finding OER. So, after beginning the interviews talking about how they select content in general, I would ask them to show me how they would find OER content. Table 4 highlights examples of comments related to technology and how they were coded into Open and Axial categories.

Table 4

Technology Quotes with Open and Axial Statements

Interview Text	Open	Axial
I'd probably type in something like that and see what comes up. I know that there are portals of open educational resources, but quite honestly, I have no idea where they are or how to use them.	Not aware of the right search terms	Access to content
Even if, and that's a big 'if', I knew how to find OER materials--I don't know what tools are there to download the content. I don't have computer science skills and I don't know what techniques are needed to prepare the content for my class.	Do not know how to find/use tools to modify OER	Technical skills

In addition to searching for and downloading an OER textbook, I wanted to know how they would modify the content for use in their class. The following quote is indicative of nearly every response I received to the question:

Well, I would probably start with Google, quite honestly. I'd probably just type in something into Google like, "[subject] OER textbook," and see what comes up. From there I would just go those websites and look for textbooks that had good reviews--you know, like shopping on Amazon. (Julie)

This statement was typical of many of the instructors that I spoke with. The first step in searching for OER is to go to a web browser and find a search engine and use search terms such as "OER, [subject matter], free textbooks, high quality." Many of these searches return sites such as uen.com and openstax.org for general categories such as biology, math, etc. But, for more specific subjects there are relatively few options. Another interesting observation from Phil

is that these sites have more information about how to donate than actual search capabilities for specific subjects.

Another common follow-up response within the "technical skills" axial category was exemplified by this statement from Michelle:

I know that there are portals of open educational resources, but quite honestly, I have no idea where to find them. There are OER experts on campus that I would probably call, for example, one person (if you haven't talked to him already) is a professor in the Education Department. (Michelle)

What is interesting about this quote is the desire to talk to someone expert in the subject of OER. In other words, most instructors I spoke with just want to talk to an OER expert and ask questions and seek guidance. As a follow up question, I asked Michelle if she had reached out to this individual in the Education Department (she knew his name) and she had not. There is an opportunity here to provide more education on OER experts and how to contact them. This information needs to be easily accessible and readily available.

Besides identifying another expert faculty member as a means to find OER, I found it interesting that this individual would prefer to interact with a person rather than an online search tool, like Google. This response was not unique to this person. In almost every interview the person would attempt to use Google and then begin talking about how he/she would rather just "work with someone" who could show them how to find OER.

I grouped technology-related responses into two categories: 'Access to Content' and 'Technical Skills'.

Access to content. The ability to find and access textbooks is a huge barrier in OER. Even in the course of my interviews, I witnessed the frustration and confusion in going through

the search process. On a few occasions, we were able to find and download an OER textbook, but then faculty struggled with what to do next. One appealing feature of OER is the ability to modify and adapt the content to meet your needs. If the process for searching for OER was difficult, then the process for modifying the content was even more so. In part, this is because most OER are in the Portable Document Format (PDF) and are not easily edited with basic word processing applications. The following quotes shed some light into what instructors face when trying to edit such content that they found online:

> I don't know how to do that. I don't know what tools are there to edit this book. It appears that most of the content is in digital format and we would probably need to hire a student with computer science skills in order to modify this file. (Don)

> Maybe there are videos online that show techniques for how to edit this file. I know that there are videos or online chat rooms that have online resources such as or other repositories where there are code and people readily available to help." (Kate)

> I have no idea [how to modify this file]. None of the ones I've found are modifiable. I wish that the website would include tools, or at least instructions on how to open and modify this textbook. There is nothing posted on their website for how to do this. I'm stumped. (Don)

One instructor, Angela, was determined to figure OER out and went through the process of finding, downloading and modifying a textbook she discovered online. I asked Angela to share with me the experience. This was the response:

> Well, I wish I would have known how difficult this process was going to be. I'm not sure I would have gone through it if I knew. It requires a lot of time and people with special skills. It was hard and the process required us to use at least three different software

programs. One, that we used to 'unlock' the file and then another that we used to make changes. Before we could print it, we needed to use another software program. It was a long time ago and I can't remember the specifics to give you the details. (Angela)

Finding OER content is a daunting task in and of itself. Angela was determined to push through this process and figure it out. She did, eventually, find a suitable textbook, but the next step of figuring out how to change it was even more difficult. Again, she took the time to push through this process, but most faculty did not. She had to search, find and learn how to use three separate applications that were needed in order to modify the textbook, and such barriers to OER adaptation seem to turn faculty away from using them, since most faculty simply do not have the time or interest required to push through this process.

Technical skills. As highlighted by Angela, there are certain technical skills that are required to adapt an OER textbook. In addition to knowing how to search for possible candidates, you need to know how to download them and then find tools that enable you to change, and modify the text. But changing text isn't enough, you also want to create graphics and illustrations to teach different concepts. Most instructors know how to use graphical tools to do this, but there is a certain amount of skill required to incorporate them into the format of a textbook. Below are several quotes that highlight this particular challenge of acquiring and applying the technical skills necessary to use OER.

We are lucky because of the course we teach our students will have the skills necessary to create new digital content. But, I feel sorry for other programs that don't, or can't teach these skills. Everything is becoming more complicated especially in terms of the technology side of things. (Phil)

I also see students who end up working in online schools or things like that, so I'm

finding that a lot of the existing textbooks can't prepare them to do what I think they need to be doing. I have spent the time to come up to speed so that I know how this stuff (like OER) works and I have skills necessary to do this. Many do not. Many do not have the time, or incentive to learn. (Kate)

To generate teaching materials, I use an application called, Latex. Latex is really modular and generates really nice PDFs. If, and I'm not, were told to create an OER textbook I would use Latex. 99% of my colleagues, however, have never heard of it. I have no idea how they'd start. (Don)

If I were told by my Department Chair to create an OER textbook I would probably start with Google docs, or Word, because that is what I know. Is that bad? Google docs is underdeveloped for some things you'd want to do. Word lets you generate captions for figures. Trade-off is complexity--the content is not complex, but the makeup of the textbook is complex. As I think this through, I'm not sure either application would work. I have no idea to answer your question. (Julie)

Searching for and modifying an OER textbook is a highly technical process and requires several different skills above and beyond normal text editing. The lack of search tools and applications to modify OER content is a major barrier for most instructors I spoke with. It would require a great deal of time and effort and most have neither the time, or incentive to go through this process. If there was a group on campus, like the Center for Teaching and Learning (CTL), that would provide this service and/or offer to teach faculty the skills necessary to use OER I believe from my conversations that more faculty to reach out and give OER a better chance to be used.

Resources

"Resources," or the lack of them, was a common theme with regard to instructors who consider using OER. Simply put: it takes time to find, download, and edit OER textbooks. And, for many instructors--this is simply too much time. While the concept of "free textbooks" is noble, the reality is that it takes a great deal of time and money to create, and even adapt, a quality textbook. In Table 5 is an example of comments that were captured and how they were coded into Open and Axial categories.

Table 5

Resources Quotes with Open and Axial Statements

Interview Text	Open	Axial
I think when the publisher gives them a new edition of the textbook, they simply don't want to go out and surf the web and find a new online textbook. I think that seems like too much of a daunting task for them. I think it would help if someone else would search and inform us of viable alternatives.	OER takes too much time	Not enough time to spend in selecting content
We were trying to figure out what our alternatives were. At the time we decided that we could maybe do this, we didn't really know where the money was going to come from. That's always the big question with OER.	How will we pay for the development of OER?	Lack of resources

Two faculty members I interviewed, Julie and Michelle, received time (away from their normal teaching load) and additional funding to create new textbooks. The funding was used to hire students, purchase software, and take additional courses to acquire new skills. This process, on average required over $10,000 per textbook and 12-18 months to produce. A few departments that had supported the notion of creating OER material for students still encouraged their faculty

members to charge students in order to recuperate the invested development costs. Several departments received grants in order to develop the OER textbooks but not funds necessary to cover ongoing maintenance to keep the content up to date. It was in those situations that departments asked faculty teaching courses with OER content to ask students for donations. In the rare case where a faculty member developed a new textbook there was little, to no thought to share what they developed with other colleges, or universities. Many responses from the faculty I interviewed expressed that the technology or the tools needed to package, upload and share is hard to find and even harder to use. Two axial categories, "time" and "funding", emerged as common themes when looking at comments related to resources. With regard to both categories responses were pretty clear that each was a somewhat scarce resource.

Time. The lack of time to create or modify an OER textbook was mentioned in each of my interviews. Even the simple task of finding and downloading a new textbook takes time and due to the lack of useful search tools, many simply do not try. Some example quotes include the following:

> I do think that the lack of time and money are two of the main reasons a lot of instructors just pick a textbook and go with it, because … it's easier in term of 'everything is all in one place'. The downside, in addition to the cost on the student is that the course becomes sort of static. You simply don't have time to redo the course --it's just easier when it is all laid out for you. So simple to just default and follow the textbook. (Phil)
>
> I think when the publisher gives them a new edition of the textbook, they don't want to go out and surf the web and find a new online textbook. I think that seems like too much of a daunting task for them. I think it would help if there was a group on campus, maybe a resource that they could contact in the library and ask them to find 10 possible online

textbooks on genetics. If they did that--the search--and then we can take the time and sit down and spend an afternoon and look through the content--I think that's something that the University could do to help with this. (Colby)

I think that my position may have something to do with this creation because I imagine that if you're really gunning for publications, you just don't have so much time to think about it. (Julie)

That process of looking for a textbook took about 6 months. We did an extensive search-- there was no way we could take an additional 6 months to modify it. (Angela)

We were trying to figure out what our alternatives were. At the time we decided that we could maybe do this, we didn't really know where the money was going to come from. It's time. The amount of time it takes and money. To adapt and change and to hire a TA to do the grunt work. (Kate)

Unless you find already the ideal book out there, then there's no sense to reinvent the wheel. The amount of time that it takes [to] look for a new textbook is greater than the reward or the incentive to do so on his own. (Don)

I have included many direct quotes in this section. Of all the different responses I received throughout the course of this project, the most often cited reasons for not pursuing OER was the lack of time and the lack of (development) resources. There were many comments stating that if someone else on campus (CTL and the Library were the two most mentioned) were to do the research and development then the instructors would be very open to evaluating OER alternatives to published content. In other words, if these groups, or groups like them, would take the time to do the leg work into finding possible OER alternatives to published textbooks, more

instructors would consult them for ideas. The following comments are indicative of this sentiment:

Most professors are involved in their research ... they are involved in contributing to various projects and there simply is not enough time to stop any of those and to look for additional textbooks that might play an important role in the classroom. (Michelle)

For me, it's [tenure] first. Nothing else matters for me at this point until I achieve [tenure]. (Kate)

Funding. In order to create OER instructors need money and people. Money is needed to augment existing staff, to reformat content, to create new content, and to maintain existing content. Money is also needed to license software used in editing and formatting content. Several of the following quotes underscore the need for both:

I was talking to [a librarian] about our situation and how we didn't know where to get money and she said that she might have an idea for us because in the librarian world they're always trying to find ways to repurpose the library and use the resources well. She said the friends of the library might be willing to make a substantial donation grant and give you some money to get going on it. I talked to our Department Chair and he created the grant proposal and it was accepted. (Angela)

Once we created our textbook we were asked, "how do you plan to maintain this?" There has to be some source of revenue. They weren't at all familiar with the open educational resource model and so it didn't make any sense to them. That's when they suggested we ask students for donations. (Angela)

Well there are resources on campus to help faculty to create their courses and to do this type of thing such as the copyright office but I don't believe we have enough increase

awareness of what these resources are why we should use them or what tools are available in order to really follow the spirit of open educational resources. (Don)

I don't know what, if any, resources exist on campus who know about and are willing to help us create OER. I received an email once from the Library and was invited to go to an OER seminar. I was very interested, but it was a bad time of the semester for me. Sadly, it was only offered that one week. I wish they'd offer it during Spring or Summer semesters. Aside from that one seminar, I'm unaware of other resources. (Matt)

[Developing OER is] still a thing we're thinking through, but that's kind of how we were thinking in the beginning, and we thought we had enough in the beginning, and we didn't know--we thought maybe we even had enough to finish with so we just got going. We didn't have enough. Thanks to the Library, we were able to acquire additional funds to complete the project. (Kate)

The last quote was very insightful as it portrayed a situation where the department was willing to begin an OER project but did not have enough information in order to properly estimate the project budget. In their case, additional funds were acquired from the library mid-project, and they were able to complete the project. OER is often touted as a "free solution," but for departments it requires time, people, and money to develop.

Development

Developing OER can be a time-intensive and laborious process, and one of the primary reasons that instructors might invest the time and money to develop their own textbooks is to incorporate their own pedagogical approaches into the teaching material. Once the issue of time and money has been addressed there is the issue of actually developing, or adapting content.

Table 6 contains comments that were used to formulate the Open and Axial categories around the Development thematic category.

Table 6

Development Quotes with Open and Axial Statements

Interview Text	Open	Axial
I think the students really appreciate that we don't make them buy a textbook.	Students appreciated not having to purchase a book	Motivation for OER
Some of them get confused and ask what I would recommend and I'll tell them it depends on how they learn.	Depending on how student learns they use different content	Pedagogy
Here's an explanation, here's an example, and then they do "learn by doing" and then "did you get this?" So, these are the formative assessments in a module. Then after two or three modules then they have what they call checkpoints. If you need a lot more examples, a lot more historical background, a lot more practice exercises.	Engage students on what content they like	Pedagogy

In Michelle's case, this included customizing the content as well as exercises and practice exams. When asked what motivated her to do so she replied that "...there was a real need (after searching other sources) to develop our own content to match the pedagogy [we use in the class]" (Michelle). For all the obstacles instructors face when creating OER content, having the ability to customize the teaching content was the most powerful motivator to create "their own" textbook. And, making that textbook available for others to improve upon was also a driving force in support of OER.

Content development process. The content development process emerged as a separate theme and included activities like creating, editing, gathering, and curating content. In other words, in order to write a textbook, there is a lot of development required to prepare the content in order to fulfill required learning outcomes associated with a course. The following quotes shed some light on why some faculty chose to pursue developing OER materials:

> In that class, we wanted a standardized textbook for all the professors teaching it because it was entry level course we wanted to standardize. We can use an open source textbook since we don't need a lot of supplementary materials for that course. There were standard homework assignments, and there a standardized approach to teaching that supported how I like to teach and how my students like to learn. (Phil)

> Yeah, we chose to develop our own open textbook because the topic I teach is changing pretty quickly. No one knows our field like the instructors that teach it, so it was a no-brainer to invest the time needed to create our own textbook. (Matt)

From these quotes, it seems that at least two motivations for the shift to OER included the desire for standardization across courses and the need to keep content up-to-date.

Pedagogy. Other quotes revealed additional pedagogical advantages that emerge if you are willing to develop your own textbook in order to support preferred pedagogical practices:

> [Students] were looking at [the open textbook] as study material for later besides the immediate need in the class. And in my class, I think the students really appreciate that we don't make them buy a textbook. And, I think they discovered that the way I teach in the class matched the study material outside of class. (Julie)

> Brainstorming around the board, categorizing, organizing, sequencing. We came up with a list of about 12 topics. We asked [instructors] to sort of claim a topic that they would be

willing to draft. As a group, we were able to create a decent textbook that matched our teaching approach. (Don)

If I were [to] recommend anything to someone thinking about investing the time to create an OER textbook would be to make sure you know exactly the content and the sequence of your content and make sure your learning outcomes are sound. (Kate)

Pedagogically speaking, we were able to incorporate digital content such as video. We polled that students and asked what other tools do you use to teach? Videos was a resounding 'yes'. In addition to videos, students are required to post summaries to classes using Google Docs. (Phil)

These quotes reveal that many of the motivations for shifting to OER and its subsequent benefits revolved around pedagogical affordances, such as being able to incorporate other digital content such as video, and links to other content. The ability to rearrange chapters in the textbook as well as modify content were clear reasons to pursue OER.

OER Definition

"OER Definition" also emerged as a separate theme that highlighted confusions around the actual definition of what the "open" in OER means. Many instructors believe that any textbook that is digital or downloaded from the Internet is "OER" --even if a student has to pay for access. Where textbooks are free, digital, and capable of being downloaded, many publishers require students and instructors to pay to access other content like homework assignments, practice problems, and supplemental reading. Table 7 illustrates examples of comments that were used to categorize this theme and associated Open and Axial categories.

Table 7

Content Selection Quotes with Open and Axial Statement

Interview Text	Open	Axial
The deans are very familiar with the textbook publishing model, and the article publishing model, but not at all with OER. They are wondering how authors of OER are compensated for their work.	OER is a different model and one with which they weren't familiar with OER.	Understanding of OER
We like the idea of OER from the point of our students. However, you need to make sure that you didn't sacrifice quality. I know that there are a lot of courses out there and you just have to evaluate them and you have to be clear about what are your criteria, and then it will be easy for you to find, but it's a lot of research.	OER is great, but you can't sacrifice quality.	Rationale for using OER
The thing that's going to drive this I think is so much of the world is eroding is because most of the world can't afford it. I fundamentally believe that you shouldn't charge for knowledge. It isn't yours.	Everyone should have free access to knowledge	Attitudes toward free content

Lastly, no one I interviewed understood the concept of sharing, or distributing original content with other instructors, or colleagues from other universities. In fact, the general sentiment was dismay that someone else would take what they developed for a specific course and want to use it in a similar, but different setting. This means that a textbook that they created for a specific class was seen to be so unique that it was unlikely that someone else teaching the same subject would find what they had developed to be useful. In one situation the faculty member reached out to a colleague at a nearby university and shared what she had developed. To her surprise the colleague asked for a copy and permission to use it and even adapt it for their

classes. This request presented a new problem already mentioned: how to package and share what had been developed posed a whole new use case and would require additional time to figure it out.

Understanding of OER. While most were familiar with the term "OER" many instructors misunderstood what it meant. Don, for example, made the comment that, "...some students don't care for digital content and would be very much against OER." When pressed on this statement, it was evident that, in his mind, OER was always digital. Angela told me that she was using an OER textbook that was "...free to students and the only costs to the students were for gaining access to the homework exercises and practice quizzes." I asked if the exercises and practice quizzes were required and she said that they were.

> To some degree, it's a bit of a moral hazard. When we provide OER textbooks to students you worry that they will share it with a roommate who is taking the same class.
>
> (Michelle)

It surprised me to hear statements like this. If the textbook was free and anyone could download it, then why should it matter if roommates, or friends could also use it? There were also many comments expressing concern that if "...we create an OER textbook, other universities might get a copy of it and use it free of charge in their own classes" (Julie). Julie went on to explain that many internal discussions about OER actually evolved to monetization discussions:

> [Deans and Department Chairs] are very familiar with the textbook publishing model and with the article publishing model, but not at all with OER. They spent a good deal of time discussing ways that we could monetize it. They considered building a website that students could use free of charge, but required them (students) to log in and sign out for copies of our textbooks. ... One of the department chairs proposed--and I think we may

actually do this--selling ancillary materials. Teacher packet, testing, learning activities, things like that. So, they were all about monetizing it, and that's their job. (Julie)

My take-away from comments like this was that there is still a need to educate what OER is and what it is not and what aspects of "open" align with instructor and institutional values and which do not. From my research, there was little understanding that OER-based textbooks can be licensed in a manner that provides users with free and perpetual permission to engage in the 5R activities:

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

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

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

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

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

What was most appealing to instructors about these 5 activities was the ability to license the material in different degrees of "open". When we reviewed these activities, it seemed to provide new motivations for pursuing OER.

Rationale for using OER. So, why did some instructors push through all the obstacles and create OER content? The following quotes shed some light on reasons, or rationale, for doing so:

The big part of the rationale for creating our textbook and offering it free of charge was this is a GE class. There are hundreds of students that would benefit from using this textbook. More bang for the buck as it were. (Angela)

It was important as faculty to figuring out what OER really was because otherwise if you might find a book and it looks good, but it doesn't quite match what we want to teach or what approach. Realizing that OER materials equaled the quality of purchased textbooks helped us a lot when we made the decision to go with the CMU-OER version. It was also important to know that the students could keep the books forever and build their personal libraries. (Don)

We like the idea of OER from the point of our students--you know, saving money, etc. However, you need to make sure that you didn't sacrifice quality. I know that there are a lot of courses out there and you just have to evaluate them and you have to be clear about what are your criteria, and then it will be easy for you to find, but it's a lot of research. All worth the effort, though. (Matt)

From these quotes it seems that the primary rationale for going through the process was concern for student costs but that this concern was tempered by quality considerations. In other words, most instructors are motivated to use OER so that it can save students money, but not at the expense of quality. Several instructors were also interested in the notion of using OER and allowing other colleagues to update the content and incorporate new ideas.

Attitudes toward free content. Some of the aforementioned complexities aside, there was a prevailing attitude that knowledge, and access to knowledge, should be free. The following quotes exemplify this idea:

I just fundamentally believe that knowledge has got to be free. (Phil)

There is an investment in taking the time to sit down and write about something, to synthesize it, and curate the knowledge, and that investment should be financially rewarded. But it's very distorted the value that's given to that for the economy. While I don't mind paying for the services, I don't think it's right to make someone pay for the access to knowledge that should be readily free. (Kate)

Big Publishers are now going out and curating OER materials and saying "hey, this is our free OER book." Last year it was $200, but now it's $50. Great. Click. $49 to download it?". But I can just google it and download it from our site which gives you credits towards all of the practice exams and assignments that are associated with this book which is now $150. They took the $200 book and all the exercises and left the content and made it free, and then charge you the back end. That just isn't right. (Julie)

Computer Science created the concept of "open source," so it makes sense that most textbooks in this field are OER. (Don)

From a moral perspective, OER seems to make sense to everyone I spoke with in that it is just a way to package and distribute knowledge freely. Knowledge should be free. No one has a monopoly on knowledge. The logic begins to break down, however, if there are costs associated with the printing and distribution of a textbook. It seems to make perfect sense to instructors to pay for physical materials--paper, shipping, etc. So, does it make sense to charge someone for the time and effort required to write a textbook? That is where most of the conversations broke down to a morality vs. realism argument. Morally, instructors believed that we should not charge students for access to knowledge, but realistically, they considered developing a textbook to be a service that takes a lot of time and that those who create textbooks should be compensated for their efforts. From my experience through the course of these interviews, this line of reasoning

seemed to consistently come full circle to the point that no real decision or stance on OER could be justified, and this stage in the interview was generally awkward with the interviewee saying something like, "...well, it's probably easier to just keep doing what we have been doing."

CHAPTER 5

Discussion

While I began this project with certain ideas, biases, and assumptions I was not trying to prove, or disprove any hypotheses. Rather, I really wanted to ask each participant about OER and just capture their comments and allow those comments to speak for themselves. I chose to use a phenomenological research approach to better understand the lived experiences that instructors have when pursuing OER so that I could capture terms, processes, and emotions. I witnessed instructors that were pleased with the process and others that were frustrated. Why was there a disparity of emotions? What types of things motivated some to persevere and others to abandon the cause? I wanted to see what they saw when they searched for OER content and better understand what was working well and where challenges were introduced. I feel that the people I interviewed represented a broad spectrum of faculty with regard to their understanding of OER. I was able to see what some had done to push all the way through the OER development process and to learn what they went through to create an OER textbook. I was able to see and hear from those that have tried to do the same, but for whatever reason were unable to produce OER material.

Of all the comments I reviewed there was one (from Phil) that stood out to me more than others: "...you don't just do OER to do OER." In other words, OER is more the means to the end than the other way around. From those I interviewed, it was clear that there is no real incentive to create an OER textbook other than to create something that met their needs and the needs of the students. This may hint at my original question of why it is that 90% of faculty would like to "do OER" or "use OER" in the classes they taught, but in reality, only about 5% actually do. To

unpack this a bit, I will run this question through the 5 themes discussed above and summarize my findings.

Content Selection

Each interview began with general questions about how content, not necessarily textbooks, were selected for use their classes. While each participant knew I was interested in their experiences with OER they seemed to appreciate starting at the "30,000 ft" level. There were three primary axial themes that emerged when discussion content selection: policies, process, and relevance.

I discovered, at least amongst those I interviewed, that there really are not "policies" in place by the university, colleges, or departments for content selection. I believe there is a common understanding that content should comply with the teachings and beliefs of the sponsoring institution and stakeholders, but for the most part instructors have a great deal of freedom to search and select their own content. Each has his/her own process that they follow, but generally, each instructor I spoke with tries to keep current with best practices in their particular field. Each talked about serving on committees and seeking input from peers both within their department and colleagues from other institutions.

"Good content" was evaluated based on accuracy and relevance. In the case of those who created their own textbook, these were the primary motivating factors that motivated them to create their own materials. There simply was not, in their minds, good enough content available that was relevant to the subject or that was accurate to accepted facts and practices. "You don't do OER, just to do OER", is true: those who created their own content did so because, in their opinion, "good content" did not currently exist and needed to be created.

Technology

I have a strong background in technology and know how to use available tools to create digital content. But, having a strong background in technology (e.g., software development) is not required in order to create and publish digital content today. There are many, many tools today that allow lay users to create and share digital content in many different forms: text, music, video, etc. In fact, it has probably never been easier to create and publish content. It was with these assumptions, that we have adequate technology to create and share, in mind that I began my research. I was greatly surprised, however, that the technology to search for, create, and share digital content is greatly lacking with regard to OER. Search tools like Google, Google Scholar, and Bing lack the ability to return relevant search data with regard to OER in a manner that would be useful for instructors.

Even participants who knew of OER online repositories and web sites that contain OER material had a difficult time searching for content. In reviewing the comments, I gathered in this study, my research suggests that there is currently a huge gap in the technology that provides access to OER content. That is not meant to suggest that good OER content does not exist, but the barrier to entry for instructors with beginner-to-novice OER experience to search for and find OER content is very large. Often this gap becomes a primary detriment and barrier to using OER. This might be able to be remedied with training or the improvement of current tools to better empower OER searching.

When participants in my study were able to locate and download OER content they were faced with another obstacle: how to edit and repackage the content for consumption. Textbooks, even OER materials, are often in digital formats like PDF that are difficult to edit. OER textbooks are often large files that contain rich media such as high-resolution pictures and

graphics. While some tools exist to open, modify, and save an existing OER resource, this process in and of itself requires a level of technical ability that few instructors currently possess. This is not to suggest that the participants I spoke with did not have the ability learn how to use these tools but that those I spoke with did not know how to adapt OER or that this was even a possibility. While the statement about "...doing OER just to do OER…" speaks about possible motivations for pursuing OER, it seems that the technical skills and tools that are needed require additional effort and training to use effectively. Motivations aside, to "...do OER…" you need to have some fairly complex editing and publishing skills.

Resources

Another common theme in the comments I received had to do with time and money, or resources. Whether starting "from scratch," or identifying OER material to use that meets a particular need, if instructors wish to modify the content by rearranging, deleting, or creating new content it takes resources to do so. Assuming that one even has the technical resources and tools it is clear that to write new content takes considerable effort from researching different topics to organizing and formatting the content in the form of a textbook.

Comments from participants I spoke with estimated that creating a new textbook required several (more than 2) people working full-time for a year. Modifying an existing textbook required anywhere from 3-9 months' time from beginning to end. I do not believe this is necessarily the case with everyone who produces OER, but this perception of the time-intensive nature of textbook development explains why they "don't do OER, just to do OER." If shifting to OER, in their view, is so time-intensive and laborious, then it is generally not worth the shift.

Development

When pressed on why it took so long to create and/or modify OER it became apparent that there was a development process that needed to be used to both establish the "current art," or textbooks that already exist, and also to discover new information. As mentioned earlier, it seemed to me that accuracy and relevance were two of the primary motivating factors that drove the development process, but another element was for instructors to incorporate their preferred pedagogical approaches so that the textbook aligned with learning objectives and outcomes of a specific course. This included homework assignments, practice exams, assessments, and exercises. Concern for and compliance with copyright and trademark were also part of the development process, and everyone I spoke with was supportive and aware of the copyright process and need for proper attribution. Because of the need for attribution and consideration to copyright, "...doing OER…" requires compliance with legal matters such as copyright.

OER Definition

I was interested to learn through this process that there are still opportunities to educate instructors on what OER is and what it is not. For example, not all OER is digital--you can print out an OER textbook and mark it up like any other textbook. OER oftentimes implies "free," and each participant was mindful of the cost of textbooks and each had a desire to lessen the financial burden placed on students. On the other hand, good content--both accurate and relevant--requires many hours of work (as mentioned above) and people need to be compensated for that work. Also, it requires money to produce--either digitally, or physically--a good textbook. It was with these facts in mind that led me to ask two participants why they were charging students, or asking students for financial donations to support their OER textbook efforts. One response was that "it takes money (time and people) to keep them up to date" (Michelle).

While there seemed to be good understanding and support for OER, in general, there are also opportunities for additional training. A few participants suggested to me that "knowledge is free" (Phil) and we should not charge anyone for sharing it, even invoking religious mandates that if knowledge comes from God, then who are we to charge for it? Others I spoke with felt that to gather, research and curate knowledge is a process that relatively few know how to do and as such, experts who engage in this laborious process should be compensated for their work.

One of the fundamental facts about open-source content--whether software, or textbooks is that when you share it you allow others to improve upon it and make it better. Wikipedia is a great example of an open platform that allows anyone to contribute new ideas, or thoughts and others to review and improve them.

I shared previously mentioned, five "R's of OER", with two of the participants as well as the different types of OER licenses. These two individuals were not familiar with either the activities or the different types of licenses that were available with creating and releasing OER content. In one instance, the concept of attribution and assigning a license to OER material seemed to allay her concern of "sharing something that took a lot of time and money to create" (Michelle). From the information I gathered it was apparent that more training on OER activities and licensing may decrease the concerns that some shared relative to "open sourcing textbooks" (Phil). There were strong feelings about spending a lot of time and resources to create OER for students, but that others may be able to get the content without contributing financially to the cause. The sentiment that, "we don't do OER, just to do OER", was somewhat tempered when they realized that you can assign different licensing rules to what you created and that it was possible to benefit from derivative versions of others.

Analytic Lenses

Employing a Diffusion of Innovations perspective (Rogers, 2003), I wanted to compare my findings to Roger's "perceived attributes of innovations" and find out how my results might be interpreted in light of this theory. To review, Roger's attributes include: relative advantage, compatibility, complexity, trialability and observability. Rogers suggests that for a new technology to be accepted that all five attributes must contribute and be realized by users of a new system. When one, or more, fail to achieve recognition the invention is rarely widely adapted.

By looking at these five attributes and comparing them to the data I gathered I believe that only one, 'relative advantage,' was observed. Almost everyone I interviewed knew of and could speak to some relative advantages of OER, such as driving down costs or aligning content with pedagogy, but even in this case not all of the 5R's relative advantages could be enumerated (e.g., being able to acquire additional improvements from others who improved the original work). Furthermore, technology barriers contributed greatly to decreasing compatibility and complexity of using OER, and barriers in development and resources prevented several from realizing trialability and observability. OER fail trialability because of the inability for instructors to experiment with, or test tools required to create, or modify content. Observability is also challenged in that there is no easy way watch OER experts go through the development process. Thus, more work needs to be done to bring awareness of the 5R's of OER and to improve tools and processes in order to lower complexity and improve compatibility.

In addition to Roger's framework, I also wanted to compare my data to the barriers identified by OPAL report. The OPAL (2011) study differs from Roger's framework in that it was created specifically for analyzing users of OER. OPAL research reveals that individuals are

faced with five main barriers when they want to use OER: lack of institutional support; lack of technological tools for sharing and adapting resources; lack of users' skills and time; lack of quality or fitness of the resources; and personal issues such as lack of trust and time. By using both Roger's attributes and OPAL's barriers and comparing it to the data I collected, I really hope to identify what OER enthusiasts and supporters can do in order to make OER more successful. While the data I collected suggests that few of Roger's attributes exist, the data supports OPAL's framework even more.

From my data it is clear that OER has the moral support of faculty. Faculty want to ease the financial burden placed on students by offering quality OER alternatives. But, the process for finding and adapting OER content is simply too complicated. OPAL's 5 barriers are abundantly prevalent in my findings: OER lack adequate technologies to share and adapt content; the time required to find and adapt OER is simply too much; and while most departments promote institutional support for OER, the university needs to provide more resources and training to faculty who would like to pursue OER initiatives. Absence of university-wide OER teams or a staff of volunteers is a major barrier to OER.

Roger's attributes associated with Diffusion of Innovations can also be used to support the fact that OER, as a technology, has not been adapted in university settings. Keep in mind that data from the original survey I conducted suggested that over 90% of faculty support OER, but less than 5% actually use it. Why? Rogers would suggest that there are few relative advantages to using OER. Again, as stated by one participant, "...you don't just do OER to do OER…" (Phil). There are simply no incentives at the current time for instructors to use OER. It is hard to find, hard to create, hard to modify and there are barriers to sharing it "for free." Thus, the bottom line is that OER content and the process to create it is too complex, too expensive, and

too time consuming for lay instructors. Furthermore, most OER content is incompatible with existing word processing tools like Google Docs and Microsoft Word, most faculty cannot observe other faculty who have been successful using OER, faculty are unaware of forums or opportunities to share ideas about OER.

OPAL's barriers and Roger's attributes are effective lenses to look at the qualitative data that I was able to collect. Using a phenomenological approach to gather that data allowed me to observe, first-hand, the challenges that faculty face when pursuing OER adoption. I believe that staunch supporters of OER should consider reducing future studies of OER quality and if students achieved the same grades using OER as those that used purchased textbooks, because these types of studies may not do much for improving the relative advantage of OER and addressing other barriers to adoption. Rather, we need to seek practical ways to reduce the barriers that currently exist if we truly would like to see the adaptation rates of OER to increase. Participants of my study confirmed that more studies about the quality of OER are not necessary--everyone in my study at least already accepted the fact that OER can be as good as commercial alternatives. Rather, participants in my study suggested that additional studies should focus on improving the awareness of OER and the tools required to search for and adapt them. Almost everyone I spoke with believes in the OER cause--now, it is time to make these resources easier for instructors to use.

Limitations

Although this research was thoughtfully prepared, there were several unavoidable limitations. First, I believe there is a limitation related to the timing of when the interviews were conducted. The instructor's opinions, or answers to the questions I posed may vary depending on the specific day (e.g., were they having a good day? Or, a bad day?), or even time of semester in

which they were interviewed. My research was conducted over the course of a given semester--some at the beginning and some at the end. There are different levels of stress associated with both. I did, however, conduct all my interviews in the morning hours so that the instructors were relatively fresh, rested and not distracted by the events of a given day. I do believe that I may get different responses if the instructors were "off track", or not involved in the burden of teaching one, or more, courses in a semester. All of the instructors I interviewed were, indeed, teaching at least one class.

Second, I did not actually observe the process of an instructor selecting textbooks, or going through the process to create or modify OER material. In addition to this possible limitation there is the obvious one that they knew I was interested in OER. While I asked them to demonstrate how they search for OER and to share the process they follow to select textbooks--it was probably not as authentic as if they were actually in the process of doing so. Practitioners of the phenomenological approach suggest observing the actual experiences as they occur in their natural environment. This was not possible at the time of this study as none of the participants were going through this process. Though the perspectives, biases and subjectivity of eight individuals cannot represent the entire faculty population, the trustworthiness measures put in place by the phenomenological approach helped to provide sufficient detail to allow the reader to determine how these results might transfer to other contexts and groups.

Lastly, my own background in technology may have influenced the type of questions I asked during the course of the interviews. In other words, my personal interest and familiarity in technology may have steered the discussions toward technical affordances and limitations, rather than focus on processes or policies that guide the textbook selection process.

Future Research

There are many different avenues for future research in this area. It would be interesting, for example, to interview instructors who have created many OER publications to better understand the expert's process of creating a second OER publication and comparing it to the effort required of doing it for the first time. I think it would be interesting to ask why there are not more OER tools available--and, not just tools for searching and editing, but repositories like iTunes or AppStore for OER.

Furthermore, this study focused primarily on textbooks. However, it was evident from several participants that textbooks, like newspapers, may be a dying medium for distributing content. There were many comments that video may replace written text in the future. If true, would video make the creation of OER material easier or harder? Are there better tools for capturing, editing, and sharing videos compared to text? And how might this shift in media influence the openness of content?

Lastly, I would personally be interested in sharing these findings with strong supporters of OER and ask them why more effort and resources are not spent in improving tools and processes to make acquiring OER better, faster, and cheaper. If this is a noble cause, then it seems that the major next step toward adoption would be leading initiatives to make OER use and revision easier (i.e., improving usability) rather than reconfirming their possibility as a non-commercial alternative.

CHAPTER 6

Conclusion

The purpose of this study was to gather information to better understand why so many (90%) instructors claim a willingness to use OER but in reality, very few (5%) do. While so many believe that OER are a viable alternative to published content and that the use of OER would decrease the financial burden placed on students, why do so few instructors use OER in their classes? To answer this question, I relied on personal phenomenological interviews so that I could see and hear what these instructors experience when they search for OER. Through these interviews I documented the words they used, and I learned, first-hand, what works and what does not when instructors choose to pursue OER.

The primary findings included the following: (a) most of the interviewed faculty were open to and willing to use OER; (b) most wanted to help students offset the financial burden of education; (c) most faculty did not have any other incentive or reason to use OER; (d) most faculty had no idea where or how to find OER content; (e) most faculty did not have adequate time or resources to search for and customize OER content; (f) most did not have the technical skills necessary to modify, or adapt OER content; (g) nearly all faculty were free to select content, teaching materials, and specifically, textbooks for their class; (h) some departments have committees that review textbooks (especially in the cases of large, undergraduate general education or required classes); (i) these committees are open to using OER; but (j) most faculty do not really understand what OER are in terms of open licensing as defined by groups such Creative Commons. Most are indeed familiar with common terms such as "free content," "open content," and "open educational resources," but few are familiar with the benefits of sharing content and the ability to license content. Interestingly, there was a general sentiment from the

participants of this study that knowledge should be free and available to everyone, which is a markedly pro-OER sentiment.

One implication of these results would be the realization that OER, as a valuable low-cost alternative has arrived, but that a more expansive view of openness has not (cf. Kimmons, 2016). One implication of this is that future research and initiatives in this area should shift away from studies that emphasize OER accuracy and quality toward work that emphasizes usability. Another implication is that great effort is needed to improve technical tools and processes that would make OER easier to find and use. There are tremendous opportunities for technology firms to create tools that let those who want to participate in OER do so. It is plausible that someone could create editing and publishing tools specifically designed for the OER community. I believe that if these tools were well designed that instructors, departments, and colleges would pay for their use. I believe there is an opportunity to create base tools and make them and their source code open source and charge for additional features (online access, publishing automation, etc.) Finally, it should be stated that there are some of faculty that use OER in the classes they teach. Their experiences in creating or adapting OER should be told, and there should be more opportunities for training and sharing best practices in the field of generating OER content.

Even if there were new, powerful tools available to create and publish OER content there is still a significant need to augment university resources to provide a central place where OER content can be curated and made available. BC Campus is a great example of what an institution can do with good support from investors like the Hewlett Foundation and local government entities. If we believe that shifting to OER is a noble cause that will help students and faculty improve learning and teaching, then we need to better understand and address the challenges that

too many instructors face when beginning this transition and seek to address fundamental problems of usability, conceptual misunderstandings, and adoption so that OER can be more successful than they currently are.

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APPENDIX A

UALC Faculty Survey

A copy of the original faculty survey is included here:

Q1 - What is your academic appointment/rank?

Q2 - What is your age?

Q3 – What courses do you typically teach? (e.g. introductory physics)

Q4 - Do you require students to purchase a textbook or other commercially published resources for use in your classes?

Q5 - In the course(s) where you do not require students to purchase textbooks or other commercially published materials, what do you use in place of these resources?

Q6 - How much do the substitute materials cost?

Q7 - How did you find the substitute materials?

Q8 - How do you choose textbooks for lower-division courses? (catalogue numbers 100-200 or 1000-2000)

Q9 - Do you know the list price of the textbook or other commercially published resources you require your students to purchase?

Q10 - Approximately how much do they cost?

Q11 - How do you choose textbooks for upper-division undergraduate courses? (catalogue numbers 300-400 or 3000-4000 -- not graduate courses)

Q12 - Removed

Q13 - The following questions ask you about "open textbooks." By "open textbooks" we mean digital textbooks that are (1) free of charge and (2) provide faculty with permission to make a wide range of changes, customizations, and improvements. Are you aware of any open textbooks that could be used to replace traditional textbooks or other commercially published resources in your course?

Q14 - If a suitable open textbook could be identified for the course you teach, would you be willing to use it?

Q15 - Why would you be willing to use an open textbook?

Q16 - Why would you not be willing to use an open textbook?

Q17 - Would you like assistance in identifying a suitable open textbook?

Q18 - Please provide your name and email address so that a campus librarian can assist you in identifying a suitable open textbook for your course(s).

APPENDIX B

Consent to be a Research Subject

Introduction

This research study is being conducted by Michael Troy Martin at Brigham Young University, under the direction of Dr. Royce Kimmons (BYU Instructional Psychology and Technology) to determine the personal, lived of experiences that BYU faculty have had with Open Educational Resources (OER). Dr. Kimmons has done extensive research in online learning, digital learning environments, social media impact on learning and OER.

You were invited to participate because you expressed interest in sharing your experiences from a previous study, or because you have reached out and volunteered your expertise and/or experience with OER. The intent of this research is to inform publishers and consumers of OER on what is working well and areas that could be improved. Your involvement will directly impact and improve this important aspect of the teaching and learning process.

Procedures

The data collected in this study will be done through interviews. The following information about these interviews may be helpful as you decide whether to participate:

- Interviews will be done individually, not as a group, in a conference room close to your work environment.
- Interviews are thorough and may last up to 2-3 hours.
- Interviews will be recorded digitally for reference use and will be destroyed after the study is completed.
- All information collected will be confidential.
- Interviews will be recorded digitally but not shared.

To capture an accurate experience, you are encouraged to be open and descriptive throughout the entire interview. In order to enhance our research, we would like permission to use your direct quotes in our publications, or presentations related to OER content and tools.

Risks/Discomforts

You are encouraged to speak openly and honestly about your experiences with OER. I will make sure that all information gathered is confidential. Due to the nature of this study data can be kept confidential, but not necessarily anonymous. Your permission will be sought before using direct quotes and statements. If you are uncomfortable before, during, or after the interview in any way I will delete all information and you may withdraw from the study.

Benefits

  There are no obvious benefits to you, personally for your involvement in this study. My goal is that the information I collect and publish will help others in their pursuit to acquire, adapt and use OER in their classrooms. I believe that OER can save students money and allow them to keep the materials with them after they leave BYU.

Confidentiality

  As mentioned earlier, the interview will be recorded on a digital recorder—not a computer, cell phone, or tablet or other any other internet-enabled device. This recorder has no direct connection capability with the internet. Each recording will be used by me to go back and review my notes. After the study, I will delete all recordings with 6 months of completing the study. I keep this recorder with me always and will ensure that it is locked up when not in use.

Compensation

  I am offering a modest $25 gift certificate to Amazon.com for your complete participation. This will not compensate you for your time, but is a simple way I have found to say, "Thank you". Additionally, with your permission and after the study I can direct you to folks who can help you adapt OER in your classes. These may be both OER practitioners, OER experts from HBLL, and/or other faculty who have found success with OER and are willing to share lessons learned.

Participation

  Participation in this research study is voluntary. You have the right to withdraw at any time or refuse to participate entirely without jeopardy to your class status, grade, or standing with the university.

Questions about the Research

  If you have questions regarding this study, you may contact Troy Martin (troy@byu.edu or 801.422.5650) or Dr. Royce Kimmons (Royce_kimmons@byu.edu or 801.422.7072) for further information.

Questions about Your Rights as Research Participants

  If you have questions regarding your rights as a research participant contact IRB Administrator at (801) 422-1461; A-285 ASB, Brigham Young University, Provo, UT 84602; irb@byu.edu.

Statement of Consent

  I have read, understood, and received a copy of the above consent and desire of my own free will to participate in this study.

Name (Printed): _____   _Signature_____   _____Date:

APPENDIX C

Phenomenological Research Questions

I have chosen to incorporate phenomenological research into my master's research project. In order to better understand this research method, I established the following learning objectives and curriculum as part of a self-directed study with my committee chair, Royce Kimmons. I have used the following publications in order to learn how to successfully conduct phenomenological research.

Curriculum

- "Research Design: Qualitative, Quantitative, and Mixed Methods Approaches", 4th edition, John W. Creswell
- "Phenomenology: An Introduction", Stephan Käufer and Anthony Chemero
- "Phenomenology of Practice", Max van Manen
- Yale Open Online Philosophy 181

Additionally, I have found the following table (Bevan, 2014) helpful in constructing good interview questions.

Phenomenological Attitude	Researcher Approach	Interview Structure	Method	Example Question
Phenomenological Reduction (Epoché)	Acceptance of Natural Attitude of Participants	Contextualization (Eliciting the Lifeworld in Natural Attitude)	Descriptive/Narrative Context Questions	"Tell me about becoming ill," or "Tell me how you came to be at the satellite unit."
	Reflexive Critical Dialogue With Self	Apprehending the Phenomenon (Modes of Appearing in Natural Attitude)	Descriptive and Structural Questions of Modes of Appearing	"Tell me about your typical day at the satellite unit,"or "Tell me what you do to get ready for dialysis."
	Active Listening	Clarifying the Phenomenon (Meaning Through Imaginative Variation)	Imaginative Variation: Varying of Structure Questions	"Describe how the unit experience would change if a doctor was present at all times."

Figure 1. A structure of phenomenological interviewing.

Based on this method from Bevan (2014), the following are examples of questions that I will use to initiate the conversation:

- Tell me about what courses you teach and how long you've been teaching
- Tell me about the students you teach and your approach in the classroom
- Tell me about your use of digital tools that you use in your classroom
- Tell me about how you create the learning outcomes for your course
- Tell me about the instructional design methods and pedagogy you use to meet your

learning outcomes
- Tell me about how the process of selecting textbooks and other materials for your class
- Tell me about how your peers select textbooks and learning materials.
- Tell me about how often you review the teaching materials you use
- Tell me about what information you use to select teaching materials
- Tell me about your understanding of Open Educational Resources
- Tell me about your experience in looking for OER
- Tell me about your decision to use, or not use OER. What factors played a role in that decision?

My overall goal is to get the participant talking. Each participant will have a different experience and the questions I use will guide them to talk and share their feelings, experiences, ideas, and opinions related to OER use in the classroom.

Bevan, M. T. (2014). A method of phenomenological interviewing. *Qualitative Health Research*, *24*(1), 136-144.

APPENDIX D

Invitation Letter to Participants

Dear [participant name],

Dr. Royce Kimmons and Troy Martin at Brigham Young University, Instructional Psychology and Technology (IP&T), are conducting research about faculty experiences and interactions with Open Educational Resources (OER) textbooks. You may have participated in a survey in 2016 that dealt with perceptions and feelings about OER content in general and you may have voluntarily shared your contact information requesting additional information. This study seeks to build on that work and better understand how BYU faculty seek OER for use in their classrooms and to learn what may be working well and if any aspects of that process might be improved.

To gather that information we are conducting personal, one-on-one interviews that may last up to 3 hours. We would like to better understand the process of selecting textbooks and how, or if, OER textbooks are being used. These interviews will be recorded in order to refer back to information collected and to capture valuable quotes that may be used in future publications and presentations. All the information will be kept confidential and will not be shared without your consent.

To compensate you for your time we would like to present you with a $25 gift certificate to Amazon.com upon completion of the interview and follow-up process. All interviews will be done in a setting close to your office and you may elect to drop out of the study at any time. All findings will be sent to you for your review before sharing with the research community.

Research shows that the use of OER can reduce the cost burdens placed on students. This same research shows that there is no significant difference between the quality of OER textbooks as compared to those from publishers. The 2016 OER study revealed that over 90% of BYU faculty would be willing to use OER in their classes, but less than 6% actually do. This research seeks to better understand this discrepancy and to inform both providers and consumers of OER what could be done to narrow the gap.

If you would like to participate in this study, please reply in the affirmative. We would greatly appreciate your input into this study.

Sincerely,

M. Troy Martin
Dr. Royce Kimmons