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Community College Faculty Perceptions Of Open Educational Resources

Heather Ann Leavitt

COMMUNITY COLLEGE FACULTY PERCEPTIONS OF OPEN EDUCATIONAL RESOURCES

by

Heather Ann Leavitt
Bachelor of Science, University of California Los Angeles, 2014
Master of Arts, Missouri State University, 2019

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Name: Heather Ann Leavitt

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This document, submitted in partial fulfillment of the requirements for the degree from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

DocuSigned by:
Sonja Brandt
Sonja Brandt

DocuSigned by:
Bonni Gourneau
Bonni Gourneau

DocuSigned by:
Virginia Clinton-Lisell
Virginia Clinton-Lisell

DocuSigned by:
Michele Iiams
Michele Iiams

This document is being submitted by the appointed advisory committee as having met all the requirements of the School of Graduate Studies at the University of North Dakota and is hereby approved.

DocuSigned by:
Chris Nelson
Chris Nelson
Dean of the School of Graduate Studies

7/19/2023
Date

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Department Teaching, Leadership, and Professional Practice

Degree Doctor of Philosophy

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Heather Leavitt
July 18, 2023

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ABSTRACT

This study examined Open Educational Resources (OER) through a community college faculty perspective. Specifically, this study aimed to gain a deeper understanding of faculty motivations surrounding OER, faculty perceptions of OER's influences on students, and pedagogical changes that faculty have made in response to OER. A qualitative research methodology was chosen, including semi-structured phenomenological interviews conducted with community college faculty members. The methodology was guided by activity theory.

Faculty discussed their use of the 5 Rs (retain, reuse, revise, remix, redistribute) in practice, with *revise* being the most commonly used of the 5 Rs. Notably, the eight participants had mixed views of *redistribute*. Several of the participants indicated wanting to redistribute to help others, due to the fact that they themselves had benefited from others' help in the past. However, others were more reluctant to redistribute, for a myriad of reasons. Next, faculty's perceived pedagogical changes, or lack thereof, in response to adopting OER were discussed. Interviewed faculty were divided equally on this question, with half of the faculty citing no change and half citing positive pedagogical changes since adopting OER. Finally, faculty's perceptions of the influence of OER on student learning and engagement were discussed. From this, three main themes emerged: cost savings, availability, and quality of materials and ease of use.

CHAPTER I

INTRODUCTION

Open Educational Resources (OER) have grown to prominence in the realm of higher education over the past few decades. OER are different from commercial educational resources, such as textbooks distributed by large publishing companies, in that OER are made freely available to anyone through the use of open licensing through the Creative Commons (Creative Commons, n.d.).

Defining OER

There are many definitions of OER throughout the web. Some key factors include resources being available at no cost, free of traditional copyright, and able to be revised and redistributed. UNESCO, the United Nations Educational, Scientific and Cultural Organization, coined the term OER in 2002 (Bliss & Smith, 2017). UNESCO (n.d.) defines OER and open license as follows:

> Open Educational Resources (OER) are learning, teaching and research materials in any format and medium that reside in the public domain or are under copyright that have been released under an open license, that permit no-cost access, re-use, re-purpose, adaptation and redistribution by others.
>
> Open license refers to a license that respects the intellectual property rights of the copyright owner and provides permissions granting the public the rights to access, re-use, re-purpose, adapt and redistribute educational materials. (para. 1-2)

OER are particularly known for giving users the ability to use and modify resources according to the 5 Rs. These 5 Rs refer to the user's abilities to retain, reuse, revise, remix, and redistribute open resources (Hilton et al., 2022). In other words, not only can OER be downloaded free of charge, but these resources can also be adapted and shared.

Purpose and Significance

The purpose of this study was to examine faculty's attitudes toward OER. Specifically, this study aimed to gain a deeper understanding of faculty motivations surrounding OER, faculty perceptions of OER's influences on students, and pedagogical changes that faculty have made in response to OER. The institution that served as the site for this study was a rural community college located in the American Southwest.

Need for the Study

A study by Hilton et al. (2019) surveyed students about their perceptions of OER, and the authors recommended that a similar study be conducted with faculty members. Several recent studies have examined faculty attitudes regarding OER, but the majority of these appear to be quantitative surveys with just a few open-ended questions (see Anderson et al., 2017; Bond et al., 2021; Jung et al., 2017; Lantrip & Ray, 2021; Pitt et al., 2013). One of the limited examples this researcher was able to find of qualitative faculty interviews on the subject was Werth & Williams (2021), which explored faculty's growth between teaching their first and second courses using OER. Due to the nuanced views that faculty may have regarding OER, the researcher believed that qualitative interviews might allow for a fuller picture of faculty perceptions than surveys, even those with open-ended questions.

Additionally, little research about faculty use of the 5 Rs is currently available. For some examples of the limited research available on faculty use of the 5 Rs, see Beaven (2018) and Schroeder and Donat (2023). Beaven (2018) found that many faculty applications of the 5 Rs, "other than those directly related to the teachers' engagement with the OER repository itself, are hidden, and take place in private spaces" (p. 388). Further, Beaven (2018) called for additional qualitative research, as in the present study, saying, "Qualitative evaluation tools such as the ones used in this study, and which are sensitive to the situated nature of OER engagement, need to be harnessed in order to understand the invisible practices around 'dark reuse'" (p. 388). Schroeder and Donat (2023) identified four OER user types based on user activity. This study expands the growing body of literature about the 5 Rs.

Research Questions

The study endeavored to answer the following research questions:

1. How are faculty applying the 5 Rs (retain, reuse, revise, remix and redistribute) of OER in their practice?
2. What pedagogical changes have faculty made as a result of adopting OER?
3. How do faculty perceive that OER have influenced student learning and engagement?

Theoretical Framework

This research is grounded in activity theory. According to Panke and Seufert (2013), "The basic assumption of activity theory is the interconnectedness of complex mental and cognitive processes and external artifacts, based on cultural practices and division of labor" (p. 121). Scanlon and Issroff (2005) explain that "human behaviour is

situated within a social context which influences actions" and further, "actions are mediated by the rules of the community and the division of labour within the community influences the ways in which we behave" (p. 432).

Activity theory has previously been applied to the use of technology in higher education. Since OER tend to be inseparable from technology, this is a reasonable jump. In the following quote, Panke and Seufert (2013) explain how activity theory can be applied to the study of OER:

> Users browse and access Open Educational Resources based on their personal experiences, habits and preferences. The learning takes place voluntarily, spontaneously and without commitment. Each user constructs his or her own view, and, over time, individual paths of adoption and selective perception shape the personal learning environment. Thereby, users co-design OER; the educational artifact is meandering between 'design for use' and 'design in use'. Although not all artifacts are perfectly designed for their target audience, they serve the individual motive and situational need. Learners will find creative solutions to adapt and instrumentalize OER. (p. 121)

In other words, researchers who study OER from an activity theory lens are interested in how users apply the 5 Rs to change and create resources for their unique learning purposes. And since users, including students and faculty, have differing needs and goals, these changes and creations will likely vary widely. Users have the potential to create things that were very different from what the original content creator had imagined the resource to be. These connections between OER materials and OER users through the lens of activity theory are visualized in Figure 1 below.

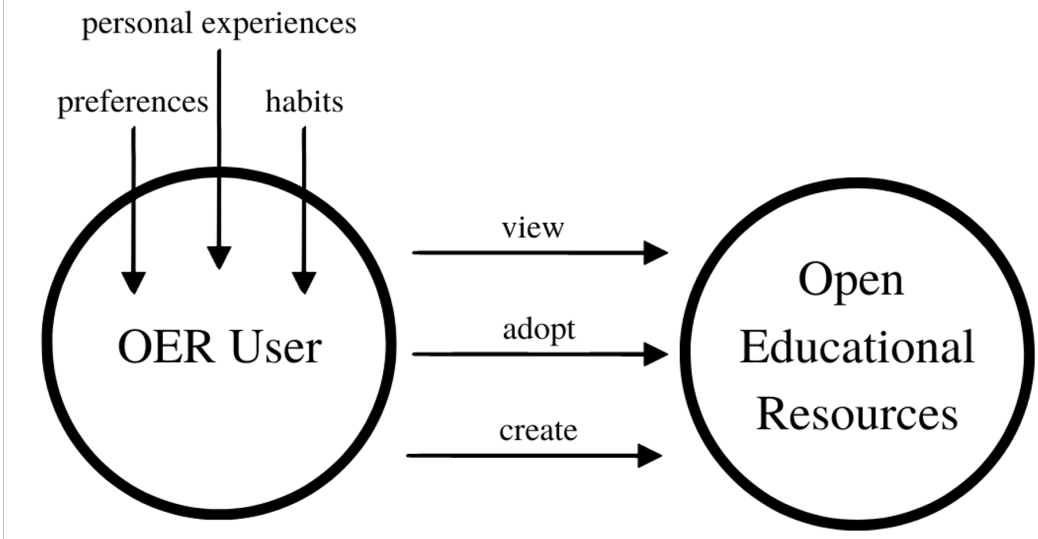

Figure 1. Activity Theory and its Applications to OER.

From *Activity Theory and its Applications to OER* [graphic] by H. Leavitt, 2023, Flickr (https://flic.kr/p/2oLg45E). CC BY-NC.

Summary

This chapter has defined Open Educational Resources (OER) and worked to provide a context of purpose and significance for the present study. In addition, the theoretical framework of activity theory, which the present study is grounded in, was discussed.

Organization of the Study

Chapter I presented an introduction to the study. Chapter II provides a review of the literature. Chapter III discusses methods and procedures for the study. Chapter IV presents the findings of the study. Chapter V provides a discussion of the implications of those findings.

Key Terms

Commercial educational resources: Commercial educational resources refer to textbooks and accompanying resources such as test banks, slide decks, CDs, worksheets, and online-accessed materials published by commercial publishing companies.

Instructional practice: According to Ansell et al. (2021), "instructional practice refers to how information is delivered, received, and experienced by students" (p. 196).

Motivation: According to Sinclair (2008), "In terms of teaching and teacher education, motivations may, therefore, determine what attracts individuals to teaching, how long they remain in their initial teacher education courses and subsequently the teaching profession, and the extent to which they engage with (concentrate on) their courses and the profession" (p. 80).

Open Educational Resources (OER): According to UNESCO (n.d.), these are "learning, teaching and research materials in any format and medium that reside in the public domain or are under copyright that have been released under an open license, that permit no-cost access, re-use, re-purpose, adaptation and redistribution by others" (para. 1).

Course using OER: In the context of this paper, this refers to a course that uses OER materials licensed through the Creative Commons, instead of commercial educational resources.

Open license: According to UNESCO (n.d.), this "refers to a license that respects the intellectual property rights of the copyright owner and provides permissions granting the public the rights to access, re-use, re-purpose, adapt and redistribute educational materials" (para. 2).

Pedagogy: According to Murphy (2008), "pedagogy is about the interactions between teachers, students and the learning environment and learning tasks" (p. 35).

Rural community college: These are institutions of higher education that are located in rural areas and award associates degrees, certificates, and, sometimes, bachelor's degrees. As noted in Rush-Marlowe (2021), the definition of "rural" is not widely agreed upon; thus, the Department of Education counts approximately 260 rural community colleges, while the Rural Community College Alliance (RCCA) counts between 600 and 800 such institutions (Rush-Marlowe, 2021).

CHAPTER II

REVIEW OF LITERATURE

Open Educational Resources (OER) are the centerpiece of the current movement toward low-cost and copyright-free educational materials. As will be shown below, rising costs of higher education, along with a desire to share resources freely without traditional copyright, have encouraged the development and adoption of OER, particularly at community colleges, where the majority of low-income students are served. The institution that served as the site for this study was a rural community college, located in the American Southwest. Therefore, whenever possible, literature related to community colleges was reviewed.

Defining OER

OER are different from commercial educational resources, such as textbooks distributed by large publishing companies, in that authors of OER materials give users "free and unfettered access" to "retain, reuse, revise, remix, and redistribute them" (Hilton et al., 2022, Introduction section). These are often referred to as the 5 Rs. To *retain* refers to the user's ability to keep and download copies of the material. For example, users are free to download and then print copies of OER resources. The ability to *reuse* allows the user to share the material, for example, in a class. To *revise* means to make changes and adaptations to the material. Users of an OER textbook, for example, could delete or rewrite sections of the textbook that were not relevant to their classes. To *remix* means to utilize the existing resource along with content of the user's own and

create something new. For example, users could take an openly licensed image or chart, write wording for an assignment, and have created a completely new resource. Finally, the user is able to *redistribute* a copy of their revised or remixed version of the resource. Thus, the user can share not only the original OER with others, but also the remixed or revised version that the user had created.

Attribution of OER

OER are licensed under Creative Commons, instead of traditional copyrights. Under Creative Commons, creators or licensors "retain copyright while allowing others to copy, distribute, and make some uses of their work — at least non-commercially" (Creative Commons, n.d., para. 2). Further, "Licensees must credit the licensor, keep copyright notices intact on all copies of the work, and link to the license from copies of the work" (Creative Commons, n.d., para. 4). In other words, the licensor chooses the level of use and derivative they wish to allow for their work. In turn, licensees must respect that permission and must retain the licensor's attribution in any copies or derivatives they may make.

Dark Reuse

When discussing data related to the 5 Rs, Beaven (2018) states, "there appears to be little evidence of OER reuse or sharing by individual users, and especially by educators" (p. 378). Beaven (2018) suggests that part of the problem may be a lack of research in the area. Wiley (2009) was also aware of this problem and proposes that dark reuse, or reuse beyond observable spaces on the web, was taking place. To understand the idea of dark reuse, Wiley suggests that one should "imagine an unobservable space offline in which reuse must surely be occurring" (para. 3).

Beaven (2018) found evidence that Wiley's theory of dark reuse may be correct, explaining:

> Although when asked if their [sic] shared through the repository all teachers said they did not, through the professional conversations it became apparent that they did share in other contexts: some shared the resources with colleagues on the teachers' forum on their course website, some shared in the context of professional development activities, or when mentoring colleagues, and many shared with students before and/or after the lesson (including with students who had not attended). (p. 385)

Then, indeed, there is evidence that users of OER share in spaces beyond what is observable on the web. This is one such example of dark reuse.

History of OER

The history of OER begins in the late twentieth century. By the 1990s, the cost of higher education was rising steadily, and universities and academics began to look for alternatives to commercial educational resources. Hanson (2022) found that "Between 1989-90 and 1999-2000, the total cost of attendance (fees, tuition, room, and board) increased 66.3% at public 4-year schools" (College Costs in the 1990s). That was a dramatic jump that many students and families could not afford.

In 1994, the California State University system created MERLOT, a system to identify free higher education resources (Bliss & Smith, 2017). Also in 1994, Wayne Hodgins coined the term "learning object," which would become a widely-used term when referring to digital learning materials (Wiley, 2006). A "learning object" has come to refer to "small (relative to the size of an entire course) instructional components that

can be reused a number of times in different learning contexts" (Wiley, 2000, p. 3). Wiley (2000) continues on, saying:

> Additionally, learning objects are generally understood to be digital entities deliverable over the Internet, meaning that any number of people can access and use them simultaneously (as opposed to commercial instructional media, such as an overhead or video tape, which can only exist in one place at a time). (p. 3)

In 1998, David Wiley proposed an alternative to the traditional copyright license, in which the content would be freely available (Bliss & Smith, 2017). These would be the beginnings of a movement to share educational resources freely and openly in the world of academia.

OER began to gain relevance and importance within the academic community by the beginning of the new millennium. In 2001, Massachusetts Institute of Technology (MIT) announced the launch of OpenCourseWare, an initiative to make its courses freely available to the public for non-commercial use (Wiley, 2006). This initiative by a prestigious institution helped intensify and provide legitimacy to the OER movement. Also in 2001, the newly founded Creative Commons released a unique set of licenses for openly sharing materials (Wiley, 2006). These licenses granted users freedom to share and adapt content. Finally, in 2002, the United Nations Educational, Scientific and Cultural Organization (UNESCO) coined the term Open Educational Resources (OER) (Bliss & Smith, 2017). This term has been used to describe the movement ever since.

OER at Community Colleges

Community colleges are one type of higher education institution where OER have gained a strong foothold. It is traditionally known that community colleges serve many

lower income students. In fact, the National Center for Education Statistics (NCES) found that among the lowest fifth in terms of socioeconomic status, 51% attended community colleges (2019). Further, among the second-lowest fifth in terms of socioeconomic status, 48% attended community colleges (NCES, 2019). Thus the majority of low socioeconomic status students are served by community colleges. The cost savings associated with the adoption of OER benefit all students, but particularly those of low socioeconomic status.

Benefits of OER

Cost Savings

Open Educational Resources have benefits to both students and faculty. A major benefit to students is the fact that OER are freely available, and students do not need to purchase costly commercial textbooks. The cost of textbooks has historically been on the rise, though in recent years textbook costs have finally begun to flatten (Florida Virtual Campus, 2022). Hilton et al. (2014) found that the average cost of a community college textbook was $90.91. More recently, Hanson (2022) found that an average college textbook cost $105.37, with the cost of some textbooks reaching upwards of $400. This is a significant cost for many students, especially those low income students who tend to be served at community colleges.

The cost of purchasing a textbook for each class adds up for students. Wiley and Green (2012) found that "College students spend an average of $900 per year on textbooks—26 percent of the cost of tuition at a public, four-year university" (p. 83). This percentage is likely higher at community colleges, where the cost of tuition is generally lower than four-year universities. More recently, the College Board (2022) found that

students at public, private and nonprofit 4-year institutions averaged $1240 per year on textbooks, while students at community colleges averaged even more at $1460 per year on textbooks. Adoption of OER across campuses would bring those costs to $0, which would greatly impact students in a positive way.

Impact of Textbook Costs on Students. According to a study by Cengage (2018), Eighty-five percent of students say that their textbook and course material expenses are financially stressful, more so than meals and food (63 percent), healthcare (69 percent), and housing (73 percent). Four in ten students say they have skipped meals and three in ten students say they have not taken a class or taken fewer classes due to textbook costs (Cengage, 2018). Further, one in three students reported forgoing trips home in order to pay for textbooks (Cengage, 2018). The study also found that these difficulties due to textbook costs disproportionately affect African American and Hispanic students (Cengage, 2018).

These results are extremely concerning to the health and wellbeing of college students. The results are echoed in another recent study by Florida Virtual Campus (2022), which found that the high cost of textbooks can lead students to take fewer courses overall, not take a particular course due to high textbook cost, earn a poor grade in a class due to not purchasing the required textbook, and drop a course due to textbook costs.

Fischer et al. (2020) found that when students were able to save money on a textbook, the top three expenses students would choose to repurpose their savings on were food, other education costs, and living expenses. Broton and Goldrick-Rab (2018)

stated that “more than half of the 2- and 4-year college students we surveyed reported some type of food-access problem or limitation” (p. 128).

Sanchez et al. (2022) found that, “90% of students perceived the OER would bring them a sense of ‘relief’ during the quarter” (p. 434). One student in the Sanchez et al. (2022) study was quoted as saying the following in response to receiving news that their course was using an OER textbook:

> I was ecstatic that I didn't have to take out hundreds of dollars in loans just for books. This is the first class I was able to save money on books. I work full-time while going to college and to be able to have a little bit more in my pocket means a lot. (p. 434)

Student Retention

Studies have shown that this decrease in cost due to use of OER instead of a commercial textbook can lead to increased student retention (Bol et al., 2022; Fischer et al., 2015). Bol et al. (2022) defined retention as “the number of students who remained enrolled in each section of the OER and non-OER courses at the drop date” (p. 19). Not only are students being retained through the use of OER, but studies have also seen an increase in enrollment intensity due to adoption of OER (Fischer et al., 2015). Enrollment intensity in this context refers to the phenomenon of students taking an OER class and then enrolling in more units the next semester, as compared to students who did not take an OER class.

As noted in Florida Virtual Campus (2022) and Cengage (2018), students may choose not to take classes due to the high cost of textbooks. Therefore, these students are not being retained and enrollment is down. When faculty adopt OER for their classes,

textbook costs are brought down to $0, and student concerns about high textbook costs are alleviated.

Positive Pedagogical Changes

According to Jung et al. (2017) and Lantrip and Ray (2021), many faculty believe adopting OER led to positive pedagogical changes in their classrooms. For example, Jung et al. (2017) surveyed higher education faculty who had adopted OER and found that "several faculty indicated they started employing student-centered instruction such as collaborative and active learning strategies as well as implementing flipped classroom methods" (p. 130). The faculty believed the use of these strategies was both new (since their adoption of OER) and beneficial to their students.

Lantrip and Ray (2021) conducted research at Oregon community colleges and found that 69% of faculty has made changes to their pedagogy and 85% had made changes to their instructional practices as a result of adopting OER for their classes. Such pedagogical changes included faculty being "empowered to create their own assignments that were more student-centered," faculty "allowing them [students] to be more independent learners," and faculty collaborating more within their departments (Lantrip & Ray, 2021, p. 907). Further, "the majority of faculty also felt that OER adoption had made them a more effective instructor" (Lantrip & Ray, 2021, p. 907). In summary, faculty stated that adopting OER led them to become more student-centered and student-empowered, collaborate more with other faculty, and become more effective instructors overall. Faculty believed these positive pedagogical changes came about from adopting OER.

Varieties of OER

OER are incredibly diverse in terms of content and mediums. Atkins et al. (2007) explained that OER "include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge" (p. 4). Faculty can choose to take a single OER element, such as an assignment, and use or adapt it for their course, or faculty can even take a complete course using OER and modify it to suit their needs. This dynamic nature is another benefit of OER. OER can be modified and shared in a timely manner, unlike more static resources such as textbooks. This revising and remixing of OER is also an example of how faculty can utilize their academic freedom. Faculty's academic freedom to create and modify OER is protected in that licensing can require that users provide attribution to the original author of OER materials.

OER Quality and Other Concerns

Although OER are known to have many benefits, some have raised concerns about the quality of OER materials. Commercial textbooks published by large academic publishers are presumed to be high-quality for a number of factors, including having visually appealing graphics, a variety of supplements, an often well-known author, and a substantial review process (Gurung, 2017). OER resources, on the other hand, tend to lack some of these elements; however, that does not mean that OER resources are not of high-quality. In fact, when Clinton et al. (2019) gave students samples of commercial and OER textbooks, they found that commercial and OER textbooks "were not significantly different in terms of effects on student learning" (p. 7).

When faculty in one study were asked about the quality of OER resources, "62% thought that open textbooks have about the same quality as commercial textbooks, whereas 19% thought they have better quality" (Jung et al., 2017, p. 133). Similarly, when asked how scholarly OER textbooks were in comparison to commercial textbooks, 70% of faculty respondents at one university "thought that OER and traditional textbooks were about the same" (Bond et al., 2021, p. 9). Thus, faculty tend to believe that OER resources are of the same or better quality as commercial textbooks.

Other studies have looked at student performance in OER classes, as compared to traditional classes that utilize commercial textbooks. In one survey of faculty, 64% thought students performed as well using OER as commercial resources, while another 23% thought students performed better (Jung et al., 2017). A study by Allen et al. (2015) found no statistically significant difference in performance of two chemistry classes: one using a commercial textbook and one using OER. Fisher et al. (2015) found that, among a wide variety of classes and several institutions, "In three key measures of student success—course completion, final grade of C- or higher, course grade—students whose faculty chose OER generally performed as well or better than students whose faculty assigned commercial textbooks" (p. 168).

These individual conclusions add up. A systematic review by Hilton III (2020) found that "more than 95% of published research indicates OER does *not* lead to lower student learning outcomes" and "the vast majority of students and faculty who have used both OER and CT [commercial textbooks] believe OER are of equal or higher quality" (p. 873). Therefore, one would feel safe to conclude that, by and large, the quality of OER is up to par with commercial textbooks.

Differences Among Subject Areas

It should also be noted that OER are not evenly distributed among different subject areas. Some areas have many more OER available than others. As Elder (2019) explains:

> Many of the largest OER projects funded over the past fifteen years targeted high cost, high impact courses to save students money. Because of this, most of the OER available today are for general education courses such as Psychology, Biology, and Calculus. (Subject Availability)

Additional Concerns

Some have also questioned the amount of time it takes to prepare for a course using OER. Jung et al. (2017) found that, among faculty members, "82% stated that they spent about the same or less time preparing to teach a course using open textbooks, while 18% said that they spent more time" (p. 129). Though it is not the majority, 18% is still a relatively large amount of faculty. The Jung et al. (2018) study included participants from a variety of subject areas, including the sciences, social sciences, mathematics, computers and engineering.

The COUP Framework

One method that has been used to study the impact of OER is the COUP Framework, where COUP stands for Cost, Outcomes, Usage and Perceptions (Open Educational Group, n.d.). Cost looks not only at how much students have saved in a course by using OER instead of purchasing a commercial textbook, but also at factors such as changes in bookstore and tuition revenue (Open Educational Group, n.d.). Outcomes look at student grades, enrollment intensity, and drop, completion and

graduation rates (Open Educational Group, n.d.). Usage refers to how faculty and students utilize the abilities to modify the resources granted under the open licenses. Finally, perceptions look at how faculty and students view OER and various aspects of their quality. The present study will focus mainly on the faculty perceptions area of the COUP framework, particularly in terms of the 5 Rs.

Rural Community Colleges

Recall that rural community colleges are institutions of higher education located in rural areas of the country that award associates degrees, certificates, and, sometimes, bachelor's degrees (Rush-Marlowe, 2021). As the site of the present study is a rural community college, it is necessary to understand general characteristics of such institutions. Cohen and Brawer (2013) identified five main curricular functions of American community colleges: academic transfer preparation, occupational education, continuing education, developmental education, and community service. According to Strawn (2019), 60% of community colleges are in rural areas (p. 73). Despite the large number of rural community colleges, there is fairly little research dedicated to them (Spencer et al., 2023).

Rural community colleges face many issues that may be different from their urban and suburban counterparts. These challenges include "inadequate broadband connectivity, lacking public transportation, and limited access to affordable high-quality childcare" (Rush-Marlowe, 2021, p. 3). Further difficulties for these institutions include hiring faculty and staff, receiving adequate funding, and meeting student needs, including those for mental health services (Rush-Marlowe, 2021).

Despite these challenges, rural community colleges provide valuable services to the local community. Spencer et al. (2023) states that rural community colleges "foster equity via financial, educational, and geographic access" (p. 10). In other words, rural community colleges typically offer lower tuition, open enrollment, access to remedial courses, and convenient rural locations (Spencer et al., 2023).

Student Learning and Engagement

According to The Glossary of Education Reform (2016), "student engagement refers to the degree of attention, curiosity, interest, optimism, and passion that students show when they are learning or being taught, which extends to the level of motivation they have to learn and progress in their education" (para. 1). Further, student engagement may refer to intellectual, emotional, behavioral, physical, social, or cultural engagement (The Glossary of Education Reform, 2016).

A long history of studies have built up to show that increased student engagement is correlated with better student performance and grades. Pintrich and De Groot (1990) found a link between "differences in students' motivational orientation and their cognitive engagement and self-regulation in classroom settings" (p. 37). Skinner and Belmont (1993) found that teacher behavior can influence student engagement in positive or negative ways. Handelsman et al. (2005) found that, in a college mathematics class, student engagement was correlated with homework, midterm and final grades. Together, these and other similar studies indicate that student learning and student engagement are linked. The present study will endeavor to begin to explore the impact of OER on student learning and engagement.

History of Activity Theory

Activity theory originated in Marxist Russia in the twentieth century, building on work done by famed socio-cultural psychologist Lev Vygotsky (McAvinia, 2016). Bakhurst (2009) speaks of Leontiev, a protégé of Vygotsky, explaining that: "Leonteiv distinguishes between 'action' and 'activity.' An action is conducted by an individual or group to fulfill some 'goal.' An activity, in contrast, is undertaken by a community" (p. 199). Described further, an activity "is an interaction of the actor (e.g., a human being) with the world" (Kaptelinin, n.d., 16.3.1). In turn, these activities make up activity systems, and activity theory "examines the relations between activity systems and addresses issues of representation, voice, emotion, identity, and difference" (Bakhurst, 2009, p. 200).

Principles Underlying Activity Theory

Activity theory was not brought to the West until the 1980s by Engeström, which led to additional strains of activity theory developing (Kaptelinin, n.d.). There are four main principles underlying activity theory.

> The first principle is object-orientedness, about which Kaptelinin (n.d.) states:
>
> All human activities are directed toward their objects and are differentiated from one another by their respective objects. Objects motivate and direct activities, around them activities are coordinated, and in them activities are crystallized when the activities are complete. Analysis of objects is therefore a necessary requirement for understanding human activities, both individual and collective ones. (16.3.2.1)

The second principle is human activities are organized in a hierarchical structure that includes motives, goals and conditions. Kaptelinin (n.d.) explains:

> The motive is the object that the subject ultimately needs to attain. . . *Actions* are conscious processes directed at *goals* which must be undertaken to fulfill the object. . . Operations are routine processes providing an adjustment of an action to the ongoing situation. They are oriented toward the *conditions* under which the subject is trying to attain a goal. (16.3.2.2)

The third principle is mediation. Kaptelinin (n.d.) details the importance of mediation to humans, stating:

> Arguably, mediation is the primary dimension along which human beings differ from other animals. It is mediation which has made *homo sapiens* such a successful species: while we do not have sharp claws and thick fur, we compensate that by employing mediating artifacts, such as hammers, knives, and warm clothes. (16.3.2.3)

And finally, the fourth principle is internalization/externalization. Kaptelinin (n.d.) explains, "Any human activity contains both internal and external components" (16.3.2.5). Further, the process of internalization refers to external components turning internal, and the process of externalization refers to internal components becoming external.

Summary

This chapter provided an overview of relevant literature regarding OER. Specifically, this chapter provided a definition of OER, discussed the history of OER, addressed benefits and concerns around OER, introduced the COUP framework,

discussed rural community colleges, provided a history of activity theory, and discussed student learning and engagement.

CHAPTER III

METHODS AND PROCEDURES

The purpose of this study was to examine faculty's attitudes toward OER. Currently, little research about faculty use of the 5 Rs is available. Beaven (2018) found that Wiley's 2009 claim of "dark reuse," or OER reuse happening in the private, rather than the public, sphere appears to be valid. Schroeder and Donat (2023) looked at OER user types based on user activity. This study expands the growing body of literature about the 5 Rs. The study endeavored to answer the following research questions:

1. How are faculty applying the 5 Rs (retain, reuse, revise, remix and redistribute) of OER in their practice?
2. What pedagogical changes have faculty made as a result of adopting OER?
3. How do faculty perceive that OER have influenced student learning and engagement?

This chapter will begin by describing the design of the study, including the rationale, setting, and participant selection, delimitations, instrumentation, and reliability and validity. Next, this chapter will describe data collection and analysis methods and limitations of the study.

Design of the Study

This study was qualitative in nature, using phenomenology research design. Semi-structured interviews were conducted, featuring open-ended questions that engaged

the faculty participants on the topic of OER. The study was conducted at a rural community college in the American Southwest.

Rationale

During the research conducted for the literature review, it was noted that many studies of faculty perceptions of OER were conducted using quantitative or mixed methods surveys (see Anderson et al., 2017; Bond et al., 2021; Jung et al., 2017; Lantrip & Ray, 2021; Pitt et al., 2013). It was difficult to find examples of qualitative research on the subject. For one of the limited examples, see Werth and Williams (2021).

Additionally, the site of the study had significant amounts of quantitative research already being done. Therefore, a further quantitative survey had the potential to result in duplicate information, as well as suffer from low participation and buy-in. Due to the above reasons, the researcher decided that qualitative phenomenological interviews for this study would allow for the finding of rich details about faculty participants' nuanced views on OER.

Methods

Qualitative research methods were chosen for this study. According to Mohajan (2018), "Qualitative research is a form of social action that stresses on the way people interpret and make sense of their experiences to understand the social reality of individuals" (p. 24). In qualitative research, factors including "human consciousness and language, the interactions between people in social situations, the fact that both the researcher and researched are human" are considered (Robson & McCartan, 2016, p. 18). In qualitative research, "designs are flexible rather than fixed, and inductive rather than following a strict sequence or derived from an initial decision" (Maxwell, 2013, p. 2).

Interviews are an essential part of qualitative research. In an interview, the researcher asks questions of a participant and records their answers. The methodology is simple and widely used in qualitative research. According to Robson and McCartan (2016):

> The interview is a flexible and adaptable way of finding things out.. Observing behaviour is clearly a useful research technique but asking people directly about what is going on is an obvious short cut when seeking answers to research questions. (p. 286)

Overall, the interview is an effective method of answering the research questions posed in the present study.

Phenomenology

The phenomenological research methodology was chosen for this study. According to Robson and McCartan (2016), the phenomenological research methodology "focuses on the need to understand how humans view themselves and the world around them" (p. 165). In the present study, the researcher was trying to understand how community college faculty members perceive OER through the process of semi-structured interviews. When using phenomenological interviewing, the goal is "to generate detailed and in-depth descriptions of human experiences" (Roulston, 2010, p, 16). The phenomenological research methodology is well-suited to the types of research questions this study set out to answer.

Setting

The institution that served as the site for this study was a rural community college located in the American Southwest. The institution offers associates degrees, certificates,

and, recently, bachelor's degrees. In addition, the community college in question is part of a statewide initiative to develop more courses using OER in the state's community college system. Quantitative research on the subject of OER has been conducted at this college, but it has not been published.

It is also worth noting that faculty at this institution are encouraged to utilize OER and are given two opportunities to earn stipends involving OER. First, faculty can take a course that explains about OER and how to teach using OER materials for a small monetary stipend. This course is required before faculty can teach a course using OER. Second, faculty can receive a larger monetary stipend for developing or redesigning a course using OER. Once faculty have completed the OER training course, they are given free reign, along with the assistance of an instructional designer, to develop or redesign their course using OER.

Participant Selection

All faculty, both full-time and adjunct, who have taken the college's OER training were invited to take part in this study. An email was sent to these faculty members with the screening questions (see Appendix A). Faculty were given two weeks to respond to this email and self-select to participate in the study. A reminder email was sent out after the first week had passed. As responses came in, the researcher reviewed the survey responses to ensure they were in line with the study and contacted appropriate respondents to schedule interviews.

Exclusionary Criteria. In order to qualify to participate in the study, survey respondents had to indicate that they had previously completed the OER training through

the college and taught an OER class. Respondents who had not done both of those steps were not eligible to participate in the study.

Data Collection

The interviews, lasting between 30 and 45 minutes, were conducted over Zoom, a video conferencing platform. Zoom interviews allowed the participants to select their location for the interview for privacy. The interviews were guided by semi-structured interview protocol, which can be viewed in Appendix B. Semi-structured interviews are best suited for phenomenology due to the balance of structure and flexibility, as compared with fully structured and unstructured interviews. Robson and McCartan (2016) explain that in semi-structured interviews:

> The interviewer has an interview *guide* that serves as a checklist of topics to be covered and a default wording and order for the questions, but the wording and order are often substantially modified based on the follow of the interview, and additional unplanned questions are asked to follow up on what the interviewee says. (p. 285)

The interviews were recorded for transcription purposes after consent was given from each participant. During interviews, the researcher took field notes in an attempt to gather first impressions of the data. As explained in Maxwell (2013), the use of field notes or memos "is particularly important in an interview study, where such information can provide important contextual information, a different perspective from the interviews, and a check on your interview data" (p. 88).

Data Analysis

Data obtained from these interviews was stored on a secure password-protected server offered through the University of North Dakota. Video and audio recordings of each interview were reviewed, along with the automatic transcriptions produced by the Zoom software. Transcripts were reviewed for accuracy and changes were made as needed. The video recordings were deleted for security purposes after transcriptions had been completed. After the interviews were transcribed, line-by-line coding was done using the process of thematic analysis. In thematic analysis, the researcher looks for common themes among participants' responses in order to draw conclusions about the data.

The Five Phases of Thematic Analysis

Robson and McCartan (2016) identified five phases of thematic analysis, which the researcher followed for the present study. In the first phase, the researcher becomes familiar with the data by transcribing the data, reading and rereading the data, and "noting down initial ideas" (Robson & McCartan, 2016, p. 469). In the second phase, the research begins to generate codes. Codes are "the most basic segment, or element, of the raw data or information that can be assessed in a meaningful way regarding the phenomenon" (Boyatzis, 1998, p. 63). During this process, "extracts from the data are given codes in a systematic fashion across the entire data set, with similar extracts being given the same code" (Robson & McCartan, 2016, p. 469).

The third phrase is to begin identifying themes. Robson and McCartan (2016) list the following techniques for identifying themes: repetitions, indigenous categories,

metaphors and analogies, transitions, similarities and differences, linguistic connectors, missing data, and theory-related material (pp. 474-475).

The fourth phase is to construct thematic networks, or maps, of the data. In this step, the analyst focuses "on ways in which themes can be put together" (Robson & McCartan, 2016, p. 476). And finally, in the fifth phase, integrates and interprets the data, "making comparisons between different aspects of the data" while "exploring, describing, summarizing, and interpreting the patterns" (Robson & McCartan, 2016, p. 469).

Lens of Activity Theory

Throughout the process of thematic analysis, the lens of activity theory was used. Underlying activity theory are "the assumptions of *the social nature of human mind* and *inseparability of human mind and activity*" (Kaptelinin, n.d., 16.2.1). Thus, the researcher considered what individual interview participants said in the context of the interviews as a whole.

According to Panke and Seufert (2013), "A researcher with a background in activity theory is interested in the genres the agents will use, adapt or invent for their learning purposes" (p. 121). Thus, the present study examined how these community college faculty members were utilizing the 5 Rs in their current practice.

Reliability & Validity

According to Tufford and Newman (2012), "Conversational encounters, while they afford unique opportunities to construct understanding from the perspective of the informant, also mark an inherently subjective endeavor" (p. 80). Thus, it is necessary to take precautionary steps to ensure reliability and validity.

Reliability. According to Robson and McCartan (2016), reliability "is associated with the use of standardized research instruments," and "the concern is whether the tool or instrument produces consistent results" (p. 173). In an attempt to ensure reliability, the researcher utilized the same interview guide (see Appendix B) with all participants. The researcher made attempts to ensure that the questions on the interview guide were worded clearly and free of bias. It should also be noted that during the interviews, the researcher avoided asking leading questions and worked to establish a rapport with each interviewee.

Validity. According to Robson and McCartan (2016), research has validity when it is "accurate, or correct, or true" (p. 169). Two perspectives on ensuring validity include examining threats to validity and focusing on credibility of research (Robson & McCartan, 2016).

A variety of strategies can be utilized throughout the qualitative research process to help identify and rule out threats to validity. A first threat is "the inaccuracy or incompleteness of the data" (Robson & McCartan, 2016, p. 170). To combat this threat to validity, the interviews were both video- and audio-taped, providing a permanent, detailed record of the interviews, and allowing the researcher to focus on the content of the interview.

An additional threat to validity "is through [the researcher] imposing a framework or meaning on what is happening rather than this occurring or emerging from what you learn during your involvement with the setting" (Robson & McCartan, 2016, p. 170). For this study, bracketing and peer debriefing were utilized to combat this threat. In peer debriefing, the researcher discusses progress with a peer researcher. According to Robson

and McCartan (2016), peer debriefing "can contribute to guarding against researcher bias" (p. 172).

Bracketing in qualitative research is analogous to the use of brackets in a mathematical equation. Gearing (2004) defines bracketing as, a "scientific process in which a researcher suspends or holds in abeyance his or her presuppositions, biases, assumptions, theories, or previous experiences to see and describe the phenomenon" (p. 1430). The researcher used bracketing in an attempt to suspend factors discussed in the Researcher Reflexivity section below.

An additional threat to validity "is in not considering alternative explanations or understandings of the phenomena you are studying" (Robson & McCartan, 2016, p. 170). To combat this threat, the researcher used negative case analysis. In negative case analysis, the researcher searches through the data for "instances which will disconfirm your theory" (Robson & McCartan, 2016, p. 172).

Researcher Reflexivity

The researcher is a white, middle-class, cisgender, straight, non-disabled female. The researcher has previously used OER both as a student and as a faculty member. These prior experiences with OER have likely led to internalized beliefs and assumptions about OER, which innately influence the research process.

Limitations of the Study

The main limitations to this study were due to the fact that the sample size was small. Since the research was conducted at a single community college, the initial sample pool was small. At the time of the study, 120 full-time and adjunct faculty had completed the college's OER training and were eligible to participate in this study. Eight faculty

members completed the study, which equates to 6.67% of the total faculty who had completed the college's OER training.

A further limitation of the study was that only one researcher reviewed, coded and analyzed the data. Humans naturally have inadequacies and biases. Robson and McCartan (2016) note several potential inadequacies of the analyst, including: a limitation on the amount of data one individual can deal with, a tendency to ignore data that conflicts with hypotheses or is out of the ordinary, and a tendency to compare with a "fictional base," even when no such base data is available (p. 462).

An additional limitation of this study is that the study focused on faculty perceptions. Faculty perceptions may not always reflect reality. As Jung et al. (2017) note: "Limitations exist in self-reported data. One such limitation includes the introspective ability of the participants (i.e., they may lack the ability to accurately reflect on the past)" (p. 139). However, as discussed above in the Reliability and Validity section, the researcher took precautions to attempt to avoid the bias and subjectivity of qualitative data analysis. Due to the above limitations, it should be noted that the information gained through this study may not generalize to other institutions and settings.

Summary

This chapter outlined the qualitative methodology of the study. Phenomenological semi-structured interviews were used to answer the study's research questions. Participants were self-selected from faculty at a community college in the American Southwest who had completed an OER training and taught a course using OER. The interviews were analyzed through the process of thematic analysis. Concerns about

reliability and validity were addressed through appropriate methods. In addition, limitations of the present study were discussed.

CHAPTER IV

RESULTS

This chapter will present the results of the interviews about OER that were conducted with faculty members at a rural community college in the American Southwest. The purpose of this study was to examine faculty's attitudes toward OER. Specifically, this study aimed to gain a deeper understanding of faculty motivations surrounding OER, faculty perceptions of OER's influences on students, and pedagogical changes that faculty have made in response to OER.

The study was informed by the following research questions:

1. How are faculty applying the 5 Rs (retain, reuse, revise, remix and redistribute) of OER in their practice?
2. What pedagogical changes have faculty made as a result of adopting OER?
3. How do faculty perceive that OER have influenced student learning and engagement?

Summary of Literature Review

Open Educational Resources (OER), which are freely available to users and feature nontraditional copyright licenses, arose in the late twentieth century as the cost of tuition and educational materials rose dramatically. Prior research has revealed that a main benefit of OER is the cost savings for students (see Cengage, 2018; Fischer et al., 2020; Florida Virtual Campus, 2022; Sanchez et al., 2022). An additional benefit is increased student retention (see Bol et al., 2022; Fischer et al., 2015). Several studies

have also indicated faculty experienced positive pedagogical changes in response to adopting OER in their classroom (see Jung et al., 2017; Lantrip and Ray, 2021).

As the site of the present study was a rural community college, literature on that subject was also reviewed, revealing that rural community colleges typically offer lower tuition, open enrollment, access to remedial courses, and convenient rural locations (Spencer et al., 2023).

Methods

Out of the responses received to the initial screening question survey, a total of eleven faculty members met the exclusionary criteria and were sent an invitation to participate in a Zoom interview. Eight participants accepted the invitation and completed an interview. Participants varied in terms of their backgrounds and number of years teaching in higher education. All eight participants had previously both taught courses with OER and created courses using OER. Additional demographic information about these eight faculty members is shared in Table 1 below.

Table 1. Description of Interview Participants.

Pseudonym	**Subject Area**	**Years Teaching**	**Full Time /Adjunct**	**Gender**	**Highest Education**
Annie	Art History	5-10 years	Full Time	Female	Doctorate
Britney	English	16+ years	Full Time	Female	Master's
Carly	Business	11-15 years	Full Time	Female	Master's
Drew	Math	16+ years	Full Time	Male	Master's
Elle	Education	16+ years	Full Time	Female	Doctorate
Ericka	Math	less than 5 years	Full Time	Female	Master's
Frank	Psychology	11-15 years	Full Time	Male	Master's

Table 1 (continued). Description of Interview Participants.

Faith	Business	less than 5 years	Adjunct	Female	Master's

Introduction to Findings

The eight interviewed faculty members provided a wealth of opinions regarding OER. In the interviews, faculty shared candidly about their experiences with OER. When asked why they chose to implement OER in their courses, several faculty members stated they were told to do so by supervisors at the college, as that was the direction the college was moving in. Additionally, the stipends for completing the OER training and creating OER classes were a motivator for some. Still, many participants indicated they also had the desire to lessen the financial burden on students. These were all reasons the researcher expected to hear, based on the existing literature and the researcher's knowledge of the college.

Participants also shared about the diversity, quality and availability of OER that are available to users. As they represented a variety of subject areas, each participant gave the researcher unique insight into their perceived notions of the availability of and quality of resources available in their fields. Participants referenced using existing OER textbooks, images, websites, test banks, articles and homework managers. In addition, several participants indicated that they had self-authored OER material of their own. These responses reflected findings of Atkins et al. (2007) and Elder (2019).

Analysis

The first part of the analysis involved examining what participants said in their interviews. Recorded interviews were transcribed, verbatim. The initial analysis started

with coding prompted by the research questions and literature review. Examples of these codes include concern for students, materials cost, helping others, and competitive advantage. As the study unfolded, additional themes emerged and were included in the coding process.

Findings

Research Question 1

The first research question was: How are faculty applying the 5 Rs in their practice? Recall that the 5 Rs are: retain, reuse, revise, remix and redistribute. This next section will examine faculty's reported usage of each of the 5 Rs.

Retain. To *retain* means to download and save OER. Many participants indicated that they preferred to be specific and intentional about what they retained. For example, Faith stated the following:

> I would say I retain some stuff, but not a lot. Because I like to screen things before. I know right away what I'm looking for. . . I don't just grab stuff and save it for the sake of going through it again. I like to screen it right on the spot.

In other words, Faith and other participants preferred to retain only OER that they had screened through and that looked useful for their classes; participants tended not to just retain any relevant OER they came across.

Reuse. To *reuse* means to use an OER created by another user. Participants tended to mention reuse in the context of reusing content from a previous semester. Once OER material or course using OER is found or created, participants stated they would reuse that course or material again semester after semester. For example, Elle combined two of the 5 Rs, retain and reuse, stating the following: "I reuse a lot of the things I retain

every semester." Similarly, Carly shared, "Well, reuse, I mean, once I write it, obviously I'm using it term after term for that course."

Revise. To *revise* means to make modifications to an existing OER. All eight participants mentioned using revise, making revise the top-cited of the 5 Rs among participants. Carly shared, "I rarely find something that I can use. . . you know, without any revisions." Many participants echoed this statement that while there may be OER available in their subject area, the materials are rarely exactly as they wanted, and revisions were needed. Similarly, Elle said, "I've never plugged in a whole course, and it just worked. I've always had to modify it in some way."

Participants also indicated that many times they made these revisions in order to meet students' needs. When speaking of completing revisions in her math courses, Ericka stated simply, "I try to adapt to what my students need." Britney compared revising a commercial textbook and an OER textbook and stated the following:

> Well, and if students have complaints about something, or they don't like something in the class, I just dive in and fix it, if I feel like it's the right thing to do. Or, like, if I find a quiz question that has the wrong answer checked, easy fix! If it's a publisher, I can't fix that.

Remix. To *remix* means to adapt an existing OER by adding material of your own. While all eight participants indicated they revised existing OER by removing content, only five participants indicated they had previously remixed existing OER by adding content of their own. When discussing creating courses using OER, Carly explained, "A lot of times I have to put in my own content, so I'll do the remixing."

Redistribute. To *redistribute* means to share publicly OER that you created. While many participants indicated they shared with colleagues, only two of the eight participants stated that they had redistributed their work publicly. Overall, participants had mixed views of the redistribute function of OER. Many of the participants indicated wanting to help others, due to the fact that they themselves had benefited from others' help in the past. For example, Ericka expressed, "I know I've borrowed a lot, so why don't we just let everybody use it?"

In general, when it came to redistributing, two distinct spectrums emerged: those who were eager to share and those who were more reluctant. On one end of the spectrum, Drew, a mathematics faculty member, explained his eagerness to share, stating, "I love it. You know, I feel like it's part of my job. You know since I'm hired here to teach a class. It's for the institution; it's not for me."

On the other end of the spectrum, several faculty indicated they preferred not to share their work, due to losing their competitive advantage over other institutions. For example, Carly, a business faculty member, stated:

> I don't want to share because there's other community colleges that are jumping into bachelor's of business. And so the business side, part of me – like that's our competitive advantage. . . And it's conflicting with well, OER we share. Yeah, but there's a whole strategy side of that, business side of that.

Create. Although create is not one of the 5 Rs, several participants indicated that they had created OER of their own for their courses. Participants expressed a variety of reasons for choosing to author their own OER material, including being able to select exactly which material to cover and not being able to find existing OER material.

Annie, an art history professor, prefers to author some of her own OER material, stating, “I can write my own material and address exactly what I want to.” Elle, an education faculty member, spoke of her experience creating OER as she was writing a course using OER, saying, “I only found the textbook, not the whole course. . . And so I had to create all the assessment materials around that. And they needed, obviously, to align with the learning outcomes for college.”

Britney, an English faculty member, spoke in-depth about her experiences creating a course using OER and authoring resources, saying:

> Oh, I spent an entire summer building the class. It was very high level work. . . And I was searching, scouring the Internet. And when I would get to the place where I couldn’t find anything, I would give up and I would just write it myself. Because I was always checking my time like okay, if I can already find it, it’s worth this much time to me, but beyond that time it’s just easier just to sit down and start typing.

Britney’s response echoes what was found in Schroeder and Donat (2023): “Poor findability and availability in the subject areas, lack of open licenses or high adaptation effort are mentioned as hurdles for the use of OER” (p. 7). In response to these hurdles, many faculty choose to write their own materials, as Britney said.

Summary of the 5 Rs

Table 2 below provides a summary of the present study’s findings about faculty use of the 5 Rs, in relation to Research Question 1.

Table 2. Summary of Main Findings for the 5 Rs.

Retain	Faculty are intentional about what OER they choose to retain.
Reuse	Faculty reuse OER content semester after semester.
Revise	Revise was the most commonly-cited of the 5 Rs. Faculty stated that OER are rarely found in a format exactly as faculty would like, and therefore revision is usually necessary. Revision can also be used to meet specific student needs.
Remix	Faculty prefer to revise OER rather than remix.
Redistribute	Some faculty hold a positive attitude regarding sharing OER they create. These faculty believe they are helping others. Other faculty are less eager to share OER they create, for a variety of reasons. Most faculty interviewed had not publicly redistributed their OER work, though many had shared with colleagues at their institution.

Research Question 2

The second research question was: What pedagogical changes have faculty made as a result of adopting OER? Responses to this question were mixed, with one half of the participants identifying no changes to their pedagogy and the other half identifying some positive pedagogical changes.

No Change. Four of the eight participants indicated that they did not believe they had made pedagogical changes since adopting OER. These participants stated that they were still doing things the same way they were before adopting OER. For example, when asked about OER impacting his pedagogy, Frank, a psychology faculty member, explained that:

> No, it hasn't – And I mean that in a really good way, because that was one of my big concerns switching to OER. I had a structure, a methodology, that I really enjoyed, and I didn't want to have to change that up, you know, switching to

> OER. And that's one of the things that worked really well with Lumen. Lumen had basically a lot of the same things I was already using, except it was free.

In other words, these four participants indicated that since adopting OER, they were still able to continue teaching classes similarly to how they had taught them before when they used commercial textbooks. To them, this meant that the adoption of OER hadn't forced them to sacrifice quality of instruction.

Positive Pedagogical Changes. The remaining half of the participants indicated that they believed adopting OER had influenced their pedagogy in a positive manner. These faculty members indicated that the positive pedagogical changes they made were reflected through their becoming more familiar with the content, having more resources available, diving deeper into the content, making more adaptations based on student needs, and feeling empowered to make changes to course materials. While these changes may not necessarily appear to directly connect to pedagogy, the participants believed the changes were important to their developing pedagogies.

Elle, an education faculty member, indicated that she knows her content better now, thanks to adopting OER. She stated:

> It's forced me to not only become more familiar with the content, because I'm having to read the material and create a lot of my own stuff versus a textbook that might have a lot of discussion questions, pre-created PowerPoints that you can use. . . Because you're more immersed in the material, I think, than you have to be when you just use the textbook that has a teacher's edition with everything.

Ericka, a mathematics faculty member, praised OER for having a wide range of content available in her subject area, allowing her to go into more depth in the content as needed. She shared:

> With the availability of a lot of content online, I feel like if a student needs to deep dive on a specific area that they can. . . So I'd say it's influenced, maybe just the accessibility and how deeply we go into some things.

Faith, an adjunct business faculty, indicated that using OER allows her to better adapt to the varying needs of her students. She spoke about students' various learning styles, as well as the different levels of courses she teaches, saying, "I'm noticing that the lower-level courses, the students need a lot more guidance and a lot more kind of hand-holding and mentoring." Faith followed up by stating she spends more time giving feedback and mentoring students in her 100-level courses. This is due, in part, to many students entering back into school years after high school. High school students, she noted, are right out of school and likewise, need extensive mentoring and support.

Britney, an English faculty member, shared her perceptions of being more open to change after building an OER class. She mentioned that OER allow faculty members to create or modify their own materials instead of waiting for a textbook company to make updates, saying: "Now I feel like I've been through this process, and I know that if I don't like an assignment. . . I feel so much more free to dive in and change things." Britney, much like mathematics faculty Ericka, talked about feeling freer to improve her classes while implementing OER. Britney said, "Because I learned so much, doing the research, building the materials. I felt like I grew so much as a person, and I feel much more empowered to be the writer I always wanted to be."

Research Question 3

The third research question was: How do faculty perceive that OER have influenced student learning and engagement? From this question, three main themes emerged: cost savings, availability, and quality of materials and ease of use.

Cost Savings. When asked what students had shared with them about their experiences with OER, all eight participants indicated that students appreciated the cost savings of using OER, which are free, as compared with traditional commercial textbooks. Several participants shared specific examples of how students repurposed the cost savings from not having to buy a textbook, including Carly, who stated: "Some of the stories are life-changing. . . Some of them [students] literally had to make decisions whether they were going to get gas that week or groceries." Similarly, Britney recalled a student telling her, "I was able to buy groceries because I didn't have to buy a textbook." These powerful statements are in line with results found in Cengage (2018) and Fischer et al. (2020).

Availability. Several participants indicated that with OER, students have immediate access to the textbook and other course resources, whereas, in the past, students might not have a textbook right away. Frank, a psychology faculty member, stated: "I just don't have those conversations anymore. They're [Students are] ready to go from day one. It's just in the course. They have no excuses for not going in and getting readings done."

Elle, an education faculty member, echoed Frank's statements about availability, saying:

> I've gotten feedback that they [students] love not having to worry about purchasing a textbook beforehand, dealing with the bookstore, dealing with shipping if they don't live here, you know, using scholarship funds, things like that, for textbooks. They have it immediately the second they log into Canvas. They have access to all of the material that they need.

Britney, an English faculty member explained that her adoption of OER has also led to her retaining more students, saying, "I wouldn't lose as many students at the beginning of the semester because they had the book– they didn't fall behind." Thinking back to why she adopted OER in the first place, Britney said the following:

> I had students every semester that it would be week three or week five before they actually would end up with their textbook. And students, especially financial aid students, would fall behind. And I didn't like that. It felt like an inequity issue.

Britney's statements are tie into recent research by Florida Virtual Campus (2022), which found that 32.4% of students had experienced "earning a poor grade due to not being able to afford the textbook" (p. 5).

Quality of Materials / Ease of Use. Several participants mentioned that students found the OER high quality and easy to use. Faculty expressed that they were fielding less technical questions from students since adopting OER. For instance, Drew, a mathematics faculty member, shared:

> They've [students] found the resources very easy for them to use. You know, there hasn't been any sort of feedback from students about, "Gosh, I think this thing is just so complicated and I can't figure it out."

Carly, a business faculty member, had just read her end-of-course student reviews prior to her interview. Based on those reviews, she explained the following:

> A lot of the open comments were, "This content is directly related to what's going on at work. Thank you!" And so I reflected on that and if I would've been using a textbook, you know, I wouldn't have gotten this comment. . . Using OER, I'm able to just quickly pull in and swap resources or references to keep it current. . . If it would have been in a textbook, it would've been too generic.

Summary

This chapter discussed the results of the community college faculty interviews about OER. Faculty's responses to their use of the 5 Rs (retain, reuse, revise, remix and redistribute) were discussed in relation to Research Question 1. The present study found that revise was the top-cited among participants of the 5 Rs. As research around the 5 Rs is limited, this may be helpful to future research. Next, faculty's perceived pedagogical changes, whether positive, negative, or lack thereof, in response to adopting OER were discussed in relation to Research Question 2. The study found that half of faculty cited positive pedagogical changes and the other half of faculty cited no pedagogical changes in response to adopting OER. The positive pedagogical changes cited by faculty were in line with what was found in Lantrip and Ray (2021). Finally, faculty's perceptions of the influence of OER on student learning and engagement were discussed in relation to Research Question 3. Faculty cited cost savings, availability, and quality of materials and

ease of use as evidence of student learning and engagement. The next chapter will discuss the emerging themes and how those themes relate to the existing literature.

CHAPTER V

DISCUSSION

This chapter provides a discussion of the results of the present study, along with those implications and suggestions for future research. Recall that the purpose of this study was to examine faculty's attitudes toward OER. The study was informed by the following research questions:

1. How are faculty applying the 5 Rs (retain, reuse, revise, remix and redistribute) of OER in their practice?
2. What pedagogical changes have faculty made as a result of adopting OER?
3. How do faculty perceive that OER have influenced student learning and engagement?

Summary of Findings

This study aimed to gain a deeper understanding of faculty motivations surrounding OER, faculty perceptions of OER's influences on students, and pedagogical changes that faculty have made in response to adopting OER. A qualitative methodology was chosen featuring phenomenological interviewing.

Interviews were conducted with eight faculty members at a rural community college in the American Southwest. Faculty were asked about their use of the 5 Rs (retain, reuse, revise, remix and redistribute). Faculty were able to give examples of their use of each of the 5 Rs, with the most commonly-cited of the 5 Rs being revise. Next,

faculty's perceived pedagogical changes, or lack thereof, in response to adopting OER were discussed. Interviewed faculty were divided equally on this question, with half of the faculty citing no change and half citing positive pedagogical changes since adopting OER. Finally, faculty's perceptions of the influence of OER on student learning and engagement were discussed. From this, three main themes emerged: cost savings, availability, and quality of materials and ease of use. The following sections will illustrate how these themes fit in with existing research. These themes can be visualized by merging them with the previous model in Figure 1, resulting in Figure 2 below.

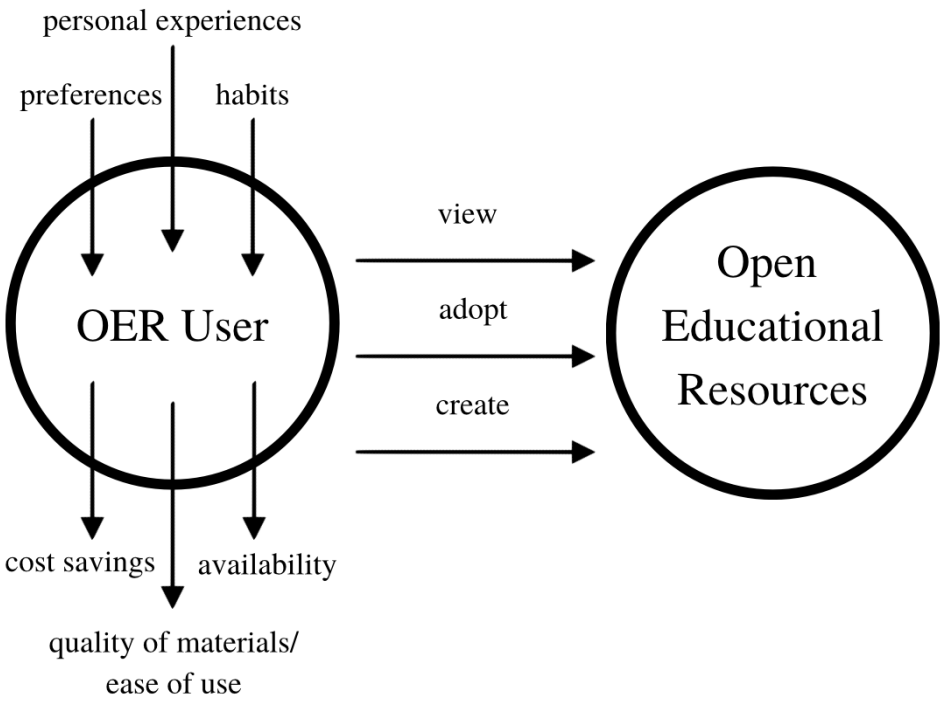

Figure 2. Activity Theory and Present Study Themes.

From *Activity Theory and Present Study Themes* [graphic] by H. Leavitt, 2023, Flickr (https://flic.kr/p/2oLhZpU). CC BY-NC.

Findings Related to the Literature

Research Question 1

Conclusions. The first research question was: How are faculty applying the 5 Rs in their practice? Recall that the 5 Rs are: retain, reuse, revise, remix and redistribute. The most commonly cited of the 5 Rs by the faculty members was revise, which all eight participants indicated they often did. As participants were questioned further about the 5 Rs, what came to emerge from this data was that it depended on what mode the participants were in, as to which of the 5 Rs they used. For instance, an OER user in creating a class mode might use the 5 Rs differently than an OER user in teaching a class mode.

Elle, an education faculty member, explained this phenomenon well when she said, “Now if you're building a class, then you're in the retain and revise mode more. When teaching a class you're reusing and maybe revising and remixing.” In other words, different tools from the 5 Rs may be used for building a class than those that would be used for teaching a class. Figure 3 below shows a possible illustration of faculty use of OER both during teaching and building an OER class. The use of Venn diagram alludes to Elle’s implication that each of the 5 Rs may be used more often for one or both of the occasions.

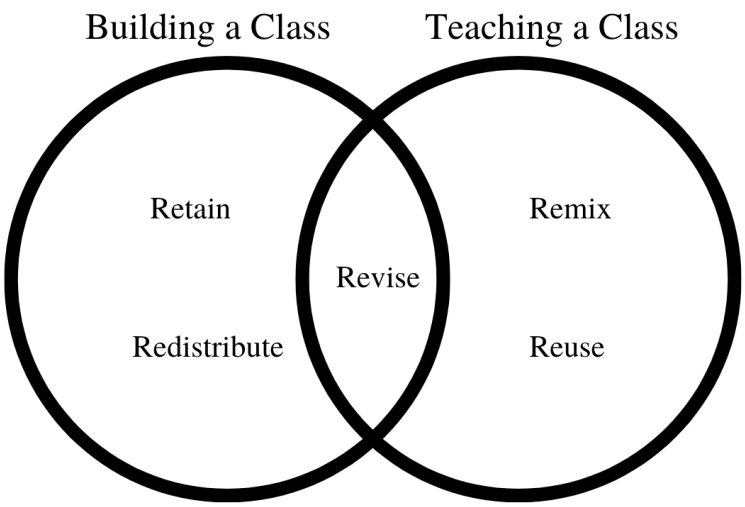

Figure 3. Faculty Use of OER.

From *Faculty Use of OER* [graphic] by H. Leavitt, 2023, Flickr (https://flic.kr/p/2oLi3cC). CC BY-NC.

Another significant finding regarding faculty experiences with the 5 Rs was faculty's views about sharing or redistributing their OER content. Participants tended to fall into one of two camps: those who liked to share and those who were more reluctant. Two participants, both business faculty members, expressed reluctance to share with others what they considered to be their proprietary work.

Discussion. Though many participants expressed a willingness to share OER they had created, only two participants had publicly redistributed their work. The fact that only two of the eight participants had openly shared their OER work aligns with what was found in Schroeder and Donat (2023). While many OER creators share their work with students and individuals in their field or at their institution, not as many OER creators choose to share their work publicly. However, this lack of sharing publicly tends to go against the spirit of OER. According to Beaven (2018), "Sharing is central to the OER movement, and its advocates maintain that sharing is a good thing" (p. 379).

Despite this, Beaven (2018) also goes on to summarize that "There is scant evidence of OER reuse or sharing" in the literature (p. 377). Table 3 below provides an insight into several participants' views of the redistribute function of OER.

Table 3. Participant Comments on Redistributing OER They Create.

Participant	**Pro/Con**	**Theme**	**Direct Quotes**
Carly (Business)	con	time	"It's just that's one more thing on the to-do list."
		proprietary	"I don't want to share because there's other community colleges that are jumping into bachelor's of business. And so the business side, part of me – like that's our competitive advantage. . . And it's conflicting with OER we share."
		impostor syndrome	"I don't want people to read my stuff and go, 'God, this is garbage! Like what is she talking about?'"
Faith (Business)	con	monetary	"I think it's great for others to learn from us. However, we're not like a resource that's online. . . where you can pay for a course and learn and get a certificate on your own. Someone like there's a creator of it and they actually get income from that."
Drew (Mathematics)	pro	part of the job	"I love it. You know, I feel like it's part of my job. You know since I'm hired here to teach a class. It's for the institution; it's not for me."
Elle (Education)	pro	feedback	"I'm happy to share, and I've gotten some good feedback."
Frank (Psychology)	pro	altruism	"I have no problem sharing my stuff. I figure I've done so much borrowing myself. And if somebody else can use it, and it helps save them a little stress, I'm not too worried about it."

Carly's statements in the table above echoes the finding in Beaven (2018) that faculty members may choose not to share their OER out of fear of receiving criticism and due to lack of reward, time, or confidence. Another reason that some faculty members choose not to share their OER is due to concerns about copyright (Bates et al., 2018).

Faculty members could be encouraged to publicly redistribute their OER materials through the college's OER training. A module on how to redistribute and the benefits of redistributing could be added. A recommendation for faculty to feel more comfortable sharing their OER resources is again more training. If faculty felt more comfortable with the different types of licenses available under Creative Commons, perhaps faculty would feel more comfortable sharing publicly their OER creations.

The present study also provides additional evidence of so-called dark reuse, or the idea that reuse and others of the 5 Rs are happening privately, but are not being publicly shared (see Beaven, 2018; Wiley, 2009). The dark reuse theory came about due to the lack of empirical evidence of faculty reuse. The dark reuse theory was confirmed by Beaven (2018), who found, "most of these practices, other than those directly related to the teachers' engagement with the OER repository itself, are hidden, and take place in private spaces" (p. 388). For example, Frank said, "As far as the sharing, you know, I put my course onto our institution's OER system that we have. And that's as far as I've gone, as far as redistributing things." In other words, he has shared within his institution but not publicly. Many participants indicated they had only shared similarly.

Research Question 2

Conclusions. The second research question was: What pedagogical changes have faculty made as a result of adopting OER? Faculty fell into two camps for this question,

with half of them feeling that the adoption of OER had not led to any pedagogical changes, and the other half feeling that the adoption of OER had led to positive pedagogical changes. However, it should be noted that the specific positive pedagogical changes referenced by faculty (such as becoming more familiar with the content, having more resources available, diving deeper into the content, making more adaptations based on student needs, and feeling empowered to make changes to course materials), may not align with traditional definitions of pedagogy. In future research, it might prove well to provide faculty with a definition of pedagogy prior to asking questions. Due to the potential misalignment, it is difficult to make conclusions about the impact of OER on pedagogy.

Discussion. The findings in the present study are similar to the results in Jung et al. (2017), which found that 52%, or nearly half, of faculty surveyed had little change to their pedagogy as a result of adopting OER, with most of the remaining faculty expressing positive change to their pedagogy. The present study begins to provide a framework of reasoning for faculty's lack of pedagogical change when adopting OER in their classrooms. Participants in the present study indicated that this lack of pedagogical change was actually a good thing, in their views. This is because utilizing OER allowed faculty to continue teaching their classes as they had before, when they used commercial textbooks. Faculty in the present study expressed that OER met their standards for quality materials.

Research Question 3

Conclusions. The third research question was: How do faculty perceive that OER have influenced student learning and engagement? From this question, three main themes

emerged: cost savings, availability, and quality of materials and ease of use. All participants indicated that cost savings of using OER instead of a commercial textbook had been beneficial to students. Participants also cited the fact that OER were immediately available to students; whereas, with commercial textbooks, students do not have access to materials until they are purchased. Finally, participants also stated that students tended to say that OER were of a high quality and easy to use.

Discussion. The fact that OER are cost-free for students has been shown by many studies to be a boon to students (see Cengage, 2018; Fischer et al., 2020; Florida Virtual Campus, 2022; Sanchez et al., 2018). The previously cited studies provided research regarding student perspectives on textbook costs. The present study stands out, as it features remarks by faculty on the subject of textbook costs. These faculty remarks provide additional support for the conclusion that OER being freely available is a great benefit to students.

As evidenced by Florida Virtual Campus (2022), more than half of students have chosen not to purchase a required textbook due to its cost, resulting in about a third of students stating they have received a poor grade because they didn't purchase the required textbook. With OER, students have free and immediate access to course materials. Faculty members in the present study referenced the positive impacts they observed from the availability and immediate access to resources thanks to OER. This connects with Jung et al. (2017), which found that "Providing immediate and ubiquitous access to open textbooks may play a role in the improvement of student performance as well as impact faculty expectations of student learning" (p. 137).

A myriad of studies have shown that OER are of comparable quality to commercial textbooks (see Allen et al., 2015; Bond et al., 2021; Clinton et al., 2019; Fischer et al., 2015; Jung et al., 2017). In fact, Hilton III's (2020) systematic review of prior studies on the caliber of OER found that OER are of comparable quality to commercial textbooks and do not produce lowered student learning outcomes. The present study had similar findings, as faculty indicated that students had expressed to them that OER were of a high quality and easy to use.

Suggestions for Future Research

A main contribution of this study is that it adds to a small body of research on faculty's applications of the 5 Rs. However, the present study faced several limitations, including a small sample size, having only one analyst and basing conclusions on faculty perceptions. Due to this and other possible limitations, the information shared through this study may not generalize to other institutions and settings. Therefore, wider research, among both community colleges and four-year institutions nationwide, could be conducted. In particular, the researcher would be interested to see whether similar results are found at other community colleges across the nation.

Further research regarding changes to pedagogy in response to utilizing OER could be conducted. Recall that half of the faculty members interviewed expressed that they believed they had experienced positive pedagogical changes in response to utilizing OER, though the specific examples given did not necessarily provide sufficient evidence of that. In addition, future research could focus on specific subject areas and types of OER materials utilized.

Findings from the present study could be used to inform the institution's OER training. As discussed above, providing faculty with additional training on Creative Commons licensing, the benefits of redistributing, and how to redistribute, might encourage more public sharing of OER.

Another direction that would be of interest for future research would be to conduct a similar qualitative study with students who have taken courses using OER. While prior studies have examined student perceptions of OER (a prime example would be Sanchez et al., 2022), a study breaking down student perceptions of OER by student characteristics (such as income, race/ethnicity, major, etc.) would be a welcome addition to the OER body of research.

Conclusion

This study sought to examine faculty's attitudes toward OER. Specifically, this study aimed to gain a deeper understanding of faculty motivations surrounding OER, faculty perceptions of OER's influences on students, and pedagogical changes that faculty have made in response to adopting OER. A first key takeaway from this study was through the discussion of faculty use of the 5 Rs, the result that faculty had mixed views on redistributing. A second key takeaway from this study was that faculty experienced either positive or no change to their pedagogy after adopting OER. Further, the idea that faculty experienced no change to their pedagogy was not a drawback of OER. Faculty perceived the fact that they could continue teaching their classes as they did when they used commercial textbooks as a positive. A final key takeaway from this study was that faculty indicated that students had expressed to them that OER were of a

high quality and easy to use. The above findings are in line with prior research and add to the growing body of evidence on the effectiveness of OER.

Hilton III (2020) closes his systematic review by posing a thought-provoking question: “Does no significant improvement in academic performance justify a $150 textbook?” (p. 873). This researcher, a faculty member herself, would say that this cost is not justified. As noted through the present study and others cited within, OER are effective, cost-free tools for learning, and this researcher encourages their widespread adoption.

APPENDICES

Appendix A

Recruitment Email

Greetings colleagues!

I am seeking participants for a study I am conducting as part of my PhD in Teaching and Leadership through the University of North Dakota. I am seeking to learn more about faculty use and perception of Open Educational Resources (OER) at this college. I will be conducting one-on-one interviews via Zoom to learn more about your views. If you would be interested in participating, please take the short screener survey below. Thank you kindly for your time and consideration.

Warmly,

Heather Leavitt

Appendix B

Screener Survey Questions

1. Have you completed the college's OER training? (yes/no)
2. Are you currently teaching, or have you previously taught a course using OER? (yes/no)
3. Have you ever developed a course using OER? (yes/no)
4. Would you be willing to participate in an approximately 30 minute interview, to be conducted over Zoom, regarding your experiences with OER? If yes, please include your name and email here. (yes/no) (email - optional)

The following questions will be asked only if the participant selects "yes" on question 4 above. If "no" is selected, the survey will end.

5. Gender (male / female / other)
6. Age (20-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80 and above)
7. Race (American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, Hispanic or Latino, White)
8. What is your highest level of education? (high school, some college, college graduate, master's degree, doctoral degree)
9. Department (fill in the blank)
10. Employment Status (adjunct faculty, full time faculty, staff)
11. How long have you been teaching at the college level? (less than 5 years, 5-10 years, 11-15 years, 16 or more years)

Appendix C

Interview Guide

1. What subject areas and in what format (in-person, online, WebLive) have you taught courses using OER at the college? Have you taught these courses in a non-OER format before?
2. What types of OER do you use in your classroom?
3. Why did you choose to do the training and teach a course using OER?
4. Have you ever created a course using OER of your own through the college? If so, what were your experiences?
5. What has been your experience with the 5 Rs (retain, reuse, revise, remix, redistribute)? What would you say are your "top 2" most utilized of the 5 Rs?
6. Did OER influence your pedagogy in the classroom?
7. What have students shared with you about their experiences with OER in your classroom?
8. Is there anything else you would like to share?

REFERENCES

Allen, G., Guzman-Alvarez, A., Smith, A., Gamage, A., Molinaro, M., & Larsen, D. S. (2015). Evaluating the effectiveness of the open-access ChemWiki resource as a replacement for traditional general chemistry textbooks. *Chemistry Education Research and Practice, 4*(16), 939-948. https://doi.org/10.1039/C5RP00084J

Anderson, T., Gaines, A., Leachman, C., & Williamson, E. P. (2017). Faculty and instructor perceptions of open educational resources in engineering. *The Reference Librarian*, *58*(4), 257–277. https://doi.org/10.1080/02763877.2017.1355768

Ansell, R. E., Morales, W. G., Kuras, A., Requa, C. M., Mulvaney, T. (2021). Leading transformational experiences for K-8 teachers: How to build capacity to implement innovative practices. In L. N. Roberts (Ed.), *Redesigning Teaching, Leadership, and Indigenous Education in the 21st Century* (pp. 196-218). IGI Global.

Atkins, D. E., Brown, J. S., & Hammond, A. L. (2007). *A review of the open educational resources (OER) movement: Achievements, challenges, and new opportunities* (Vol. 164). Mountain View: Creative Commons.

Bakhurst, D. (2009). Reflections on activity theory. *Educational Review*, *61*(2), 197–210. https://doi.org/10.1080/00131910902846916

Beaven, T. (2018). 'Dark reuse': An empirical study of teachers' OER engagement. *Open Praxis*, *10*(4), 377–391.

Blick, W., & Marcus, S. (2017). The brightly illuminated path: facilitating an OER program at community college. *College Student Journal*, *51*(1), 29+. https://link.gale.com/apps/doc/A487602749/EAIM?u=ndacad_58202zund&sid=bookmark-EAIM&xid=89c715e5

Bliss, T. J., & Smith, M. (2017). A brief history of open educational resources. In: R. S. Jhangiani & R. Biswas-Diener (Eds.), *Open: The philosophy and practices that are revolutionizing education and science* (pp. 9–27). Ubiquity Press.

Bol, L., Esqueda, M. C., Ryan, D., & Kimmel, S. C. (2022). A comparison of academic outcomes in courses taught with open educational resources and publisher content. *Educational Researcher*, *51*(1), 17–26. https://doi.org/10.3102/0013189X211052563

Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development.* Sage.

Broton, K. M., & Goldrick-Rab, S. (2018). Going without: An exploration of food and housing insecurity among undergraduates. *Educational Researcher*, *47*(2), 121–133.

Bureau of Labor Statistics. (2016, August 30). College tuition and fees increase 63 percent since January 2006. *The Economics Daily*. Retrieved from https://www.bls.gov/opub/ted/2016/college-tuitionand-fees-increase-63-percent-since-january-2006.htm

Cengage. (2018). New survey: College students consider buying course materials a top source of financial stress. Retrieved from https://blog.cengage.com/college-students-consider-buying-course-materials-a-top-source-of-financial-stress/

Clinton, V., Legerski, E., & Rhodes, B. (2019). Comparing student learning from and perceptions of open and commercial textbook excerpts: A randomized experiment. *Frontiers in Education*, *4*. https://www.frontiersin.org/articles/10.3389/feduc.2019.00110

Cohen, A. M., & Brawer, F. (2013). *The American community college*. San Francisco, CA: Jossey-Bass.

College Board. (2022). *Trends in college pricing and student aid 2022.* Retrieved from https://research.collegeboard.org/media/pdf/trends-in-college-pricing-student-aid-2022.pdf

Creative Commons. (n.d.). About the licenses. Retrieved from https://creativecommons.org/licenses/

East Tennessee State University (ETSU). (2022). *Open and affordable course materials.* https://libraries.etsu.edu/research/oer/home

Elder, A. K. (2019). *Introduction to Open Educational Resources*. https://iastate.pressbooks.pub/oerstarterkit/chapter/introduction/

Fischer, L., Belikov, O., Ikahihifo, T. K., Hilton III, J., Wiley, D., & Martin, M. T. (2020). Academic librarians examination of university students' and faculty's perceptions of open educational resources. *Open Praxis*, *12*(3), 399–415. https://doi.org/10.5944/openpraxis.12.3.1081

Fischer, L., Hilton III, J., Robinson, T. J., & Wiley, D. A. (2015). A multi-institutional study of the impact of open textbook adoption on the learning outcomes of post-secondary students. *Journal of Computing in Higher Education*, *27*(3), 159–172. https://doi.org/10.1007/s12528-015-9101-x

Florida Virtual Campus. (2022). *2022 student textbook and instructional materials survey.* https://dlss.flvc.org/documents/210036/1314923/FLVC+Textbook+Survey+Report+-+2022.pdf/818e20cb-1daa-3565-a948-192f5287917c

Gearing, R. E. (2004). Bracketing in research: A typology. *Qualitative Health Research. 14*(10), 1429-1452.

The Glossary of Education Reform. (2016, Feb. 18). *Student engagement.* https://www.edglossary.org/student-engagement/

Gurung, R. A. R. (2017). Are OE resources high quality?. In: Jhangiani, R S and BiswasDiener, R. (eds.) *Open: The philosophy and practices that are revolutionizing education and science*. Pp. 79–86. London: Ubiquity Press. DOI: https://doi.org/10.5334/bbc.f

Handelsman, M. M., Briggs, W. L., Sullivan, N., & Towler, A. (2005). A measure of college student course engagement. *The Journal of Educational Research*, *98*(3), 184–191.

Hanson, M. (2022, July 15). *Average cost of college by year*. Education Data Initiative. https://educationdata.org/average-cost-of-college-by-year

Hilton III, J. (2020). Open educational resources, student efficacy, and user perceptions: A synthesis of research published between 2015 and 2018. *Educational Technology Research and Development*, *68*(3), 853–876. https://doi.org/10.1007/s11423-019-09700-4

Hilton III, J., Gaudet, D., Clark, P., Robinson, J. & Wiley, D. (2013). The adoption of open educational resources by one community college math department.

International Review of Research in Open and Distributed Learning, 14(4), 37–50. https://doi.org/10.19173/irrodl.v14i4.1523

Hilton III, J., Mason, S., & Clinton-Lisell, V. (2022). *Review*. Open Education Group. https://openedgroup.org/review

Hilton III, J., Robinson, T. J., Wiley, D., & Ackerman, J. D. (2014). Cost-savings achieved in two semesters through the adoption of open educational resources. *The International Review of Research in Open and Distributed Learning*, *15*(2). https://doi.org/10.19173/irrodl.v15i2.1700

Hilton III, J., Wiley, D., Chaffee, R., Darrow, J., Guilmett, J., Harper, S., & Hilton, B. (2019). Student perceptions of open pedagogy: An exploratory study. *Open Praxis*, *11*(3), 275. https://doi.org/10.5944/openpraxis.11.3.973

Jung, E., Bauer, C., & Heaps, A. (2017). Higher education faculty perceptions of open textbook adoption. *The International Review of Research in Open and Distributed Learning*, *18*(4). https://doi.org/10.19173/irrodl.v18i4.3120

Kaptelinin, V. (n.d.). Activity theory. In *The encyclopedia of human-computer interaction.* Interaction Design Foundation. Retrieved from https://www.interaction-design.org/literature/book/the-encyclopedia-of-human-computer-interaction-2nd-ed/activity-theory

Lantrip, J., & Ray, J. (2021). Faculty perceptions and usage of OER at Oregon community colleges, *Community College Journal of Research and Practice*, 45(*12*), 896-910.

Leavitt, H. (2023a). *Activity theory and its applications to OER* [graphic]. Flickr. https://flic.kr/p/2oLg45E

Leavitt, H. (2023b). *Activity theory and present study themes* [graphic]. Flickr. https://flic.kr/p/2oLhZpU

Leavitt, H. (2023c). *Faculty use of OER* [graphic]. Flickr. https://flic.kr/p/2oLi3cC

Lubbers, T. (2014, October 2). It's time to redefine "full-time" in college as 15 credits. Complete College America. https://completecollege.org/resource/its-time-to-redefine-full-time-in-college-as-15-credits/

Maxwell, J. A. (2013). *Qualitative research design: An interactive approach* (3rd ed.). Sage.

McAvinia, C. (2016). *Online learning and its users.* Elsevier.

Mohajan, H. K. (2018). Qualitative research methodology in social sciences and related subjects. *Journal of Economic Development, Environment & People*, *7*(1), 23–48. https://doi.org/10.26458/jedep.v7i1.571

Murphy, P. (2008). Defining pedagogy. In K. Hall, P. Murphy and J. Soler (Eds.), *Pedagogy and practice: Culture and identities* (pp. 28-39). UK: The Open University and SAGE.

National Center for Education Statistics (NCES). (2019). Young adult educational and employment outcomes by family socioeconomic status. *Condition of Education*. U.S. Department of Education, Institute of Education Sciences. Retrieved from https://nces.ed.gov/programs/coe/indicator/tbe

Open Educational Group. (n.d.). The COUP framework. Retrieved from https://openedgroup.org/coup

Panke, S., & Seufert, T. (2013). What's Educational about open educational resources? Different theoretical lenses for conceptualizing learning with OER. *E-Learning and Digital Media*, *10*, 116–134. https://doi.org/10.2304/elea.2013.10.2.116

Pfannenstiel, A., Redcay, A., & Albert, D. (2020). Student perceptions of textbooks: Prior behaviors and beliefs can influence zero textbook cost (ZTC) adoption impact. *Open Praxis*, *12*(4), 555–567. http://doi.org/10.5944/openpraxis.12.4.1119

Pintrich, P. R., & De Groot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, *82*(1), 33–40. https://doi.org/10.1037/0022-0663.82.1.33

Pitt, R., Ebrahimi, N., McAndrew, P. and Coughlan, T. (2013). Assessing OER impact across organisations and learners: experiences from the bridge to success project. *Journal of Interactive Media in Education*, 2013(3), p.Art. 17. DOI: http://doi.org/10.5334/2013-17

Plotkin, H. (2010). *Free to learn: An open educational resources policy development guidebook for community college governance officials.* Creative Commons. https://wiki.creativecommons.org/images/6/67/FreetoLearnGuide.pdf

Robson, C., & McCartan, K. (2016). *Real world research: A resource for users of social research methods in applied settings* (4th ed.). Wiley.

Roulston, K. (2010). *Reflective interviewing: A guide to theory & practice.* Sage.

Rush-Marlowe, R. (2021). *Strengthening rural community colleges: Innovations and opportunities*. Washington, D.C. Association of Community College Trustees.

Sanchez, S., Carter, D. E., Morey, T., & Fedorek, B. (2022). Student perceptions of an open educational resource for an introduction to criminal justice course. *Journal of Criminal Justice Education, 33(3),* 426-441.

Scanlon, E., & Issroff, K. (2005). Activity theory and higher education: Evaluating learning technologies. *Journal of Computer Assisted Learning*, *21*(6), 430–439. https://doi.org/10.1111/j.1365-2729.2005.00153.x

Schroeder, N., & Donat, S. (2023). 'Give and take' – Higher education teachers using open educational resources. *Research in Learning Technology*, *31*. https://doi.org/10.25304/rlt.v31.2916

Sinclair, C. (2008). Initial and changing student motivation and commitment to teaching. *Asia-Pacific Journal of Teacher Education, 36*(2), 79-104.

Spencer, E. N., Ocean, M., Saboe, M., Condliffe, S., & Hazen, K. (2023). "We service the taxpayers and families where others do not": A rural community college typology. *Community College Journal of Research and Practice*, 1–16. https://doi.org/10.1080/10668926.2023.2192701

Strawn, R. M. (2019). Rural community colleges as a student choice. *New Directions for Community Colleges*, *2019*(187), 73–81. https://doi.org/10.1002/cc.20371

Tufford, L., & Newman, P. (2012). Bracketing in qualitative research. *Qualitative Social Work*, *11*(1), 80–96. https://doi.org/10.1177/1473325010368316

UNESCO. (n.d.). *Open educational resources*. https://www.unesco.org/en/communication-information/open-solutions/open-educational-resources

Werth, E., & Williams, K. (2021). Learning to be open: Instructor growth through open pedagogy. *Open Learning: The Journal of Open, Distance and e-Learning*, *0*(0), 1–14. https://doi.org/10.1080/02680513.2021.1970520

Wiley, D. (n.d.). *Defining the "open" in open content and open educational resources.* Open Content. http://opencontent.org/definition/

Wiley, D. (2000). Connecting learning objects to instructional design theory: A definition, a metaphor, and a taxonomy. In D. Wiley (Ed.), *The instructional use of learning objects*. Association for Instructional Technology. http://www.reusability.org/read/

Wiley, D. (2006). *Organisation for economic co-operation and development*. https://hewlett.org/wp-content/uploads/2016/08/HistoryofOER.pdf

Wiley, D. (2009, June 10). Dark matter, dark reuse, and the irrational zeal of a believer. *Iterating Toward Openness* [blog post]. Retrieved from http://opencontent.org/blog/archives/905

Wiley, D., & Green, C. (2012). Why openness in education? In D. G. Oblinger (Ed.), *Game changers: Education and information technologies*. Educause.

Wiley, D., Williams, L., DeMarte, D., & Hilton, J. (2016). The tidewater Z-degree and the INTRO model for sustaining OER adoption. *Education Policy Analysis Archives*, *24*(41). https://doi.org/10.14507/epaa.24.1828