

Breaking Barriers: Understanding and Removing Barriers to OER Use

by

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Abstract

While there are many benefits to the use of OER, such as cost savings for students, increased access to resources, and the ability for faculty to adapt the resources to meet their specific needs, new and experienced faculty members also face many barriers when attempting to incorporate Open Educational Resources (OER) into their courses. Research suggests that awareness, funding, time, and institutional supports are factors that impact faculty using or not using OER. The purpose of this research was to investigate the barriers that business faculty in Ontario colleges face when using OER within their teaching practices and determine if faculty have recommendations to overcome the barriers to using OER.

Based on a review of the literature on OER and the barriers business faculty experience when using OER, a mixed-method approach was used in this research. The study focused on Ontario college faculty teaching business courses. Data was collected via a survey and follow-up interviews. Seventy-two respondents from 12 Ontario colleges responded to the survey. Nine participated in follow-up interviews. Respondents were asked about their experiences using OER, the barriers they faced, and solutions to overcome them.

A thematic and cross tabulation analysis of the responses demonstrated that faculty are introduced to OER in different ways, and institutions have unique approaches to supporting faculty with OER. Faculty experience barriers to using OER, such as no suitable resources, awareness, knowledge, support, and institutional processes. Faculty outlined ways to overcome such barriers, including but not limited to professional development, creation of new high-quality content, time to create the resources, and enhanced collaboration and networking efforts.

Keywords: Open Educational Resources, OER, OER barriers, OER strategies, Ontario, colleges, post-secondary, business, faculty

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Breaking Barriers: Understanding and Removing Barriers to OER Use

Chapter 1: Study Background

In the spring of 2018, I became interested in the area of open educational resources (OER) and the benefits they may bring to faculty and students. UNESCO (2012) defines OER as: teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions. (p. 1)

By reducing or removing the cost of the students' resources and making the material adaptable so educators could easily make changes for their specific uses, OER appeared to be a solution to many problems I had witnessed as a student, educator, and support resource to educators. Encouraging faculty to adopt OER into their teaching can be a difficult task. Allen and Seaman (2014) for example, found that 34% of U.S. college faculty were aware of OER and not all faculty had been informed of the efficacy and quality of OER. Such barriers are still an issue, and there remains an opportunity to inform educators about what OER are, and the benefits to using them such as cost savings, access, and quality.

Cost Saving Benefits

Textbooks have become a vital component of the higher education model (Bok, 2009) and the significant cost of textbooks can negatively impact students who do not have the financial ability to cover the cost of their education (Jung, Bauer & Heaps, 2017). Hilton, Robinson, Wiley, and Ackerman (2014) for instance, uncovered that the average price for a single textbook at seven different colleges in the United States of America, across a variety of subject areas, was \$90.00 (U.S.D). Textbook costs varied by subject, with the developmental

reading textbook costing \$39.74, the business fundamentals textbook costing \$41.76, and the biology fundamentals textbook costing \$148.28 (Hilton et al., 2014). Within the Ontario college system, I reviewed the first-year textbook costs for a business program in the 2018/2019 academic year. The total price for the required textbooks within the first year was \$1,118.58, with ranges from \$0 for a business communications course, to \$154.26 for the introductory accounting course materials (Carson, 2019). The high cost of textbooks has shown relation to students not registering for a course, dropping a course, or taking fewer courses in a semester, and can prevent students from purchasing the required textbooks for their courses (Florida Virtual Campus, 2012). Students are going into significant debt while attending post-secondary education, with the average graduating senior in America finishing their studies with \$28,400 (U.S.D) of student debt (Reed & Cochrane, 2013) and students that graduated from a Canadian college in 2015 owing an average of \$15,300 to government or non-government sources (Statistics Canada, 2019). Not all faculty members experienced higher education under the same financial situation as their students, and by providing statistical data on the negative impact of current textbook costs, faculty could be more equipped to make an informed decision on the required and recommended resources they select for their courses. Not only would faculty adopting OER financially impact each student, but it would also create an even playing field by allowing all individuals the same access to the course resources.

Accessibility Benefits

OER provide opportunities for improved accessibility to learners, through access to content and technology capabilities that allow individuals with disabilities to access the material. Part of the concept of OER was to allow for universally accessible material for students and educators to access (Hilton, 2016) and with several government legislations requiring

educational material to be offered in an accessible format, it is essential for faculty to understand the accessibility features of OER (Jung, Bauer & Heaps, 2017). Creating an open textbook using a tool like Pressbooks allows learners to access the material anywhere there is an internet connection and a computer. The material can be downloaded in light-weight formats that do not require high-speed internet, to ensure content can still be viewed on a digital device such as a cellphone, tablet or computer, or can be printed for an analog version at the cost of paper and ink. Young (2015) highlighted accessibility concerns factoring into the faculty members decision-making process on resource selection for their courses, with slightly over half of the faculty members in the study perceiving open textbooks as being entirely or mostly accessible.

Quality of OER

Quality of OER is a common concern with faculty as they investigate using an OER for the first time. While it is true that some material found online can be out of date or inaccurate, there are also several excellent resources for obtaining OER that go through a similar or more rigorous peer-review process than offered from commercial publishers. OpenStax for example, highlights their publishing process, which involves preparation, planning, outlining, writing, review, revision and final production (Palmiotto, 2018). In a study of 136 faculty members that adopted open textbooks into their courses, 88% of the faculty members perceived their students as equally or more prepared, 87% of faculty believed students performed better or at the same level of performance, and 81% of faculty thought that open textbooks had the same or better quality as traditional textbooks (Jung, Bauer & Heaps, 2017). Not only are faculty discussing their overall satisfaction with OER, but so are students. In a study at the Virginia State University School of Business, 167 students responded to the fall 2010 survey and 148 students responded to the spring 2011 survey. Of the 315 responses, approximately 65% of students agreed or

strongly agreed that they favored the OER to traditional textbooks (Feldstein et al., 2012). At the University of Georgia, 1299 students that used a biology open textbook were surveyed in the fall 2013 and spring 2014 semesters. 64% reported the open textbook was of similar quality, and 22% said it was of higher quality than a traditional textbook (Watson et al., 2017).

Statement of the Research Problem

While OER have many benefits and have started to gain traction within the higher education community over recent years, there are still several barriers to using OER. Some identified barriers include the ability to find suitable and up-to-date content (Allen & Seaman, 2016; Jhangiani et al., 2016), inadequate institutional support, lack of knowledge on institutional policy (Jhangiani et al., 2016), and a lack of ancillary resources or low quality of ancillary resources for open textbooks (Jung, Bauer & Heaps, 2017). Determining what specific barriers Ontario college faculty face, and approaches to removing the barriers may further support an increase in faculty use of OER within the Ontario college system. With no published research on the barriers Ontario college faculty face to using OER, I was interested in uncovering the specific barriers that occur within the Ontario College system. I plan to work within the Ontario College system for the foreseeable future and hope this research can help my fellow colleagues that plan to implement OER initiatives at their institutions.

Personal Context

In 2019, eCampusOntario, a not-for-profit corporation that is funded by the Government of Ontario to support the 45 publicly funded Ontario colleges and universities in online and technology-enabled learning developed the *Open at Scale – Business OER* project. As part of this project, I was hired as the Project Manager – Business OER to collaborate with Ontario college business faculty and administration to create, adapt, and encourage the adoption of OER within

their respective institutions. After one month of leading the Business OER initiative, I realized that while I had discussed OER with several faculty members who were passionate about OER, I did not have a clear understanding of the perceived barriers that faculty members face with OER, or best practices to support faculty with overcoming the barriers to the use of OER. Since the fall of 2019, I have been an advocate for replacing commercial textbooks with OER, and supported faculty throughout Canada with incorporating OER into their teaching practices.

Purpose of the Study

The purpose of this research study was to determine the barriers that Ontario college faculty face when using OER and to develop strategies to overcome the barriers. According to Belikov and Bodily (2016), lack of understanding of OER, the time required to incorporate OER into a course, and the ease of discoverability are themes of barriers with OER and models to overcome these barriers should be explored. Results from this study may uncover new or additional barriers and strategies to be used to address the barriers. Due to my involvement in the Open at Scale – Business OER project, I chose to focus specifically on business faculty for this study.

The research questions listed below guided my data collection and analysis. These questions helped me focus on the barriers that Ontario college business professors face and provided strategies to overcome identified impediments.

Research Questions

The overarching research questions and sub-questions were:

- In what ways might barriers to OER use, experienced by Ontario college business faculty, be identified and addressed?
 - What are the current barriers identified by faculty members to using OER?

- What strategies do faculty report as solutions to help them address the barriers to using OER?

Definition of Key Terms, Abbreviations, and Acronyms

Creative Commons is a global not for profit organization that provides free legal tools to support individuals and businesses to share and reuse content and knowledge.

eCampusOntario is a not-for-profit corporation that is funded by the Government of Ontario to support the publicly funded colleges and universities in Ontario in online and technology-enabled learning.

Open Educational Resources (OER) is a term defined by UNESCO as “teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions. Open licensing is built within the existing framework of intellectual property rights as defined by relevant international conventions and respects the authorship of the work” (2012, p. 1).

Ontario Colleges 24 colleges situated throughout the province of Ontario.

Open Licenses allow an individual to share their work freely, with a specific set of guidelines to what can be done with the work. One of the most common licenses used for sharing OER is a Creative Commons license (Hilton, Wiley, Stein & Johnson, 2010). Creative Commons licenses have three layers to the license, which include legal code, human-readable language, and machine-readable language. Based on the specific license used, the material can be copied, distributed, edited, remixed, and/or built upon, all within the limitations of copyright law (Creative Commons, n.d.).

Open Textbooks are openly licensed educational books that are made freely available to students, faculty, and the general public. The textbooks can be available in print and digital formats, with some of the most common digital formats being HTML, Adobe PDF, and plain text. Open textbooks are one of several types of OER.

SWF Standard Workload Formula. The formula used to assign, measure and monitor an academic employees' workload in the Ontario college system.

UNESCO The United Nations Educational, Scientific and Cultural Organization. UNESCO focuses on promoting peace through cooperation in education, science, and culture.

Theoretical Framework

The theoretical framework that guided this research is the diffusion of innovations (DoI) theory. DoI is used to explain how an idea gains momentum, is communicated through channels, and diffuses through a specific social system over a period of time (Rogers, 2003). Diffusion occurs through a five-step innovation-decision process, where an individual seeks information to discover the advantages and disadvantages of an innovation (Rogers, 2003). The five steps of the decision-making process are knowledge, persuasion, decision, implementation, and confirmation (Rogers, 2003), which are outlined in figure 1 below.

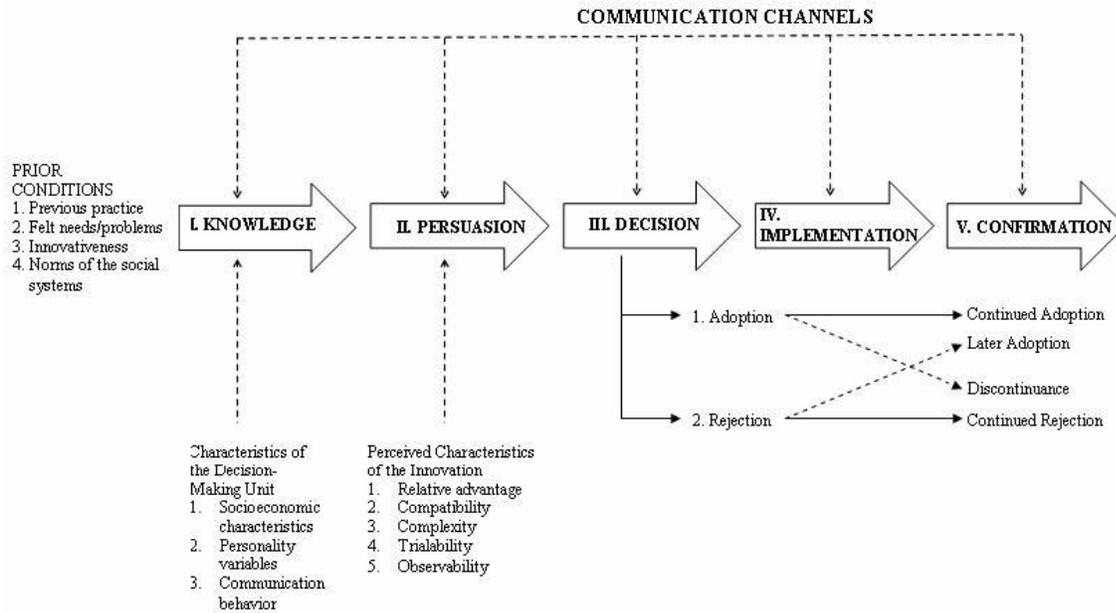


Figure 1. A Model of Five Stages in the Innovation-Decision Process (Source: Diffusion of Innovations, Fifth Edition by Everett M. Rogers. Copyright (c) 2003 by The Free Press.)

Rogers (2003) does not view all adopters under the same classification. He created categories with specific percentages tied to the groups which were titled innovators, early adopters, early majority, late majority, and laggards. A diagram of the adopter categorization can be viewed in figure 2 below.

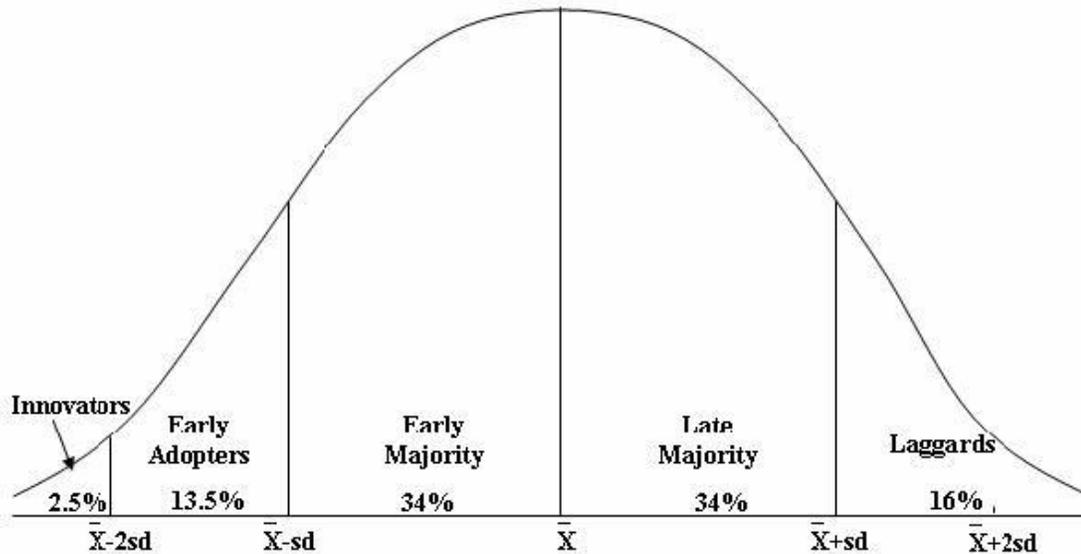


Figure 2. Adopter Categorization on the Basis of Innovativeness (Source: Diffusion of Innovations, fifth edition by Everett M. Rogers. Copyright (c) 2003 by The Free Press.)

Rogers' DoI theory is an appropriate theoretical framework to use for investigating the adoption of technology in the post-secondary field (Medlin, 2001; Parisot, 1995), and has been used in research covering OER (Lund Goodwin, 2011; Coleman-Prisco, 2017; Haymen, 2018;). Rogers (2003) defined technology as “a design for instrumental action that reduces the uncertainty in the cause-effect relationships involved in achieving a desired outcome” (p. 13). OER should be looked at as an innovation to the profession of academia (Jhangiani, Pitt, Hendricks, Key & Lalonde, 2016) and DoI will allow a lens to assist in identifying and addressing the barriers faculty face to using OER. To determine if the innovation of OER usage is right for a faculty member, they can follow the Model of Five Stages in the Innovation-Decision Process, outlined in figure 1 above. At stage one, a faculty member can determine what knowledge they currently have regarding the topic of OER, at stage two, faculty can determine what persuasion occurs to determine their decision to use OER, and after making the decision to use of OER, does the faculty member confirm they made the correct choice by using OER?

Following the Model of Five Stages in the Innovation-Decision Process will help uncover barriers and solutions to barriers of using OER. Throughout the research, instances of the knowledge and persuasion were examined from the five steps of the decision-making process, as outlined in figure 1 above.

Chapter 2: Literature Review

The literature review examined research into the general topic of OER in the post-secondary education system published between 2000 and 2019. The data starting date of 2000 was selected to capture the past twenty years of history, which aligns with the timeframe of the terms open content being introduced in 1998 (Wiley, 2014) and OER being introduced in 2002 (UNESCO, 2012). While the studies primarily focused within North America, some international studies were identified and included. A variety of search terms were used, such as Open Educational Resources, OER, OER barriers, OER faculty perception, and benefits of OER. In addition to using the Royal Roads University Library search engine and Google Scholar, I also posted public messages on the social media platforms Twitter and LinkedIn, asking for scholarly articles on the topic of OER barriers.

The literature review section has been broken down to provide an overview of the Ontario post-secondary education system, a high-level overview of OER, the challenges and risks to using OER for faculty, and the positive impacts OER has on students and faculty.

The Ontario Post-Secondary Education System

Within the country of Canada, the responsibilities for higher education are handled at the provincial level of government (Department of Justice Canada, n.d.). The province of Ontario has 24 colleges and 21 universities that are publicly funded and regulated by the Ministry of Training, Colleges and Universities (MTCU). Universities within Ontario offer undergraduate degrees, graduate degrees, co-op programs, and professional programs, while colleges offer certificate programs, diplomas, apprenticeships, and degrees (MTCU, 2012).

Open Educational Resources in Post-Secondary Education

Throughout Canada, several post-secondary educators have successfully implemented Open Educational Resources (OER) into course curriculum (McGreal, Anderson & Conrad, 2015). OER can be created in a variety of digital formats, including e-books, videos, imagery, simulations, and text-based content (Bates, 2016) and non-digital formats such as printed textbooks (Allen, 2010). The development of OER typically follows some or all of the five core principles of publishing open content. These principles include allowing the material to be re-used, re-distributed, revised, re-mixed and retained (Hilton, Wiley, Stein, & Johnson, 2010), and the published OER is often licensed using Creative Commons (DeRosa & Jhangiani, 2017). Creative Commons licenses allow the owners of content to create explicated terms to the use of their material and allow others to re-use or build upon their work while following the terms of the license. The specific license that is selected determines if the material can be used for commercial purposes (Creative Commons, n.d.).

In fall 2018, the Open at Scale initiative was launched through eCampusOntario. Open at Scale was a targeted approach to OER development, focusing on a specific discipline and determining high-impact courses through consultation with academic leadership teams and faculty (eCampusOntario, n.d). The Open at Scale – Business OER project began with the goal of creating OER and ancillary resources for the following courses (eCampusOntario, 2019b):

- Business Fundamentals / Intro to Business
- Business Mathematics
- Business Communication / Professional Writing
- Intro to Marketing
- Intro to Human Resources

- Financial Accounting / Intro Accounting
- Intro to Business Computing
- Organizational Behaviour
- Economics

The first step was creating ancillary resources for the business communication and business fundamentals courses, as an open textbook was adapted the year prior by Ontario faculty members through eCampusOntario funding. Through eight months of project planning, promoting the use of OER and creating ancillary resources for two open textbooks, eCampusOntario reported \$581,146.07 of projected savings from 6/24 Ontario Colleges for the 2019/2020 academic year (eCampusOntario, 2019c). On August 7, 2019, it was announced that the Open at Scale initiative would be winding down upon the request from the Ontario Government. eCampusOntario was no longer in a position to fund the development of OER; however, they could support institutions by providing expertise, implementation support and project management (eCampusOntario, 2019c).

Faculty and student perception of OER.

The perception of cost and quality were the two major themes that emerged in the literature around the faculty and student perception of OER. Bliss, Hilton III, Wiley, and Thanos (2013), found that students positively perceived OER due to the low to minimal cost of the resources and how easily accessible they were online. Some students reported a negative perception of the technological barriers that could occur while using OER, such as systems not functioning or not understanding how to use the resource. The overall quality and technology used for OER are essential, as Landrum, Gurung, and Spann (2012) mention that if a student does not enjoy or feel engaged by the resources, they are not likely to read it. From a faculty

perspective, saving students money through the use of OER was appreciated; however, a hidden cost of additional time spent to incorporate OER into a course was uncovered. Additionally, faculty found the quality to be equal to their previously used paid textbook, with 60% reporting students equally as prepared, and 30% reporting students were more prepared from previous semesters teaching the course. The strongest endorsement came from 100% of faculty stating they would likely re-use the open textbook in future iterations of the course (Bliss et al., 2013). In a study of university faculty in the state of California, 95% of faculty respondents stated they would be willing to use open textbooks within their teaching practices if they were of similar quality and functionality to traditional textbooks (Harley, Lawrence, Krzys & Dixson, 2010). Important issues that came up frequently included confusing OER with e-books and other digital resources, and not enough general knowledge on the topic of OER (Belikov & Bodily, 2016). Confusion on what OER are, and not enough knowledge about OER could cause misconceptions to faculty.

Benefits and Opportunities of OER

OER provide benefits that impact students and institutions. OER have the ability to remove financial barriers for students through either no or minimal cost educational resources (Coleman-Prisco, 2017) while making educational material more accessible to all learners (Jung, Bauer & Heaps, 2017).

Cost benefits for students and institutions when using OER.

OER have demonstrated a vast amount of financial savings for students (Jung, Bauer & Heaps, 2017). As demonstrating student savings is a significant case in the OER movement (Coleman-Prisco, 2017), several funding agencies publish their total student savings. Colleges and universities throughout North America are reporting the success of learner savings due to

open textbooks (Fischer, Hilton, Robinson & Wiley, 2015) as well as Canadian publicly funded organizations such as BCcampus, Campus Alberta, Campus Manitoba, and eCampusOntario. Campus Alberta's OER initiative was forecasted to save students \$5.5 million (Campus Alberta OER, 2017), while other organizations list live cost-saving figures such as BCcampus' \$11,898,747 (BCcampus, 2019), eCampusOntario's \$4,606,368 (eCampusOntario, 2019a), and Campus Manitoba's \$370,702 (Campus Manitoba, 2019). These cost savings not only benefit the students but also motivate faculty to use OER for the benefit of all learners (Belikov & Bodily, 2016). The cost savings also move beyond just benefiting the student, and onto benefiting the educational institutions as well through improved student retention rates and overall program completion rates (Hilton & Laman, 2012; Hilton et al., 2014). While cost savings has been a common area of focus in past discussions on the topic of OER, research indicates that additional motivators and support measures for educators may be needed to incentivize faculty to create and use OER (Open e-Learning Content Observatory Services, 2012). Faculty may not be willing or able to put the time and effort in to adopting OER, and incentivizing faculty with time, support measures, or other motivators could help sway faculty to using OER.

Accessibility benefits to using an OER.

One of the additional benefits aside from cost savings is accessibility. Through the use of an OER, students are provided with day-one access to textbook content (Coleman-Prisco, 2017; Jaschik & Lederman, 2018; Jung, Bauer & Heaps, 2017) without having to wait for funds to purchase a textbook or a shortage in textbook supply at the campus bookstore (Coleman-Prisco, 2017). Post-secondary institutions are becoming more aware of the importance of ensuring accessible learning materials, and OER have benefits to learners (Jung, Bauer & Heaps, 2017), such as the flexibility to access the resources on a variety of devices and printing at a low cost

(Allen, 2010). While there are several positive aspects of accessibility, barriers do occur as well. Access to reliable internet services and inadequate computer software and hardware can negatively impact the students' experience when using OER (Mtebe & Raisamo, 2014; OECD, 2007).

Barriers and Risks to OER

Accessibility is not the only barrier and risk of using an OER. The funding to create and sustain OER (Atkins, Brown, and Hammond 2007; D'Antoni 2008), awareness and knowledge of OER (Harley, 2008; Panke, 2011), the time and skills required to using OER (Guo, Zhang, Bonk & Li, 2015), and the institutional supports in place to assist in incorporating OER into teaching practices could result in barriers to faculty using OER (Armellini & Nie, 2013).

Funding and sustainability of OER.

Long-term sustainability is a major hurdle that the OER movement must face to be seen as a viable option (Atkins, Brown, & Hammond 2007; D'Antoni 2008). In order for sustainability to occur, a shared employee vision, supported organizational structure (Gunn 2010), institutional OER pioneers, resources (Atkins, Brown, and Hammond 2007), faculty release time (Lund Goodwin, 2011) and financial support are needed (Downes, 2007). D'Antoni (2008) notes the critical role that academic employees play in the adoption and use of OER, providing quality assurance to the content, and assisting learners with using the resource. While academics play a key role, the success of OER depends heavily on incorporating a sustainable publishing model (Allen, 2010). OER publishing models have occurred in a variety of ways, including funding from post-secondary institutions, government, and foundations such as the Hewlett, Mellon, and Gates foundations (Stacey, 2013). Public funding for OER does not typically provide budgeting for ongoing updates. New collaborative approaches are needed

where government and educational institutions come together to set strategic goals (Stacey, 2013).

Awareness and knowledge of OER.

Although efforts have increased in recent years to improve awareness and knowledge of OER (Jung, Bauer & Heaps, 2017), some researchers argue that faculty still require further understanding of the concept of OER. In a study by Belikov and Bodily (2016), 73.9% of faculty from the 161 surveyed expressed statements displaying a lack of understanding about the topic of OER. The study also found that several faculty members could not differentiate OER from free online resources. Not only is an overall awareness to OER in general needed for faculty, but they may also need additional training on OER-related tools, a better understanding of the rules around open licensing and copyright (Guo et al., 2015; Mishra, 2017) and approaches to discovering suitable OER to be integrated into a course (Allen & Seaman, 2016; Jhangiani et al., 2016). Strategies for improving awareness and knowledge on the subject have been identified, such as awareness campaigns on the pedagogical and financial benefits for faculty and students, professional development for employees and institutional support for course development (Lund Goodwin, 2011; Jhangiani et al., 2016). Internal stakeholders that could take the lead on these initiatives include students, librarians, faculty, academic and administrative leadership, and other institutional stakeholders (Jhangiani et al., 2016).

Time and skills required to using or adapting an OER.

The skillset of faculty and the time required to create, adopt or adapt an OER into a course was a common obstacle addressed throughout the literature reviewed (Belikov & Bodily, 2016; Guo et al., 2015; Coleman-Prisco, 2017; de los Arcos, Farrow, Pitt, Perryman, & Weller, 2015; Collis & Strijker, 2003; Jhangiani et al., 2016; Abeywardena, Gajaraj, & Chan, 2012).

Research conducted by the OER Hub reports that two of the top four barriers to using OER are the skill of finding adequate OER and the time required to find suitable resources (de los Arcos et al., 2015). While the ability to find appropriate resources came up several times in the literature, the skill of learning a new technology was also discussed, along with the time commitment involved to become comfortable with the technology (Belikov & Bodily, 2016). With many OER created digitally, technological skills are required. The skills could include using Microsoft Word, embedding links in a learning management system, or creating OER using a tool like Pressbooks or H5P. The time requirements to incorporate OER into a course can be demanding (Coleman-Prisco, 2017), and a lack of incentives can cause obstacles towards the development and use of OER. The requirements of incentives should be put in place to promote the use of OER (Guo et al., 2015). Incentives could include sufficient payment for the hours put into OER adoption (Coleman-Prisco, 2017), faculty release time, or paid educational leave (Coleman-Prisco, 2017; Jhangiani et al., 2016). Not only do faculty not have enough time, but the OER movement may also not be a priority to a faculty member due to other commitments such as working towards tenure and other teaching responsibilities (Belikov & Bodily, 2016). Time to identify and adopt OER features in other ways was mentioned in the literature as well. While Allen and Seaman (2014) found that a common barrier discussed by faculty was the time commitment to evaluating and adopting an OER into a course, Jung, Bauer and Heaps (2017) noted that out of the 136 faculty surveyed, 82% of faculty self-reported that they spent the same or less time preparing to teach a course with an OER instead of a paid textbook.

Support for incorporating OER into teaching practices.

As previously noted, studies have shown that faculty members have a perceived lack of knowledge on the topic of OER, how to use OER, and where to find suitable content. Research

has shown the need to provide support to faculty who are using OER in their course development (Coleman-Prisco, 2017; Atkins, Brown, and Hammond 2007; Belikov & Bodily, 2016; Armellini & Nie, 2013; Jhangiani et al., 2016). Coleman-Prisco (2017) highlights the importance of institutional leadership showing support for OER and taking a top-down approach by filtering support for OER from senior-level management, down to the individuals that would work on the OER. Research has shown that supports are required through institutional funding, IT support (Coleman-Prisco, 2017), teaching and learning centres providing assistance with instructional design (Coleman-Prisco, 2017; Jhangiani et al., 2016), library support in selecting high-quality OER materials (Belikov & Bodily, 2016; Jhangiani et al., 2016) and library or copyright office support for providing support on open licenses and copyright law (Jhangiani et al., 2016). The previously mentioned supports align with Armellini and Nie's (2013) seven areas of support directly related to supporting faculty. The authors offered practical recommendations based on their in-depth analysis of 20 cases of higher education practitioners, which include:

“Identifying relevant OER repositories, especially those containing subject-specific OER, and sharing the benefit of using them through appropriate channels

- Providing guidance on conducting OER-related research effectively
- Developing technical skills in staff, especially in relation to creating multimedia resources in and editing multimedia material created by others
- Developing a deeper understanding of copyright and licensing issues
- Providing guidance on creating OER in appropriate formats and sizes to make the resources reusable by others under suitable licences
- Embedding the above in institutional teaching and learning enhancement programmes
- Enabling a community of OER practitioners to operate and share their work across the

institution.” (p. 18).

In addition to the support, ensuring faculty *feel supported* is an important barrier to overcome, as Belikov and Bodily (2016) discuss an increased likelihood of faculty choosing to adopt an OER based upon the support mechanisms that an institution has in place for the use of OER.

Literature Review Summary and the Need for Further Research

The literature review described an overview of the Ontario post-secondary education system, how OER are used in higher-education, how faculty and students perceive OER, and the benefits of using OER. The literature review also outlined the barriers and risks to using OER, such as the lack of funding and sustainability of OER, inadequate awareness and knowledge of OER, and the lack of support for finding and using OER.

The current literature is mostly focused on North America; however, none of the research I identified was focused within the Ontario college system. I am interested to learn if faculty teaching at Ontario colleges deal with similar or different barriers to using OER, and if there are suggestions to overcome the barriers faculty are facing.

Chapter 3: Research Methodology and Methods

The third chapter of my thesis proposal consists of four sections. First, I discuss the description of the selected methodology for the study, followed by a review of the methods, including the approach to data collection and data analysis. The third section identifies the limitations and delimitations of the research, outlining what the study entailed. The fourth section shares the study's ethical considerations to conclude the chapter.

Methodology

The research used a mixed methods methodology to study the phenomenon of interest in a real-world context (Plano & Ivankova, 2016). As my overarching research question addressed barriers Ontario college faculty face when using OER, critical contextual conditions will affect understanding the experiences faculty face when attempting to use OER, and so it is important to gather different kinds of data. The significance of contextual conditions also appears within the Diffusion of Innovations (DoI) theoretical framework that was chosen for this study. The five steps of the decision-making process within the DoI are knowledge, persuasion, decision, implementation, and confirmation (Rogers, 2003), which will involve a different individual or group context as they each work through the process.

Methods

When selecting a research approach, I reviewed the characteristics of the three main research methods; qualitative, quantitative, and mixed methods research. Methods to analyzing quantitative data originate in the traditional scientific method (Gerdes & Conn, 2001) and rely on statistical procedures (Berrios & Lucca, 2006). Methods to analyzing qualitative data (i.e. non-numerical information) provide a better understanding of the human experience (Berrios & Lucca, 2006), and look at a scenario as a whole, rather than parts (Gerdes & Conn, 2001). Mixed

methods research involves collecting and analyzing both qualitative and quantitative data, providing a more comprehensive understanding of the research problem through both methods (Creswell, 2014).

For my research, I used a mixed methods approach. A mixed methods approach allowed the collection of both open-ended data through interviews and qualitative survey questions, and numerical data in survey questions. If it is assumed that both quantitative and qualitative data have their specific advantages and disadvantages, a mixed-methods approach offered me the opportunity to obtain a broader and more significant understanding of the research problem through triangulating the data to support validity (Creswell, 2014). Through the use of an online survey with open-ended and close-ended questions, and a virtual interview, I was able to learn about the barriers faculty face to using OER. In total, 72 faculty members completed the online survey, providing me short answers of their experiences, and nine of the faculty members participated in interviews expanding on their personal experiences. The survey and interviews complimented each other, providing a more in-depth account of their experiences.

Data collection.

I collected data through three methods to study the phenomenon in its specific context (Creswell, 1998; Holloway & Wheeler, 1996; Robson, 2002; Yin, 1994): an online questionnaire using the LimeSurvey platform, individual screen recorded interviews through the Zoom video-based conferencing application, and reviewing the most recent academic plans, business plans, and strategic plans posted on all 24 Ontario colleges corporate website for references of OER to determine if OER are within their strategic vision. The previously mentioned approach resulted in collecting data that was naturally occurring (observation) or generated (interviews) (Ritchie, 2014). The online questionnaires consisted of open-ended and closed-ended types of questions,

with all data being saved and transmitted through a server located within Canada. In order to attract participants for the survey, an invitation email was sent to 12 institutions to distribute to their business faculty. Invitations were only sent to 12 out of the 24 colleges due to the limited timeframe to complete this project. The REB and institutional approval process took longer at some institutions, and I decided to move ahead with the institutions that had provided approval by May 22, 2020. Additionally, eight messages were posted on my Twitter and LinkedIn accounts, encouraging Ontario business faculty to participate and spread the word about the research opportunity. At the end of the survey, participants were asked if they would be willing to take part in a 30-minute interview. My original goal was to interview a maximum of 10 faculty, and 9 were interviewed for this study. The faculty were from small, medium and large colleges throughout the province, and provided insight to what faculty experience within different institutions. The in-depth interviews allowed me to focus on the faculty member and learn more about their specific experiences and perspectives. The interviews allowed faculty the opportunity to discuss the barriers faced within their particular teaching practices, which uncovered the complex issues faculty members face when attempting to use OER.

As part of the questionnaire, faculty were asked several questions, including but not limited to: their name; institution(s) they teach at; how long they have been teaching within the higher education system; specific subject area(s) that the faculty teach in; preferred gender identity; their role in selecting teaching resources for the courses they teach; if they were aware of OER; if they were using OER in their teaching practices; What prompted their use of OER; which type of OER they were using; do they find the quality of the OER to be worse, better or equal to publisher resources; does their institution promote the use of OER; what institutional supports are available at their institutions for assistance with open educational resources; and

what barriers they face with using OER (See Appendix B). The question types were a mixture of predetermined options through a drop-down or radio buttons, and open questions with textbox fields. Interviews occurred through the Zoom platform and consisted of faculty giving detailed accounts of the barriers they faced to using OER within their teaching. In order to gain a perspective of a person's points of view, it was important to have an in-depth conversation with them (Burgess, 1982). Based on the initial survey data, key themes were identified and used as a guide for the unstructured in-depth interview (Ritchie, 2014). Participant were guided through the interview process, following the six stages of the interview process (Ritchie, 2014). These stages walked the researcher and participant through the entire interview process and included: the arrival, introducing the research, beginning the interview, during the interview, ending the interview, after the interview (See Appendix D).

The specific time of conducting the research impacts the overall effectiveness and results of any study (Ritchie, 2014). It is therefore important to note that faculty were surveyed and interviewed during the winter 2020 and Spring 2020 academic semesters. Thus, faculty reflected upon the fall 2019 semester and provide details of the barriers they faced with adopting OER. The research was originally intended to be conducted during the winter 2020 semester; however, the timeline was slightly shifted due to the impact of the COVID-19 global pandemic. The pandemic impacted how quickly I could complete work, resulted in a slower REB approval process, and with the increased workload for faculty, may have resulted in less faculty agreeing to participate in the survey and interview.

Data analysis.

The qualitative data was analyzed using a thematic approach. Thematic analysis is a flexible and common data analysis method for analyzing and identifying codes and themes

within qualitative data (Clarke & Braun, 2017). Through a thematic analysis, researchers are able to do more than just summarize the data collected by interpreting specific features of the data that align with the overarching research question (Clarke & Braun, 2017). Upon collecting and analyzing the qualitative survey data and the transcriptions of the interviews, the data was broken down into specific codes and themes. Clarke and Braun (2017, p. 297) state:

“Codes are the smallest units of analysis that capture interesting features of the data (potentially) relevant to the research question. Codes are the building blocks for themes, (larger) patterns of meaning, underpinned by a central organizing concept - a shared core idea. Themes provide a framework for organizing and reporting the researcher’s analytic observations.”

I started by highlighting text within the data and using keywords to code the data within the NVivo software. I re-read both the survey and transcripts several times, each time discovering new codes, or similar codes that could be combined. After the coding was complete, I then looked for similarities and grouped codes together into themes, such as barriers to using OER, solutions to overcome the barriers, supports available for OER use, and how faculty first learned about OER.

Quantitative data was analyzed using a cross tabulation approach. Cross tabulation is a commonly used analytical tool for quantitative data due to its characteristics of being able to establish the associations between two variables (Greasley, 2008).

From a technical standpoint, the survey data was exported from LimeSurvey, and the interviews were exported from the Zoom application and stored on a secure local computer following each interview. Interviews were automatically transcribed using the Otter application and then edited and reviewed by both the interviewer and interviewee for accuracy. Both the

Zoom and Otter applications are based in the United States of America. The final data was managed through the NVivo Pro 12 software application by QSR International. NVivo Pro 12 was designed to work with qualitative and mixed methods data of virtually any source and has the ability to categorize and analyze information, as well as create visualizations of data (QSR International, n.d.). Following the interviews, all of the data was stored on a secure local computer and backed up on an external hard drive.

Limitations and Delimitations

The scope of the study focused on a predetermined group (Nunes Silva, 2008), consisting of Ontario college faculty teaching within a business-related program. Ontario college business faculty were explicitly picked due to my role in the Open at Scale – Business OER initiative from eCampusOntario, which created and promoted OER for first-year business courses. Due to the time constraint of the MALAT thesis, only faculty teaching within a business-related program were considered for this research, and only one single point of data collection will occur. REB and institutional approval took longer than expected, but was received from 12 out of the 24 colleges in Ontario, in the timeframe needed to complete this thesis. The 12 colleges that participated in the study vary in size and location, and I believe still depict a sufficient sample of what barriers Ontario college faculty experience when attempting to use OER.

Limitations of the study included unequal representation of all faculty teaching within different subjects in the Ontario college system, as respondents included a significant representation from Conestoga College. It is unknown what prompted the large response rate from Conestoga College. While the survey had a high response rate from Conestoga College, the faculty interviewed were mostly from different schools and captured each faculty members unique experiences at their institutions. This study was specifically focusing on business-related

programs and excluded all other subject areas that may be experiencing barriers to using OER within their teaching. This study also did not consult with institutional administration, who may have additional insights to share on the barriers faculty experience to using OER. Finally, the specific context of the study impacts its findings. The same study in a different province or country may lead to different research findings.

Ethical Considerations

The research adhered to the standards described in Royal Roads University's research ethics policy (Royal Roads University, 2011), and was subject to ethics approval from Royal Roads University, Ontario Colleges through the Ontario Community College Common REB application form, and through each participating Ontario college REB.

The research was of minimal risk to participants and participants had the ability to give consent to withdraw their participation and their data at any time throughout the data collection process, as outlined in the Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, & Social Sciences and Humanities Research Council of Canada (2018, p. 22). Data was collected in a secure format and made openly available to the public upon completion, in accordance with the Tri-Agency Statement of Principles on Digital Data Management (Government of Canada, 2016). The survey was administered using the LimeSurvey application, hosted on a Canadian server and interviews were conducted over the Zoom video conferencing service, with screen sharing software used to record the conversation on my local hard drive, which is password protected. Otter, an automated transcription technology, was used to transcribe the audio to text. Individual's responses are reported here anonymously. The invitation to participate, survey questions, and survey data are made available in the appendices of this thesis.

In order to generate a more significant number of survey respondents and individuals interested in taking part in interviews, an incentive to participate was purchased (Ritchie, 2014). Two \$50 Amazon gift cards were purchased for randomly drawn prizes for one individual that participates in the survey and one individual that participates in the interview.

Chapter Four: Results

The primary purpose of this study was to uncover the barriers that faculty face when adopting OER into their teaching practices, and possible solutions to overcome the identified barriers. The two research questions were:

- What are the current barriers identified by faculty members to using OER?
- What strategies do faculty report as solutions to help them address the barriers to using OER?

Demographic

Seventy-two individuals completed the survey. These were faculty teaching in business-related courses at 12 out of the 24 colleges in Ontario. It is unknown how many faculty members received the invitation to participate in the study, due to each school sending out the participation emails to their own internal mailing lists, and other faculty coming across the invitation to participate on social media. The table below outlines the number of participants from each institution.

Table 1

Number of Respondents by Institution

Institution	Number of Respondents	Percentage
Algonquin College	1	1.39%
Cambrian College	4	5.56%
Conestoga College	27	37.50%
Confederation College	2	2.78%
Durham College	9	12.50%
Fanshawe College	9	12.50%
George Brown College	1	1.39%
Georgian College	5	6.94%
Loyalist College	4	5.56%
Northern College	1	1.39%
St. Lawrence College	5	6.94%
Seneca College	4	5.56%

Due to time constraints in completing the institutional REB processes, the REB approval process was not completed at Canadore College, Centennial College, Collège Boréal, Fleming College, Humber College, La Cité, Lambton College, Mohawk College, Niagara College, St. Clair College, Sault College, and Sheridan College. The response rate from each institution may have been impacted by the global pandemic that was occurring during the study. Several faculty members were in the process of transitioning their material to remote or online delivery throughout the time of the data collection.

Of the 72 faculty that responded, 36 were full-time faculty, 19 were part-time, 14 were partial-load, two were sessional, and one individual chose not to identify.

Table 2

Teaching Status of Respondents in the Fall 2019 Semester

Teaching Status	Count	Percentage
Full-time	36	50.00%
Part-time (1 to 6 hours per week)	19	26.39%
Partial-load (Over 6 and up to 12 hours per week. In union)	14	19.44%
Sessional (Over 12 hours and up to 18 hours per week)	2	2.78%
No answer	1	1.39%

The survey data showed a diverse representation of years teaching, gender, and the age of the respondents, as outlined in Table 3, Table 4, and Table 5.

Table 3

Number of Years Respondents Have Taught in the College Sector

Years Teaching	Count	Percentage
Less than 1 year (A1)	8	11.11%
1 year to 3 years (A2)	17	23.61%
3 years to 5 years (A3)	11	15.28%
5 years to 10 years (A4)	15	20.83%
10+ years (A5)	21	29.17%

Table 4

Gender of Respondents

Gender	Number of Responses	Percentage
Female	45	62.50%
Male	25	34.72%
Transgender	0	0.00%
I prefer not to answer this question	2	2.78%

Table 5

Age of Respondents

Age	Number of Responses	Percentage
20-29	1	1.39%
30-39	12	16.67%
40-49	21	29.17%
50-59	18	25.00%
60-69	15	20.83%
70-79	2	2.78%
80-89	0	0.00%
No answer	3	4.17%

Before completing the survey, 58 of the survey respondents were aware of OER, 13 were not aware, and one respondent chose not to answer the question. While 58 were aware of OER, only 31 had previously used OER within their teaching practices, with 40 never using OER before and one person not answering the question. Thirty-six faculty members reported planning to use OER within the next year, 26 not planning to use OER, and 10 choosing not to answer the question. The faculty that are using OER are using a wide variety of types, including images, videos, open textbooks, websites with openly licensed content, ancillary resources, wikis, and simulations.

Out of the 72 survey respondents, nine faculty members agreed to participate in a follow-up interview, and all were interviewed. Background on the nine people that were interviewed can be found below in Table 6.

Table 6

Background Information on Interviewees

Interviewee	Teaching Status	Years Teaching	Previously aware of OER	Has used OER
Interviewee 1	Part-time	1 to 3 years	Yes	No
Interviewee 2	Partial-load	Less than 1 year	Yes	Yes
Interviewee 3	Partial-load	Less than 1 year	Yes	Yes
Interviewee 4	Partial-load	10+ years	Yes	Yes
Interviewee 5	Full-time	10+ years	Yes	Yes
Interviewee 6	Full-time	1 to 3 years	Yes	No
Interviewee 7	Partial-load	10+ years	Yes	Yes
Interviewee 8	Full-time	5 to 10 years	Yes	Yes
Interviewee 9	Full-time	10+ years	Yes	Yes

Themes

The themes that emerged upon analyzing the survey and interview data are outlined in

Table 7.

Table 7

Themes from Data Analysis

Theme	Description
Introduction to OER	How faculty members were first introduced to the topic of OER and why they chose to use OER.
Course material selection	Who is responsible for selecting the material for the course(s) the faculty member teaches?
Supports for OER use	What institutional supports are available to help faculty with using OER.
Encouragement to use OER	What positions within the institution encourage faculty to incorporate OER into their teaching practices?
Barriers to using OER	What specific barriers have faculty faced when attempting to use OER?

Theme	Description
Solutions to overcome OER usage barriers	What solutions were discussed to overcome the barriers faculty have faced with using OER?

As each theme is discussed in more detail, data from both the survey and interviews will be used.

Introduction to OER and Reasons for Using OER

The participants reported different reasons for choosing to use OER and their introduction to the concept of OER. Throughout the interviews, faculty reflected on how they were first introduced to OER. Faculty learned about OER through onboarding and training sessions within their teaching and learning centre, eCampusOntario's provincial Technology and Education Seminar and Showcase and funded OER development opportunities, professional development, material reviewed within their master's degree, and from their program lead. Interviewee three described their experience looking into OER, after being asked by their program lead. Interviewee three stated:

Essentially, I was asked to take a look at it. I did a little bit of research in terms of what was available for OER, just so I understood what we were talking about. And then I did a little bit of work with a member of our Teaching and Learning Centre, just to better understand the direction the college was taking with OER, and how to get access to not just the online textbooks, but additional resources. So, test banks, slide presentations, and Canadian content. So that's when I started doing a little bit more digging into what was available.

Interviewee eight requested my definition of OER, as they were unsure if they had the same meaning to the term OER. After discussing, it became evident that the faculty member looked at content that is freely accessible online to be an OER. After they explained how OER has an open

license associated with the content, the interviewee had a firm understanding of one of the many definitions of OER.

When asked in the online survey what prompted the faculty member to use OER, 30 out of the 72 participants provided responses. The wide range of responses were grouped into themes, which can be viewed in Table 8 below. Faculty chose to use OER due to the content meeting the needs of their learners, cost savings, the OER already being a requirement within their course, encouragement from administration, and learning about the benefits of OER within formal and informal settings.

Table 8

What Prompted the Faculty Members Use of OER?

Prompt	Number of Responses	Percentage
Content (Suitable, Engaging, Supplemental, Value)	10	27.03%
Cost Savings	7	18.92%
Course Requirement	4	10.81%
Students not buying textbooks	4	10.81%
eCampusOntario	3	8.11%
Administration Encouragement	3	8.11%
Formal Education	2	5.41%
Accessibility	2	5.41%
Expand teaching practice	2	5.41%
Total	37	100.00%

One faculty member responded to the question by stating:

I teach in a program that is made up of 100% international students. It didn't matter what we seemed to do - they would not purchase required texts. Students were actually failing because they would refuse to pay for a text.

Due to the student success rate dropping, and the faculty member having empathy for their students, the professor chose to stop using a paid textbook within their course and started using OER to ensure all of the students had access to the learning materials.

Course Material Selection

Survey participants outlined several different scenarios in regard to who determines the course resources that will be used within the course, as seen in Table 9 below. While 35% identified that they have the autonomy to choose the resources they use within their courses, several other models emerged within the data. In some cases, a course lead selects the resource, and in other cases, the course lead, textbook selection committee, and the chair work together to determine the resources used.

Table 9

Who Determines the Course Resources Used Within the Course?

Selector	Number of Responses	Percentage
Myself	22	35.48%
Course Lead	10	16.13%
Multiple Faculty members	6	9.68%
Program Co-ordinator and Course Lead	5	8.06%
Coordinator and Course Lead	2	3.23%
Dean/Chair and Course Lead	2	3.23%
Department Coordinator and Faculty Member	2	3.23%
Different for Each Course	2	3.23%
Program Co-ordinator	2	3.23%
Chair	1	1.61%
Chair and Course Lead	1	1.61%
Chair and Program Coordinator	1	1.61%
Course Lead, Textbook Selection Committee, and Chair	1	1.61%
Dean/Chair and Program Team	1	1.61%
Department	1	1.61%
Faculty Members, Coordinators, and Associate Dean	1	1.61%
Program Co-ordinator	1	1.61%
The College	1	1.61%
Total	62	100.00%

With 65% of the situations involving collaboration with peers or a lead/manager, faculty may face barriers when attempting to move to OER if their colleagues or management are unaware of OER, or are satisfied with the current publisher resources that are being used. Interviewee four had encountered such a situation and stated, “When I suggested OER, it took two seconds at the meeting for it to be dismissed. Two seconds. And then we went into different ways of buying material.” The previously stated comment demonstrates that while some faculty recognize the value of OER, others do not and are quick to ignore OER as an option.

While the survey data listed specific roles that were responsible for selecting the course material, some faculty members that were interviewed revealed they were uncertain if they were allowed to use OER, or who would have the final say in using OER within their courses.

Interviewee six stated:

I actually asked my coordinator if we were able to use OER because there is a text that I came across that I think I would like to introduce the next time that I do a review of the course material. I don't know what the impacts are of that. I think it's something I probably need to talk to my chair about, as well as the library resource.

Interviewee two also noted that if faculty members were encouraged to use OER from administration, they could feel more empowered in selecting the resources within their courses.

Encouragement to use OER

Within the survey, faculty were asked which roles at their institution encouraged the use of OER. The data within Table 10 outlines faculty receiving the most encouragement to use OER from support services such as the teaching and learning centre and library, fellow faculty members, and from management within their school office such as a chair, associate dean, or dean. Very few respondents indicated that OER encouragement takes a top-down approach, with only five responses indicating their Vice-President Academic encourage OER use and one response from their president encouraging OER use.

Table 10

Which Roles Encourage OER Use

Position	Number of Responses	Percentage
Teaching and Learning Centre	35	24.31%
Library	28	19.44%
Associate Dean/Dean/Chair	26	18.06%
Fellow faculty members	26	18.06%
Program lead	14	9.72%
Vice-President Academic	5	3.47%
Unsure	5	3.47%
President	1	0.69%
Students	1	0.69%
None of the above	1	0.69%
Policy Maker	1	0.69%
Faculty Support Links	1	0.69%
Total	144	100.00%

Interviewee three described how at their institution, they receive support from both the teaching and learning centre and administration within their school office. Interviewee three stated:

The teaching and learning centre is great. They really support it. They're really engaged with it. From a college perspective, the chair is very supportive of open educational resources. That's where they would like to see some courses go certainly. Once I had done the transition for the Human Resources course, they asked if I would look at the Organizational Behaviour course, which I just started teaching as well. So, there's definitely support for it.

Without encouragement to use OER, faculty may be unaware of the college's stance on the use of OER. Interviewee nine highlighted this fact by stating, "I'm not sure as a college if they're really actively seeking out those types of licenses or agreements to bring in more OER."

My analysis of strategic plans, business plans, and academic plans on each college's website revealed that only four out of the 24 colleges discuss OER within their planning documents. The four institutions are Georgian College, Lambton College, Seneca College, and Sheridan College. OER are listed within their business plans and academic plans. Table 11 demonstrates a commitment to OER at an institutional level, providing a top-down approach to the encouragement of OER use.

Table 11

Institutional Commitments to OER

School	Document	Area OER is mentioned within the planning documents	
Georgian College	Business Plan	Action: Support faculty in the use of varied technology and techniques (e.g., virtual and augmented reality) for Universal Design in Learning.	Success measures: Three new online modules designed and delivered to support implementation of Universal Design for Learning. Baseline established of faculty use of Open Educational Resources (OER); 50 faculty engaged through workshops and online modules on the use of OER.
Lambton College	Academic Plan	Academic Goal: Lambton College will provide access to affordable textbooks to all post-secondary students.	Revised Objective: Continue to advance opportunities for OER’s in a minimum of 3-4 courses.
Seneca College	Business Plan	Initiatives: Expand use of virtual, augmented and mixed reality, real-time collaboration tools and open educational resources.	Commitments: Implement and evaluate, through a Collaborative Inquiry project, the 2018- 19 open educational resource (OER) projects. Issue a second call to fund up to five OER projects for 2019-20.
Sheridan College	Business Plan	Section: Student experience.	Provide free textbooks for students using open educational resources and Library content.
	Academic Plan	Priority: Cement our commitment to polytechnic education by promoting and supporting scholarship, research and creative activities.	We lead the discussion at Sheridan about the changing scholarly communication landscape, such as Open Access (OA) publishing and Open Education Resources (OER), and explore opportunities to implement new models.

Supports to OER Usage

OER support is offered in a variety of ways in the Ontario college system and is located within one or many different departments depending on the institution. Table 12 shows that institutions provide OER support through their teaching and learning centre, library, and through faculty sharing their knowledge on the topic of OER. While close to 90% of faculty were able to identify a support service for OER at their institution, 8.33% were unsure of what support services were available, and 2.78% were not aware of any type of OER support.

Table 12

Support Services Available for OER Usage

Answer	Count	Percentage
Services within the teaching and learning centre	36	33.33%
Services within the library	33	30.56%
Support from faculty with experience in OER	20	18.52%
Unsure	9	8.33%
Compensation and/or release time to move towards the use of OER	5	4.63%
None that they are aware of	3	2.78%
Website	1	0.93%
Policies that don't support students buying texts.	1	0.93%
Total	108	100.00%

The qualitative interviews provided deeper insights into the supports being offered within institutions, as well as at a provincial level through eCampusOntario. Faculty members were able to receive support from individuals within their college library and teaching and learning centre. Interviewee three started researching OER on their own, and then connected with their teaching and learning centre. Interviewee three stated:

I also connected with a member of our Teaching and Learning Centre, to better understand the direction the college was taking with OER, and how to get access to not just the online textbooks, but additional resources. Test banks, slideshow presentations, and Canadian content.

Faculty also receive support and encouragement from their supervisor to use OER. Interviewee three went on to state:

From a college perspective, the chair is very supportive of open educational resources. That's where they would like to see some courses go certainly. Once I had done the transition for the HR course, they asked if I would look at the Organizational Behaviour course, which I just started teaching as well. So, there's definitely support for it.

Not only is support available at the institution, but the government-funded eCampusOntario also offers support through their Ontario Extend program, webinars, and their Open Library. An interviewee that was still learning about OER stated:

I really didn't understand open and Creative Commons licensing until the following January, when I got involved with the empowered educator program through eCampusOntario. One of the modules really focused on curation, Creative Commons licensing, and that's when I probably really started to understand it.

The supports offered through eCampusOntario allow faculty to learn about OER and Creative Commons licenses, find suitable OER, and connect faculty to collaborate on OER initiatives.

While faculty were able to highlight supports available at their institutions and provincially through eCampusOntario, they also experience barriers when it comes to incorporating OER into their courses.

Barriers to Using OER

As part of the online survey, faculty were asked what specific barriers they have faced to using OER. A total of 50 individuals responded, with the responses being broken down into the themes that can be viewed within Table 13 below. The top five themes to emerge from the data were not having or finding suitable resources that met the needs of their course, not having the time to update their course to use OER, a lack of support on how to find and incorporate OER into their courses, no education or professional development opportunities on OER, and a lack of awareness to what OER is. In many instances, a single response overlapped with multiple barriers. For example, a response may indicate that there are no suitable resources, but also no support to help the faculty member find a suitable resource. A total of two faculty noted that they

had not experienced barriers using OER, with one of those faculty members having experience previously using OER, and the other never using OER before.

Table 13

The Barriers Faculty Face While Attempting to Use OER

Barrier	Count	Percentage
No Suitable Resources	26	36.62%
Time	11	15.49%
Support	10	14.08%
Education	8	11.27%
Awareness	4	5.63%
Ancillary Resources	2	2.82%
Internal processes	2	2.82%
None	2	2.82%
Effort	2	2.82%
Compensation	1	1.41%
Encouragement	1	1.41%
Already have suitable material	1	1.41%
Institutional Pushback	1	1.41%
Total	71	100.00%

Many of the same themes emerged within the online interviews, and the following sections will contain information captured from both the survey and online interviews.

No suitable resources.

The most common barrier that faculty faced when attempting to use OER was not being able to find suitable resources to use within their courses. A total of 26 responses mentioned no suitable resources, with two responses listing the lack of ancillary resources available specifically. The participants listed no suitable resources in many different ways, such as not being able to find the resources, no ancillary resources being available, the resources they did find not being of high enough quality, the appropriate material not matching their course requirements, or not being in a Canadian context. Interviewee three discussed the barriers they faced to using an OER that was based on American content. Interviewee three stated:

So definitely the Canadian content was an issue for the human resources OER. It's all American base. So, it could get a bit confusing for the students. When I would direct them to certain readings within the textbook, there were certain sections where I had to say, don't really focus on this, it's more American, I'll give you additional support for the Canadian side. So I had to do a lot of additional research so that they had up to date information on the Canadian content, and it was more because I was building it, I was taking what was available online, because I was very cognizant that I couldn't take it from other textbooks that I had used previously.

While finding Canadian content can be difficult, some courses also need up-to-date content that matches the specific needs of their courses. Two interviewees ran into barriers in these areas.

Interviewee five stated:

So initially, I just couldn't find anything, which is why I decided to create my own. Because we're a little bit of health and we're a little bit of business. In fact, we have trouble just finding paid textbooks that match perfectly. Because we sort of fall under those two categories. So, for me, that's been the biggest barrier.

Interviewee nine was able to provide more detail, outlining the importance of the material matching the context of the course requirements, and ensuring the material is up-to-date and relevant. Interviewee nine stated:

A couple of things. The content definitely is the key one. There is just nothing available for me. I find most of the resources are too general in nature. Not specific. And also, I've not found anything specific, but I also see the dates of the material, and some of the textbooks are from 2010 or 2006. And I'm like, wow. The more current stuff, the stuff that I really want to get my hands on, if it was available as an OER, it would be great. But

the updated materials I find are through the publishers, and of course, the students have to pay for that. At least it's the right content though. It's current, up to date, and relevant.

And, of course, having the publisher's resources is very helpful as well.

Finding suitable OER to use within a course is not an easy task. It takes a lot of time and effort to find and incorporate the resources into the course, which faculty members should be compensated for via time within their teaching schedule for full-time faculty, or financially through contracts for part-time, partial-load and sessional faculty.

Time, effort, and compensation.

From the survey responses, the next most mentioned barrier was time, with 11 responses. One of the survey respondents stated "Time - I barely have enough time to prep for the course with the required materials, never mind searching for OER to use as well.", outlining the time it takes to both find the resources, and prepare the resources to fit into their course structure. Not only does it take a lot of time to find suitable OER, but it also required a lot of time and effort to adapt the OER to meet the course needs, and that time should be compensated for. Another survey respondent stated:

Awareness of how much time it takes to curate an OER. Currently, I think the impression is that there are resources out there that can just be adopted. However, my experience is they require significant editing, customization, and the time is not recognized as to how labour intensive this is. More supports are required in terms of time-release and compensation for partial-load faculty.

The interviews were also able to uncover personal experiences dealing with barriers to time, the effort to incorporate OER into a course, and not being compensated for the required work to shift the materials to OER. Interviewee four stated:

If I want to bring Open Educational Resources into my course, I need to spend extra time in revising and rewriting the course. I'm a part-timer, I don't get paid for that work. I don't have that much time.

Interviewee five was able to provide even more details on their experiences shifting to the use of OER. Interviewee five stated:

And I will tell you, this has been a lot of work. A lot more work than I anticipated. But once I'm in it, I want to finish it, of course. So, when you can't find something that already exists, it's a ton of work to reproduce it.

After being asked to provide more detail on the barriers around the level of work entailed to shift to OER, Interviewee five went on to state:

For me, I was able to negotiate some time on my SWF. Because it's a passion project, and I'm really excited about it, I don't mind putting in the extra hours, but certainly what I was able to negotiate and what it actually is taking, they're not really very close. So, I think that's a barrier for adoption moving forward, right, or for people getting involved, because not everyone's going to necessarily find it a passion project.

The amount of effort it takes to start using OER surprised faculty when they first attempted to use OER. The amount of effort it can take to use OER increases, without the faculty member having support they can leverage from departments on campus, peers, and administration.

Support.

Support was mentioned as a barrier 10 times throughout the survey, and at several different points throughout the nine interviews. The term support can be very open-ended, and within this study, it consists of support services offered by departments such as the teaching and learning centre and library, fellow faculty members providing support through sharing their

knowledge and expertise, and support from administration and faculty in leadership positions to allow other faculty members to attempt to use OER.

In regard to support from departments, faculty are looking for support on how to find suitable resources. One survey respondent stated, “Finding content that is truly 'Open' - it's not always easy to find and it takes a long time to source something that is relevant”. The previously mentioned response made me wonder if more faculty leveraged the library to find OER, if there would be fewer responses stating that there was not suitable content to use. Librarians have expertise in finding suitable resources, and a network of peers they can leverage to help find content. After a faculty member finds a suitable OER, the next step is knowing how to integrate the OER into their course. Support with using OER could come from support departments on campus or fellow faculty members. A survey respondent stated that they were “Unsure of what it is and how to use it... I wish I had more role models in my field. I'd love to help.” Interviewee two had similar issues, requiring supporting determining what is available, how to properly cite the OER, and be able to properly explain OER to their students. Interviewee two stated:

Yeah. And trying to figure out, what am I allowed to use? And what is available for me to use? And what is proper citation mean? And actually, go figure out what the college will allow me to use and not allow me to use? And have them come in and do a presentation to the class so that they all understand it, so that I understand it.

As seen from the statement from Interviewee two, not only was support needed from a support service department or colleague, but also from management to determine what the faculty member is allowed to use. Interviewee one experiences similar barriers with individuals who were responsible for selecting the resources used within the course they were teaching.

Interviewee one stated:

The next barrier would be an administrative barrier. For example, imagine the situation where I found the resources I would like to use, and the textbook that we use is approved by a lead faculty member and the dean's office. It's kind of like, if I would like to teach this course, I am going to use the textbook which is provided by default for the course. I cannot just try teaching the course by saying, "Hey guys, I would like to use something different." I don't think that would actually be feasible.

When the course lead, program lead, and administration support the use of OER, faculty feel empowered to make choices that will impact their learners. Another different type of support that is important to faculty is support with the resources, due to what support they receive from their publishers. A response to the survey stated:

The support we get from the textbook publisher cannot be matched with OER. I am also unaware of the potential legal consequences, which is also another reason why I don't use images not taken by myself on my course sites.

The previously stated response from the faculty member highlights the importance of OER supports for faculty to leverage while using OER, and providing education on the topic of OER.

Education and awareness.

The barriers of education and awareness came up a combined total of 12 times within the survey and was described in detail from four out of the nine interviewees. From an education standpoint, faculty were looking to be taught what OER is, how to find OER, and ways to successfully use OER in their teaching. From an awareness standpoint, faculty described not knowing about OER as an option, and what the college's standpoint was on the use of OER, which overlaps with the support they were looking to receive from management. Faculty that are

brand new to teaching are overwhelmed with information, and not every school introduces faculty to OER during their orientation. Interviewee six stated:

So, then I might also say visibility. It's not something that was brought to my attention; I had to stumble across it. At least at my institution, when you start, it's sort of baptism by fire. And I think that's because of the explosion of international enrollment, but you're not given a nice little package of Okay, here's some resources that you can use. Or here's some common places that you can go. Like even the publisher websites, and so forth. We're not really given any toolset.

Training on open licenses is also needed for a deeper understanding of the use of OER.

Interviewee seven stated:

Number one, anything that's on the web, we just assumed that it's for grabs, we take it. That may not be the case though. But we were never taught about Creative Commons. We were never taught about licensing and copyright.

While the participants were able to discuss the specific barriers they have experienced when attempting to use OER, they were also able to provide insight on solutions they believe could help overcome the barriers they have faced.

Solutions to Overcome OER Usage Barriers

Participants were asked for solutions to overcome the barriers to using OER. Of the 72 participants that completed the survey, 48 individuals shared strategies that could be used to overcome the barriers to using OER. From the responses, themes were discovered, which are presented in Table 14 below.

Table 14

Strategies to Overcome Barriers to Using OER

Strategy	Count	Percentage	Description
Education/Training	11	16.42%	Provide professional development on the topic of OER.
Strategically create high-quality content	8	11.94%	Create high-quality learning resources that follow industry best practices with a workflow that will not overwhelm the course developer.
Awareness	7	10.45%	Communicate about OER.
Provide Time	7	10.45%	Provide time to learn, create, and integrate OER into courses.
Collaboration/Networking	7	10.45%	Building a community of OER developers and users to collaborate and share within their Institution and beyond.
Admin Support / Promotion of use	5	7.46%	Encouragement to use OER from admin, and empowerment for faculty to select resources.
Ancillary Resources	4	5.97%	Find OER that has ancillary resources and improve/create new resources where applicable.
School Policies	3	4.48%	Incorporate institutional policies for OER use and removing barriers in selecting content.
Compensation	3	4.48%	OER developers being compensated for their work by the Institution or government.
Leverage Support Services	2	2.99%	Work with internal departments that support OER.
Collaboration with school decision-makers	2	2.99%	Collaborate with Dean, Program Coordinator, Course Lead, and other faculty members on the use of OER.
Not Applicable/Unsure	2	2.99%	Unsure, or has not used OER before.
Repositories	2	2.99%	Access to repositories that have a feature to search by discipline.
Pilot Project	1	1.49%	Run a pilot project to demonstrate the efficacy of OER.
Student involvement	1	1.49%	Involve students in the creation of OER.
There Are No Barriers	1	1.49%	Faculty member has not experienced barriers when using OER.
Easily integrate into LMS	1	1.49%	Ensure OER easily integrates into Learning Management System.
Total	67	100.00%	

The nine individuals that participated in the online interviews were asked to expand on solutions to overcome the barriers at both an institutional and provincial level. The responses had themes that were consistent with what appeared in the online survey, with more detail. The listed themes below have been merged in certain instances and include data from both the survey and interviews.

Education, training and awareness.

The most discussed solution to overcoming the barriers to using OER was providing education and training to staff on the topic of OER and ensuring that faculty were aware of what OER was. Education and training were discussed in a variety of ways throughout the survey data. The creation of resources to explain how to use, find, and adapt resources, exemplars of courses successfully using OER, and the creation of a professional development course specific to OER were some of the main findings throughout the data. Within the interviews, the interviewees provided more detail on the specific awareness that would support faculty. Interviewee eight mentioned that their institution provides weekly emails to their faculty, and when OER is mentioned, it reminds faculty that there are resources available to use, and the hyperlinks within the email make it easy for faculty to access the resources. Awareness was also discussed through discussions with management, at department meetings, and through conversations with fellow peers that are actively using OER.

With most institutions offering some form of orientation to full-time and part-time faculty, Interviewee two thought it would make sense to introduce OER to faculty once they started their teaching journey. Interviewee two stated, “I think that right off the bat during orientation, there should be a discussion about this. I think we should be made more aware of it

right upfront. That would be really helpful.” Not only could this be done at an institutional level, but Interviewee six discussed how it could be helpful at a provincial level. Interviewee six stated, “If there was some Ontario-wide orientation to teaching, packaging it along with that would help.”

Interviewee one discussed the importance of not only education, but awareness through the promotion of OER. Interviewee one stated:

So, the choice would be some sort of educational, promotional support for faculty in order to teach them how to research these resources. How to use these resources, how to choose the right resource for your course, and some sort of advertisement because I'm not sure whether everybody's aware of OER at all.

Interviewee five discussed in detail the importance of providing more awareness, and how OER is now a part of the curriculum within a formal education setting.

I think people just need to know. I don't know if this relates to this or not, but do you know how many people I have to give an elevator speech about open to? They don't even know. I say OER and they're like, what's that? Recently, a partial load teacher that teaches with me is taking the bachelor of Ed through an Ontario University, and they said, there are two courses on OER, And I was like, Yay! So, I think it has to start there. It has to start with educating teachers so that people know what OER is. And, you know, they kind of shared that. It appears that from their perception that many people don't even know what OER was before taking the course. I just don't think people know what OER is. They just hear maybe free textbook and think, Oh, it's more free labour. But there's just so much more to it. And somehow, we need to figure out how to get that message out.

Awareness of OER to faculty was a significant topic throughout the interviews and survey results, but Interviewee four discussed awareness going beyond faculty members, and ensuring students were also aware of OER. Interviewee four stated:

We need to raise awareness of the importance of OER with students. When the students ask for it, then we have to go that way. When the students refuse to pay that much money for no good reason, then we are obliged to change. I think right now our students have a more positive attitude toward Open Educational Resources.

Awareness of OER can also go beyond informing students and training at an institutional level and can also be discussed at a provincial level. Interviewee three reflected on her experience working with eCampusOntario to learn more about OER that was available for their specific discipline, as well as to learn if it was possible to collaborate with fellow faculty members to improve the resources that were already available.

Strategic high-quality OER development with ancillary resources.

The most discussed barrier to using OER within the survey data was not being able to find suitable OER, making the creation of strategic high-quality OER with ancillary resources an obvious solution to the barrier's faculty face. Faculty would like to create OER on topics that do not currently have quality OER available or add on to the material by developing ancillary resources such as slide decks and assessments. In order to ensure our learners feel they are being presented with adequate educational materials that use instructional design concepts, we need to work on creating more robust OER. Interviewee seven discussed this by stating:

The material that we offer needs to be of high-quality for the readers to take it seriously and to interact with it. If I'm reading text page after page without really interacting with it, chances are I'm not really engaged, and I'm not really paying attention to the words in

front of me. So, we need to bring in active learning strategies into our OER, or it's not going to work. You may have come across instances where the reader is passively staring at their screen, but not necessarily processing the information for short-term memory and later on processing it for memory retrieval. So again, integrating the active reading strategies. If we want students to read, we need them to be actively engaged.

In regard to content creation, responses from the survey and interview discussed the importance of going beyond traditional text and imagery, and using rich, interactive tools that provide videos, story-based lessons, and skill-building activities for formative assessment. In order to create high-quality material, Interviewee seven discussed the process they envisioned.

It goes back to hitting the content, the quality, and the design, all at the same time in one resource to really make it worth the user's time and attention. I think by assigning a team that would collaborate, one subject matter expert, one instructional designer, and one content developer and designer, we would have the ideal combination of a team to work on any OER material.

Interviewee seven discussed the importance of creating high-quality material, but also emphasized ensuring the project consisted of a team of experts that could provide support throughout the project. Providing time, support, and compensation was another theme brought up by the participants.

Time, support and compensation.

In order to integrate OER into a course or create OER, it takes time, involves support from departments or fellow employees, and should involve being compensated through a full-time employees SWF, or a contract for the various forms of part-time faculty.

Within the survey responses, faculty members discussed being provided time to learn about OER, searching for the appropriate OER, and adapting the OER to meet the specific needs of their course. With faculty being busy throughout the semester while they are teaching, one survey response suggested providing specific time to learn about OER outside the regularly scheduled semester. While time was discussed as a barrier by many of the interviewees, a solution to overcoming the barrier of time was not discussed in detail. Interviewee four briefly mentioned time, but discussed the importance of support in more detail by stating:

I think we need a dedicated group. We need time. I think it's the practical things. People have different responsibilities now. We have people in the library who teach you to use Microsoft Teams. There are people who teach you to use different educational technology and collaboration tools, but I don't think we really have the team that empowers people to create OER. We need a dedicated group of people who can stop doing whatever they're doing for a while and create OER. Or if they have done it, come and showcase it to others. We need early adopters, we need keeners, and we need to put them together.

From the interviews and survey responses, it appears that most institutions have some form of support available for the use of OER, whether it be grassroots or formal support within a department. Areas such as the teaching and learning centre, library, or faculty within a school office are able to help faculty with the use of OER, and a common solution to overcoming the barriers to OER use was leveraging these departments for assistance. Interviewee seven provided specific examples, stating:

We are choosing and picking our priorities. And if it's going to cause the faculty more time and effort, that would be a barrier for them. But if the college, departments, and

different schools started talking about OER, and mentioning “here's what's out there, here are the supports that are available for this OER, we can help you modify the open textbook for your courses. Here is a team to help you do that”. Because not everybody is tech-savvy. Not everybody understands how to work with content management systems like WordPress, or open textbooks, Pressbooks, things like that. And the faculty that know how to use the software are also really busy trying to create everything, literally everything from scratch these days. They wouldn't want to have to deal with one more thing on top of everything else that they're dealing with. I think if it is structured and supported into the college system, that would be a huge step in overcoming the barriers we need for support.

Interviewee seven went on to discuss support through different services, incentivizing the OER development process, and support from administration.

I'd say start with the department. Incentivize the use of OER in the department, in specific programs, and then streamline it with support from teaching and learning and instructional designers. Let the faculty know that if you find an OER that you think works for the most part, you have the support from administration to tweak it and modify it to meet your class's needs to the best of your ability, and you're not alone in this. So, it's not that I sent you the link to the OER and this is the end of our partnership you go figure this out on your own.

Support through the promotion of OER is another way for faculty to feel empowered and supported to use OER. Interviewee five discussed the creation of a department to encourage the use of OER and to lead the collaboration of OER projects. Interviewee one believed that administrative encouragement and policies to back up the encouragement would also support

faculty to use OER more. Interviewee one stated, “Some sort of encouragement from management in order to allow the usage of Open Educational Resources or some sort of policy to help faculty with choice of course design with implementation of Open Educational Resources into their course.”

Interviewee nine was unaware of leadership’s role at their institution but believed it might need to come from leadership to increase use. Interviewee nine stated:

I am not sure about the leadership's role or their commitment to OER. I think OER is great. I think it's a fabulous resource for us to utilize. Maybe it does need to come from higher up to actually state that maybe this is a direction we need to take, maybe we need to put more focus into it.

The time to invest in OER, and support for faculty as they work through incorporating OER into their courses are important solutions to overcoming barriers, but faculty also should not have to precariously do this work for free. Faculty should be compensated for the work they complete, either by adding time onto their SWF to complete the work, or by paying the faculty member through a separate contract. Interviewee three described the two different experiences they had, working on integrating OER into two different courses.

Then I guess my only other barrier would be whenever you change your textbook or the resources that you're using for the course; you need to do some curriculum development. So, is that paid or not paid? I mean, maybe that's an opportunity as well. If you want to support it, you need to have some money to allow people to build that content. Or again, to go back to that point of having some sort of resource sharing network. On a personal level, I was compensated for the HR curriculum development I did, but the Organizational Behaviour course development I wasn't because I just used what was

provided to me by another professor. So, whether it's compensated or you're able to access other professors who are sharing. I think that's how you would encourage people to use it.

Interviewee three was compensated for one project where there was a significant amount of work, but within another course, they were able to leverage the work of another faculty member through networking with faculty at a different institution.

Collaboration and networking.

Collaboration and networking efforts were discussed at both an institutional and provincial level in the survey and throughout the interviews. From an institutional perspective, faculty wanted the ability to collaborate and network with peers teaching within their program, and throughout their entire institution. Interviewee one stated:

I think it would be some sort of shared faculty-wide/college-wide network. We need to attract more faculty to create something to participate in this movement because, well, as I have already said, we don't have a lot of resources. Until we have a lot of resources, it's difficult to use them. But once we have a really full range of different resources, really something to choose from, I think it would be more popular.

Interviewee five echoed the importance of making connections with faculty across different schools and programs but noted that it would be helpful to have a system in place to help connect faculty that are working towards the same goals. Interviewee five stated:

I think we still tend to be a bit siloed in post-secondary. We don't even know that there are other people doing the same work we are. So, it's finding those collaborators, even within your own institution and helping other people find support. So, I might have a conversation with one person, and then I have a conversation with someone else like, Oh,

you two people should talk. But not having those people that put the right people together, is a barrier. We don't really have that structure yet.

Not only was Interviewee five able to connect with faculty at their institution, but they were also able to find collaborators on OER development at different institutions. Interviewee five went on to state:

I found collaborators to help me at other institutions. We divvied up the chapters, and that was really helpful in making sure all of the work was completed in a timely manner. I think if I had been plugging away at this by myself or with just one other collaborator, we wouldn't be ready to publish in August. It would have taken years.

While in some cases faculty have been able to find ways to connect with educators teaching at other institutions, others have not and mentioned how impactful it would be to have a way to connect with faculty at other institutions. Interviewee one stated:

To create resources shared by many colleges, we need to create a professional network of educators who can take part in creating something together. In order to promote it, we need to connect different faculties who are interested in this idea from a broad range of different colleges across Ontario. I do not know anybody from other colleges. There are probably other professors that have similar ideas, but I'm just not aware of such a person.

So, I feel alone, and I feel like nobody's interested.

Other faculty have found support in connecting with their peers at different institutions through eCampusOntario. eCampusOntario has also brought faculty from different institutions together to collaborate and share existing resources. Interviewee three discussed their experience by stating:

I also accessed eCampusOntario for additional resources and was put in touch with a faculty member from another college, who literally gave me a ton of resources. They had done all the PowerPoint slides, they had a test bank, and they just openly shared all of it.

It was great.

eCampusOntario not only connects faculty together to collaborate on projects, but they have also funded projects in the past. Interviewee five believes that by funding projects, more people will be interested in taking part in OER projects.

The funding would be big. When I look at BC Campus, and the funding that's coming out of there, and kind of what we had at eCampusOntario and what we don't have now, I think that's a big barrier. Because as soon as there's even small funding, as soon as it's promoted around that, then there's going to be more interest collaboratively. Having that central organization that sort of helps put people together. Which I think eCampusOntario does wonderfully. I think you still need that central organization that's outside your organization, to help put collaborators together.

While eCampusOntario has connected individuals in the past, another strategy put forward was the creation of a provincial network that could share ideas, resources, and come towards having shared learning outcomes to allow for common OER to be used between institutions. Interviewee discussed the ability to share resources by stating:

The only other area that is a bit of concern, which I received help navigating, is the resource network. People sharing resources. So maybe some sort of network of people who are using the resources that can share their material? Obviously, I had built a relationship with a faculty member that shared their resources, but that was kind of a one-way thing. They just provided me with their content. We haven't really gone back and

forth. I'm not sure if that exists, but that would be an awesome opportunity. If I did do a deep dive into something, and I produce something, that I could then share it with somebody else. That would be great. That's an area where I think maybe it could develop a little bit better.

Interviewee seven added even more to the idea, discussing how if courses were more streamlined provincially, it would be easier to share resources among faculty.

Interviewee seven - If Ontario colleges streamlined their learning outcomes for English for Business Communication, for Math, for Chemistry One... I don't think we need to be doing these courses very differently. If you streamline the learning outcomes for all the colleges, then we could come up with common learning outcomes for our specific institutions, and then start using common OER.

Finally, with community of practices being popular within higher education, rather than just having a community of practice within the institution, the idea of having a provincial community of practice was discussed by interviewee eight.

If we had a community of practice within my college, I would learn what other faculty are doing at my institution. But if we had that broader, I could learn what faculty at other institutions are doing. So, having some kind of mechanism that allows us to share.

While eCampusOntario provides support with technology enabled learning to all Ontario faculty, there is no efficient or effective way currently for faculty to easily connect with other faculty who are teaching in similar subject areas.

Chapter Five: Reflections, Conclusion, and Recommendations

This research aimed to identify the barriers that faculty face adopting OER into their teaching practices and strategies that could be used to overcome the barriers of using OER. Based on the mixed methods analysis that occurred within the survey data and interviews, it can be concluded that faculty experience several different types of barriers to using OER.

Research has shown that faculty experience barriers in finding suitable OER (de los Arcos et al., 2015), which was evident when analyzing the results from this study. The barriers could pertain to the skill to search for OER, or there not being OER available for the faculty to use. With a larger percentage of OER being developed in America, an additional barrier to finding suitable OER can be ensuring it meets the needs of a Canadian or Ontarian student. In some instances, the subject will require information specific to the country or province that the student is in, such as learning rules and regulations in the field of accounting.

With the time and effort to incorporate OER into a course being demanding (Coleman-Prisco, 2017), being given faculty release time or a paid educational leave can help support faculty with using OER (Coleman-Prisco, 2017; Jhangiani et al., 2016). Collaborating with administration to allow for compensation through time for full-time employees or a separate contract for contract employees could help eliminate the barrier around time and compensate the individual for their effort. Research into what opportunities are available at an institutional level and within the Ontario College collective agreement could help set a standard for the way that faculty are provided time to complete OER work.

In order to find and use OER, institutional supports and training may be needed. Research has shown that support is needed for faculty who are using OER within their course (Coleman-Prisco, 2017; Atkins, Brown, and Hammond 2007; Belikov & Bodily, 2016; Armellini & Nie,

2013; Jhangiani et al., 2016) and support, training, and awareness came up throughout the conducted research. Faculty may have no or little experience with OER, and would require training on what OER is, how to use it, and exemplars of courses successfully using OER. Belikov and Bodily (2016) discussed 73.9% of faculty from the 161 surveyed expressing statements that displayed a lack of understanding on aspects of OER. Although 80% of the participants in this study were aware of OER, and 68% were aware of open licenses, some of the detailed responses have me questioning of the participants were confused between free content and OER. Not understanding what OER truly are could cause confusion throughout an institution, and awareness and training could help mitigate this issue.

Further research could be conducted to gain an understanding on what causes the previously stated barriers to occur. Questions could be posed to gain an understanding if the barriers are happening at an institutional level, or at the individual level (e.g., is it a breakdown in communication and understanding). For example, would a Dean provide more time on a faculty members SWF if asked by the professor, and could there be OER support offered on campus, but the faculty member is not aware of the supports that are in place.

Solutions were discussed to overcome these barriers. These involve supporting faculty with professional development and awareness on the topic of OER, support services to create and find OER, time and encouragement to use OER from administration, and the creation of collaboration and networking opportunities at an institutional and provincial level. Further research could be conducted if any of the mentioned solutions are attempted at an Ontario college, or if the upcoming recommendations are implemented.

The research findings also indicated how faculty work through the five-step process of the DoI, and that each faculty member may have a different experience based on their setting. As

faculty work through the first step of knowledge, some highlighted the support available at their institution to provide guidance and information on the topic. In contrast, others had to learn about OER independently. As faculty reach the second step, they described ways they had been convinced about the utility of OER. Persuasion to use OER included the cost savings and access benefits to students, and the availability of pre-existing OER that met their teaching needs. Some faculty could have also felt persuaded against using OER when they were informed of the lack of resources available within their teaching topics. Based on knowledge and persuasion, faculty then described working through the decision-making process. Some faculty chose to use existing OER within their courses, while other faculty felt that the current options available did not meet their needs, or they did not have the time available to shift to using new resources. Faculty did not outline their experience in implementing OER, but several faculty did indicate using OER and planning to continue with using OER in future courses.

This study provided insight into the experience that individual business faculty have experienced at 12 out of the 24 colleges in Ontario. Although themes emerged within the data, each individual had unique experiences. In order to break the barriers to OER use, I suggest the following recommendations.

Recommendation 1: Ensure Faculty are Aware and Trained on OER

Ensure all new faculty are onboarding with information on OER, and training on the topic of OER is provided to new and experienced faculty. If institutions shared their onboarding and training material with an open license, it would allow for in-depth resources to be developed and adapted without each institution have to put a lot of time and effort into creating similar material. The information could be shared at a provincial level, through eCampusOntario.

Faculty should also be made aware of the specific OER supports available within their institutions.

Recommendation 2: Support the Creation of High-quality OER

Support the creation of OER at the institution by providing full-time faculty time on their SWF to work on OER development and integrating OER into their courses. For the various forms of contract faculty, provide an additional contract for course development to create and incorporate the OER into their courses. When creating OER, ensure faculty have support services they can leverage with experience in instructional design, using technology, and searching for OER. Finally, provincial funding for OER development could encourage more participation and high-quality development, as seen in the past through eCampusOntario funding, and currently in the province of British Columbia through their BCcampus OER funding.

Recommendation 3: Administrative Encouragement and Support to use OER

Receive encouragement from individuals in leadership roles such as the Dean, Vice-President Academic, and President to use OER instead of paid textbooks when possible. Ensure that support services are in place for faculty to use OER, and track data to show the impact OER use is having at your institution.

Recommendation 4: Include OER in Institutional Planning Documents

Set measurable goals on the use of OER at your institution within the college strategic plan, business plan, or academic plan.

Recommendation 5: Create a Collaborative Network

With each Ontario College having several similar programs and courses, a provincial network to collaborate, develop, and share OER within each discipline could help encourage further OER use, ensure material is up-to-date and accurate, and support faculty who feel like all

of the work is being completed with a siloed approach. Through institutional and provincial support, faculty would have the opportunity to feel more supported with using Open Educational Resources.

References

- Abeywardena, I. S., Gajaraj, D., & Chan C. S. (2012). Searching and locating OER: Barriers to the wider adoption of OER for teaching in Asia. *Regional Symposium on Open Educational Resources: An Asian Perspective on Policies and Practice*. Retrieved from <https://www.researchgate.net/publication/236170461>
- Allen, N. (2010). *A cover to cover solution: How open textbooks are the path to textbook affordability*. Retrieved from http://www.studentpirgs.org/sites/student/files/reports/A-Cover-ToCover-Solution_4.pdf
- Allen, I. E., & Seaman, J. (2014). *Opening the curriculum: Open educational resources in U.S.*
- Allen, I. E., & Seaman, J. (2016). *Opening the textbook: Educational resources in U.S. higher education, 2015-16*. Retrieved from <http://www.onlinelearningsurvey.com/reports/openingthetextbook2016.pdf>
- Armellini, A., & Nie, M. (2013). Open educational practices for curriculum enhancement. *Open Learning, 28*(1), 7–20. Retrieved from <http://dx.doi.org/10.1080/02680513.2013.796286>
- Atkins, D. E., Brown, J. S., & Hammond, A. L. (2007). *A review of the open educational resources (OER) movement: Achievements, challenges and new opportunities*. Report to the William and Flora Hewlett Foundation. Retrieved from <http://www.oerafrica.org/resource/review-open-educational-resources-oer-movement-achievements-challenges-and-new>
- Bates, T. (2016). *Teaching in a digital age: Guidelines for designing teaching and learning*. British Columbia: SFU Document Solutions.
- BCcampus. (2019). *Open textbook stats*. Retrieved from <https://open.bccampus.ca/open-textbookstats/>

- Belikov, O. M., & Bodily, R. (2016). Incentives and barriers to OER adoption: A qualitative analysis of faculty perceptions. *Open Praxis*, 8(3), 235-246. doi: 10.5944/openpraxis.8.3.308
- Bliss, T., Hilton III, J., Wiley, D., & Thanos, K. (2013). The cost and quality of online open textbooks: Perceptions of community college faculty and students. *First Monday*, 18(1). doi:10.5210/fm.v18i1.3972
- Bok, D. (2009). *Universities in the marketplace: The commercialization of higher education*. Princeton, NJ: Princeton University Press.
- Campus Alberta OER. (2017). Campus Alberta OER initiative program evaluation [Report]. Retrieved from <https://drive.google.com/file/d/0B9wIdVxGbvSdZkFzM25GanFuNmM/view>
- Campus Manitoba. (2019). *Manitoba Open Textbook Initiative*. Retrieved from <https://www.openedmb.ca>
- Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, & Social Sciences and Humanities Research Council of Canada (CIHR, NSERC, & SSHRC). (2018). *Tri-Council Policy Statement Ethical Conduct for Research Involving Humans*. Retrieved from <http://www.pre.ethics.gc.ca/eng/documents/tcps2-2018-en-interactive-final.pdf>
- Carson, B. (2019, April 18). Diving Deeper into Open Educational Resources [Web log post]. Retrieved July 30, 2020, from <http://brandoncarson.com/2019/04/18/diving-deeper-into-open-educational-resources/>
- Clarke, V., & Braun, V. (2017). Thematic analysis. *The Journal of Positive Psychology*, 12(3), 297-298. doi:10.1080/17439760.2016.1262613

Collis, B., & Strijker, A. (2003). Re-usable learning objects in context. *International Journal on E-Learning*, 2(4), 5-16.

Creative Commons (n.d.). About The Licenses. Retrieved from

<https://creativecommons.org/licenses/>

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.) [PDF document]. Thousand Oaks, CA: SAGE Publications Ltd.

Cresswell, J. (1998) *Qualitative inquiry and research design: Choosing among five traditions*,

Thousand Oaks, CA: SageColeman-Prisco, V. (2017). Factors Influencing Faculty

Innovation and Adoption of Open Educational Resources in United States Higher

Education. *International Journal of Education and Human Developments*, 3(4), 1–12.

Retrieved from <http://ijehd.cgrd.org/images/vol3no4/1.pdf>

D'Antoni, S. (2008). Open educational resources the way forward: Deliberations of an

international community of interest [Report for UNESCO]. Retrieved from

<http://learn.creativecommons.org/wp-content/uploads/2008/03/oer-way-forwardfinal-version.pdf>

Department of Justice Canada (n.d.). Distribution of legislative powers. Retrieved July 22, 2019,

from <https://laws.justice.gc.ca/eng/Const/page-4.html#h-21>

de los Arcos, B., Farrow, R., Pitt, R., Perryman, L-A., Weller, M., & McAndrew, P. (2015). OER

research hub data 2013-2015: Educators. OER Research Hub. Retrieved from

<http://oro.open.ac.uk/47931/>

DeRosa, R. & Jhangiani, R. (2017). *A Guide to Making Open Textbooks With Students* [E-reader

Version]. Retrieved from

<https://press.rebus.community/makingopentextbookswithstudents/chapter/open-pedagogy/>

Downes, S. (2007). Models for sustainable open educational resources. *Interdisciplinary Journal of Knowledge and Learning Objects*, 3. Retrieved November 26, 2007 from:

<http://www.ijkl.org/Volume3/IJKLOv3p029-044Downes.pdf>

eCampusOntario. (n.d.). What is Open at Scale? Retrieved September 15, 2019, from

<https://openatscale.ca/>.

eCampusOntario. (2019a). *Open Library*. Retrieved from <https://openlibrary.ecampusontario.ca>.

eCampusOntario. (2019b). About. Retrieved from <https://business.openatscale.ca/about/>.

eCampusOntario. (2019c, August 6). Business Ancillary OER now available! Retrieved from

<https://business.openatscale.ca/open-at-scale-business-oer/business-ancillary-oer-now-available/>.

Feldstein, A., Martin, M., Hudson, A., Warren, K., Hilton, J., & Wiley, D. (2012). Open textbooks and increased student access and outcomes. *European Journal of Open, Distance and E-Learning*.

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

Florida Virtual Campus. (2012). *2012 Florida student textbook survey*. Tallahassee. http://www.openaccesstextbooks.org/pdf/2012_Florida_Student_Textbook_Survey.pdf.

Government of Canada. (2016, December 21). Tri-Agency Statement of Principles on Digital Data Management. Retrieved from

http://www.science.gc.ca/eic/site/063.nsf/eng/h_83F7624E.html

Greasley, P. (2008). *Quantitative data analysis using SPSS: An introduction to health and social science*. New York, NY: Open University Press.

Gunn, C. (2010) 'Sustainability factors for e-learning initiatives', *Research in Learning Technology*, vol 18, no. 2, pp. 89_103.

Harley, D. (2008). Why understanding the use and users of open education matters. In T. Iiyoshi & M. S. V. Kumar (Eds.), *Opening up education: The collective advancement of education through open technology, open content, and open knowledge* (1st ed., pp. 197–211). Cambridge, MA: MIT Press.

Harley, D., Lawrence, S., Krzys, S., & Dixson, J. (2010) "Affordable and open textbooks: An exploratory study of faculty attitudes." *California Journal of Politics and Policy* 2, no. 1. Retrieved from <http://www.degruyter.com/view/j/cjpp.2010.2.1/cjpp.2010.2.1.1087/cjpp.2010.2.1.1087.xml>.

Hayman, J. (2018). *Open is an Invitation: Exploring Use of Open Educational Resources with Ontario Post-Secondary Educators* (Doctoral Dissertation). Retrieved from <https://search.proquest.com/openview/eec4f90be3a4ac437362c88bf6854093/1?pq-origsite=gscholar&cbl=18750&diss=y>.

Hilton, J., III., & Laman, C. (2012). One college's use of an open psychology textbook. *Open Learning*, 27(3), 265-272. <http://dx.doi.org/10.1080/02680513.2012.716657>

- 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). 1-18.
- Hilton III, J., Wiley, D., Stein, J., & Johnson, A. (2010). The four 'R's of openness and ALMS analysis: Frameworks for open educational resources. *Open Learning: The Journal of Open, Distance and E-Learning*, 25(1), 37-44. doi:10.1080/02680510903482132
- Hilton, J. III. (2016). Open educational resources and college textbook choices: A review of research on efficacy and perceptions. *Educational Technology Research and Development*, 64(4), 573-590.
- Holloway, I. & Wheeler, S. (1996) *Qualitative research for nurses*. Oxford: Blackwell Science.
- Guo, Y., Zhang, M., Bonk, C. J., & Li, Y. (2015). Chinese Faculty Members' Open Educational Resources (OER) Usage Status and the Barriers to OER Development and Usage. *International Journal of Emerging Technologies in Learning (iJET)*, 10(5), 59. doi:10.3991/ijet.v10i5.4819
- Jaschik, S., & Lederman, D. (Eds.). (2018). Inside higher ed's 2018 survey of faculty attitudes on technology. *Inside Higher Ed*. Retrieved from <https://www.insidehighered.com/booklet/2018-survey-faculty-attitudes-technology>
- Jhangiani, R. S., Pitt, R., Hendricks, C., Key, J., & Lalonde, C. (2016). *Exploring faculty use of open educational resources at British Columbia post-secondary institutions*. BCcampus Research Report. Victoria, BC: BCcampus.
- 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). doi:10.19173/irrodl.v18i4.3120

- Landrum, E., Gurung, R., & Spann, N. (2012). Assessments of textbook usage and the relationship to student course performance. *College Teaching*, 60(1), 17-24.
doi:10.1080/87567555.2011.609573
- Lund Goodwin, M. A. (2011). *The open course library: Using open educational resources to improve community college access* (Doctoral Dissertation). Retrieved from https://research.wsulibs.wsu.edu/xmlui/bitstream/handle/2376/3497/Goodwin_ws_u_0251E_10286.pdf?sequence=1
- McGreal, R., Anderson, T., & Conrad, D. (2015). Open Educational Resources in Canada 2015. *The International Review of Research in Open and Distributed Learning*, 16(5).
doi:10.19173/irrodl.v16i5.2404
- Medlin, B.D. (2001). *The factors that may influence a faculty member's decision to adopt electronic technologies in instruction* (Doctoral Dissertation). retrieved from <https://vtechworks.lib.vt.edu/bitstream/handle/10919/29125/NewCOMPLETE2.pdf?sequence=1&isAllowed=y>.
- MTCU (2012). Go to college or university in Ontario. Retrieved July 22, 2019, from <https://www.ontario.ca/page/go-college-or-university-ontario/>
- Mtebe, J. S., & Raisamo, R. (2014). Investigating perceived barriers to the use of open educational resources in higher education in Tanzania. *International Review of Distance and Open Learning*, 15(2). Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/1803/284>
- OECD (2007). *Giving knowledge for free: The emergence of open educational resources*. Paris: OECD Publishing.

- Open e-Learning Content Observatory Services (OLCOS) (2012). *Open Educational Practices and Resources. Project Report*. Retrieved from http://www.olcos.org/cms/upload/docs/olcos_roadmap.pdf
- Palmiotto, A. (2018, March 30). How OpenStax books are made. Retrieved November 05, 2020, from <https://openstax.org/blog/how-openstax-books-are-made>
- Parisot, A.H. (1995). Technology and teaching: The adoption and diffusion of technological innovations by a community college faculty (Doctoral Dissertation). Retrieved from <https://scholarworks.montana.edu/xmlui/bitstream/handle/1/7545/31762102468715.pdf?s>
e.
- Plano Clark, V. & Ivankova, N. (2016). What is mixed methods research?: *considering how mixed methods research is defined*. In Plano Clark, V., & Ivankova, N. *Mixed methods research: A guide to the field* (pp. 55-78). Thousand Oaks, CA: SAGE Publications, Inc. doi: 10.4135/9781483398341
- QSR International Pty Ltd. (n.d.). What is NVivo?. Retrieved August 09, 2019, from <https://www.qsrinternational.com/nvivo/what-is-nvivo>
- Reed, M., & Cochrane, D. (2013). Student debt and the class of 2013. The Project on Student Debt. Washington, DC: Institute for College Access & Success.
- Ritchie, J. (2014). *Qualitative research practice: A guide for social science students and researchers*. Los Angeles, CA: SAGE.
- Robson, C (2002). *Real world research: A resource for users of social research methods in applied settings*. Wiley-Blackwell, Chichester.
- Rogers, E.M. (2003). *Diffusion of innovations* (5th ed.). New York: Free Press.

Royal Roads. (2011, February 16). Research Ethics Policy. Retrieved from

<http://policies.royalroads.ca/policies/research-ethics-policy>

Royal Roads University. (2019). *Thesis Handbook* [PDF file]. Retrieved from

<http://media.royalroads.ca/owl/media/set/documents/set-thesis-handbook-feb19.pdf>

Stacey, P. (2013). Government support for open educational resources: Policy, funding, and strategies. *International Review of Research in Open and Distance Learning*, 14(2).

Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/1537/2481>

Statistics Canada. *National Graduates Survey (NGS), Student Debt from All Sources, by Province of Study and Level of Study*, Statistics Canada, 5 Nov. 2019,

doi.org/10.25318/3710003601-eng.

UNESCO (United Nations Educational, Scientific, and Cultural Organization). (n.d.). What are open educational resources (OERs)? Retrieved from

<http://www.unesco.org/new/en/communication-and-information/access-to-knowledge/open-educational-resources/what-are-open-educational-resources-oers/>

UNESCO. (2012). 2012 Paris OER Declaration. 2012 World Open Educational Resources (OER) Congress. Paris, June 20-22. Retrieved from

http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/Events/English_Paris_OER_Declaration.pdf

Watson, C. E., Domizi, D. P., & Clouser, S. A. (2017). Student and faculty perceptions of

OpenStax in high enrollment courses. *International Review of Research in Open and Distributed Learning*. <https://doi.org/10.19173/irrodl.v18i5.2462>.

Wiley, D. (2014). *An Open education reader*. Retrieved from <http://openedreader.org/>

Yin, R. K. (2014). *Case study research: design and methods*. London: Sage Publication.

Young, B. 2015. Assessing faculty perceptions and use of open education resources (OERs). In *Creating sustainable community: Association of College and Research Libraries (ACRL) conference proceedings*, 25-28 March 2015, Portland, Oregon. Pages, 40-48.

Appendix A – Survey Questionnaire Background

[Date]

Dear participant,

My name is Brandon Carson, and I am a graduate student at Royal Roads University. For my final thesis, I am examining the barriers that Ontario College faculty experience in using open educational resources (OER) and strategies that are being used to overcome the identified barriers. Because you are an Ontario faculty member that teaches in a business program, I am inviting you to participate in this research study by completing the linked survey.

The following questionnaire will require approximately 20 minutes to complete. There will be a random draw for a \$50 Amazon gift card for responding, and there is no known risk to completing the survey. Your participation in this survey is entirely voluntary, and you may opt-out of any question in the survey.

The survey data will be made available for others to reuse for research purposes. All identifiable data will be removed. The data collected will be made available for future use, and once the data is made publicly available, you will not be able to withdraw their data.

Thank you for taking the time to assist me in my educational endeavours. The data collected will provide useful information regarding the barriers faculty face to using OER and support faculty

with approaches to overcome the barriers. Completion of the questionnaire will indicate your willingness to participate in this study. If you require additional information or have questions, please contact me or my supervisor using the contact information listed below.

Sincerely,

Brandon Carson

Email: Brandon.Carson@royalroads.ca

Phone: 289.404.5059

Supervisor: Dr. George Veletsianos

Email: George.Veletsianos@RoyalRoads.ca

Appendix B – Survey Questionnaire

By selecting "Yes" to question 1 below, you agree to participate in this questionnaire and share your responses with the researcher. You understand and agree with the following:

- Your responses will be collected, analyzed, and shared as part of the researcher's dissertation and any related public presentations or reports
- The researcher will ensure that any personally identifiable information about you will not be shared, and that data collected through this survey will be hosted and protected using encrypted software and hardware.
- There will be no repercussions if you opt out of data collection at any time; however, once the data is openly published it can no longer be removed.
- You are at least 18 years of age.
- You are a faculty member teaching in a business program at an Ontario college.

If you have any questions concerning the research study, please contact the research team listed below.

Thank you,

Brandon Carson

Email: Brandon.Carson@royalroads.ca

Phone: 289.404.5059

Dr. George Veletsianos

Email: George.Veletsianos@RoyalRoads.ca

Definition: Open Educational Resources (OER) are teaching, learning and research materials in any medium – digital or otherwise – that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions (UNESCO, n.d.).

1. I consent to the collection of my responses in this survey (Please note: you must answer this question to move on in the questionnaire).

Yes – If participant selects yes, they will be taken to the first page of the survey

No – If the participant selects no, they will receive the following message: “You have been directed to this page because you selected the "No" answer related to consent for this research. If you have reached this page in error, please begin the survey again and ensure you answer "Yes" to the consent question. Thank you!”

2. What College are you currently primary employed at? [Dropdown with all Ontario Colleges listed]
3. What was your teaching status in the Fall 2019 semester?
 - Full-time
 - Part-time
 - Sessional

4. Which best describes your current course delivery? (Select all that apply)

- Face-to-Face
- Hybrid
- Online
- Other (please specify) [Open textbox]

5. How many years have you been teaching in the Ontario College sector?

- Less than 1 year
- 1 year to 3 years
- 3 years to 5 years
- 5 years to 10 years
- 10+ years

6. What is your preferred gender identity?

- Female
- Male
- Transgender
- I prefer not to answer this question
- Other gender identity preference [Open textbox]

7. What is your age?

- 20-29
- 30-39
- 40-49
- 50-59
- 60-69
- 70-79
- 80-89

8. Other gender identity preference [Open textbox]

9. Were you aware of OER before participating in this research?

- Yes
- No

10. Are you aware of open licenses such as Creative Commons?

- Yes

- No
11. Have you ever used OER in your teaching practices before?
- Yes
 - No
12. What prompted your use of OER? [Open textbox]
13. Did you use OER in the Fall 2019 semester?
- Yes
 - No
14. What courses did you teach in the Fall 2019 semester? Please state which courses used OER and which courses did not. [Open textbox]
15. Do you plan on using OER within the next year?
- Yes
 - No
16. Are there high-quality OER available in your discipline?
- Yes
 - No
 - Unsure
17. Who determines the course resources to be used within your courses? [Open textbox]
18. What types of OER do you use within your courses? (Select all that apply)
- Images
 - Videos
 - Open Textbooks
 - Websites with openly licenced content
 - Ancillary Resources (slide decks, assessments, etc)
 - Simulations
 - Other (please specify) [Open textbox]
 - I do not use OER

19. What support services does your institution provide for OER? (Select all that apply)

- Services within the library
- Services within the teaching and learning centre
- Support from faculty with experience in OER
- compensation and/or time release to move towards the use of OER
- Other (please specify) [Open textbox]

20. Which of the following roles encourage the use of OER at your institution? (Select all that apply)

- Associate Dean/Dean
- Vice-President Academic
- President
- Teaching and Learning Centre
- Library
- Program lead
- Fellow faculty members
- Other (please specify) [Open textbox]

21. What specific barriers have you faced to using OER? [Open textbox]

22. What strategies could be used to overcome the barriers to using OER? [Open textbox]

23. Are you interested in participating in a 20-30 minute online interview?

- Yes
- No

24. I would like to be entered into the draw for the \$50 Amazon Gift card

- Yes
- No

You either indicated that you'd like to be interviewed and/or that you'd like to be entered into the draw for the amazon gift card. To be able to do so I need a way to contact you. Please add your name and email address below: [Textbox that is dependent on answers to question 23 or 24 being Yes]

Appendix C – Interview Background

[Date]

Dear Participant,

As you are aware, my name is Brandon Carson, and I am a graduate student at Royal Roads University. For my final thesis, I am examining the barriers that Ontario College faculty experience in using open educational resources (OER) and strategies that are being used to overcome the identified barriers. Because you indicated that you were interested in being interviewed, I am inviting you to participate in this research study.

I am inviting you to an interview that will require approximately 20 minutes of your time. There will be a random draw for a \$50 Amazon gift card for completing this interview, and there is no known risk to completing the interview. Your participation in this interview is entirely voluntary, and you may opt-out at any time, including declining to answer any question in the interview.

The interviews conducted will be transcribed and will be made available for others to reuse for research purposes. All identifiable data will be removed. The data collected will be made available for future use, and once the data is made publicly available, you will not be able to withdraw their data.

Both the Zoom and Otter applications are based in the United States of America. Data stored on servers based in the USA are subject to the United States Patriot Act, to which US law enforcement agencies have potential discretionary access.

Thank you for taking the time to assist me in my educational endeavours. The data collected will provide useful information regarding the barriers faculty face to using OER and support faculty with approaches to overcome the barriers. Participation in the interview will indicate your willingness to participate in this study. If you require additional information or have questions, please contact me or my supervisor using the contact information listed below.

Sincerely,

Brandon Carson

Email: Brandon.Carson@royalroads.ca

Phone: 289.404.5059

Supervisor: Dr. George Veletsianos

Email: George.Veletsianos@RoyalRoads.ca

Appendix D – Interview Questions

1. Can you tell me about yourself and your experience teaching in the Ontario College sector?
2. When and how were you first introduced to Open Educational Resources?
3. Can you discuss the support systems in place at your institution to using Open Educational Resources?
4. What barriers have you faced when attempting to use OER?
5. Did you find solutions to overcome the barriers to using OER?
6. Have you witnessed other solutions to overcoming barriers to using OER?
7. What supports would you put in place to further encourage OER adoptions at your institution?
8. Can you think of any additional ways to remove barriers to OER usage for Ontario College faculty?