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Education Leadership Portfolio Proposal:

Implementing a framework for Reducing Textbook Costs by Utilizing OER and other Textbook Alternatives in Online Course Development

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Abstract

Costs associated with instructional materials in higher education have steadily increased over the past ten years, negatively impacting many students' ability to pay for the course materials they need (Allen & Seaman, 2016; Bureau of Labor Statistics, 2016). Promising research is emerging about the effectiveness of using open educational resources (OER) and other low or no-cost instructional materials to reduce costs and maintain or improve learning outcomes (Fischer, Hilton, Robinson, & Wiley, 2015; Grewe & Davis, 2017; Hilton, 2016). This education leadership portfolio (ELP) provides a framework for developing online courses using OER and other no-cost resources (referred to collectively as OER hereafter). The framework was piloted with an online, undergraduate nursing course and consists of modifying existing approaches to online course development. Specifically, the framework expands collaboration between department chairs, instructional designers, subject matter experts, and the institution's library. The evaluation component of the framework consists of measuring student performance to determine if performance improves, remains the same, or diminishes when OER are used in lieu of commercial textbooks. Students' overall grade in the course along with a summative research paper grade will be compared between those who took the course with a textbook as the primary resource versus those who took the course using an e-text, OER, and other no-cost resources procured by the library. An independent samples t-test will be used to compare scores and determine if significant differences exist between the non-OER and OER course grades. Student perceptions will be measured by a post-course survey, and faculty perceptions will be measured by a post-course interview.

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Introduction

This Education Leadership Portfolio (ELP) presents the implementation of a framework for incorporating commercial textbook alternatives into the development of online course offerings at Wilmington University. The framework was designed as a multi-unit collaboration, where the instructional design manager (IDM) who oversees the instructional design team (IDT) worked with the College of Health Professions and the university's library to develop online courses that utilize OER or other low or no-cost instructional materials instead of commercial textbooks. The IDT is in a unique position to facilitate the use of commercial textbook alternatives in online offerings, as it is a centralized unit that oversees the design, development, and delivery of all online offerings at the institution.

Further, interest in and use of OER in higher education institutions continues to increase, and many institutions seek to address the rising costs of instructional materials to lessen the financial burden on students (Allen & Seaman, 2016; McKenzie L. , 2017). The use OER is of interest to Wilmington University, as it aligns with key components of institutional priorities that focus on increasing enrollment, strengthening academic offerings, and improving retention.

Definition of OER

As detailed in the Literature Review section (Artifact 1), and as defined by Atkins, Brown, and Hammond (2017), "OER are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or re-purposing by others" (p. 4). Atkins, et. al (2017) identify some types of OER as, "full courses, course materials, modules, textbooks, streaming videos, tests, software, and any

other tools, materials, or techniques used to support access to knowledge" (p. 4). The United Nations Educational, Scientific and Cultural Organization defines OER as follows:

> 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, 2018)

These types of resources are in the public domain or licensed such that users are permitted to retain, reuse, revise, remix, and redistribute the resources (Wiley, 2014).

For the purposes of this ELP, the term OER is used to describe instructional materials that generally meet the above criteria. However, other instructional materials that may not meet narrow definitions for OER were utilized in implementing the framework, including: library database resources, instructor-created video content, YouTube videos, and subject-related websites. As utilizing OER in course development continues, other resources may be used, such as library-procured materials paid for by the institution but offered to students at no cost.

Organizational Context

Mission and Vision

Wilmington University is a private, not-for-profit university chartered by the State of Delaware in 1967 that offers associate's, bachelor's, master's, and doctoral degrees (Office of Institutional Research, 2018). The institution has campuses in Delaware, New Jersey, and Maryland, with a substantial online presence throughout the country as well as students who attend remotely from abroad. Notably, online enrollments comprise at least 44% percent of the institution's enrollments (Office of Institutional Research, 2018). Student demographics trend

toward working adults who attend part-time, however, there is a growing traditional-aged population who attend full-time (Institutional Research, 2018).

The institution's curricula focus mainly on career-oriented degrees among seven colleges, while also striving to provide programs relevant to emerging markets. Thus, the institution's mission focuses on providing relevant curricula in a student-centered educational environment. Supporting the mission, the institution's vision is to provide open-access and innovative educational opportunities to the students it serves (Wilmington University, 2018). The goals of providing educational opportunities for all students, along with providing a high level of attention to students' needs, reflect the general culture of student-centered practices among staff and faculty at the institution.

Demographics

According to the 2016-2017 Wilmington University Factbook (Table 1) compiled in January of 2018, students who identified as female represented about two-thirds of the student population, where males comprised the remaining one-third of the population. Of these students, the majority reside in Delaware, with the remaining domestic population residing mostly in the mid-Atlantic region. International students represented about 10% of the overall population (Office of Institutional Research, 2018). Regarding ethnicity, 48% of students identified as white, 25% identified as Black or African American, and 11% identified as Asian. Data about age indicated that most students are between 18 and 39, with 50% of the students falling between the ages of 25 and 39.

Table 1

Demographic data by enrollment segment

Enrollment Segment	N	Percent
Gender		
Female	12,979	63%
Male	7,501	37%
Ethnicity		
American Indian or Alaska Native	275	1%
Asian	2,281	11%
Black or African American	5,028	25%
Hispanic	529	3%
Native Hawaiian/other Pac. Islander	48	0.2%
White	9,749	48%
Unknown	2,570	13%
Age		
<=24	5,380	26%
25-29	5,105	25%
30-39	5,217	25%
40-49	3,110	15%
50+	1,659	8%
Undisclosed	9	0.4%
State of residency		
Delaware	12,125	59%
Maryland	1,593	8%
New Jersey	3,785	18%
Pennsylvania	1,600	8%
Other	1,377	7%

Table 2 from the Wilmington University Factbook (2018) depicts student enrollments and the cost of attending the institution in tuition alone (i.e., tuition numbers do not include course materials, housing, or other costs). For the 2016-2017 academic year, most students were undergraduate and part-time. For students attending online, 44% took at least one online class; the remaining students attended face-to-face only (Office of Institutional Research, 2018).

Table 2

Combined institutional enrollments by location and tuition costs by level.

Location	**Enrollment %**
Online	44%
New Castle Graduate Center	15%
All other	16%
	25%
Level	**Tuition**
Undergraduate	$8,712
Graduate	$8,388
Doctoral	$11,106

Summary

Overall, the data in Tables 1 and 2 depict an institution that serves a regional, largely domestic student population. The majority of students are non-traditional, working-age adults between the ages of 25 and 39, but there is a significant number of traditional-age students (26%) between the ages of 18 and 24. Seventy-six percent of students work full-time, and at least 10% work part-time (Office of Institutional Research, 2018). Data regarding income and non-academic expenditures were not available, however, retention data indicate that billing holds account for 44% of undergraduates who do not persist in their degrees and leave the institution (Wilmington University Retention Committee, 2018), which suggests that cost is a factor in retaining students.

Comprehensive research about the relationship between retention and textbook costs is emerging. However, recent research published by Senack, Donoghue, O'Connor Grant, and Steen (2016) indicated that of two thousand students surveyed nationally, two-thirds of those students forwent textbooks for their classes due to costs, and 50% indicated that costs affected the number of courses that they could take. Further, 87% of faculty surveyed by the Babson

Research Group indicated that textbook costs were an important consideration in choosing course materials, supporting the notion that textbook costs affect decisions for faculty as well as students (Allen & Seaman, 2016). Thus, given the institution's mission to provide students with a relevant, student-driven education, and its mission of open-access and innovative educational opportunities, implementing OER and other low or no-cost solutions into online courses in lieu of commercial textbooks provides an avenue to support students by reducing the cost of attaining their degrees.

Problem Statement

Online course development at the institution relies too heavily on commercial textbooks. A systematic way to implement OER or other textbook alternatives into online course development is needed to facilitate the reduction of instructional material costs in online courses. As higher education tuition increases, costs associated with commercial textbooks impose an added financial burden on students. Since 2006, college tuition and fees have increased 63% in the United States (Bureau of Labor Statistics, 2016). Commercial textbook costs have also increased during this period (National Center for Education Statistics, 2018). According to The College Board (2018), the average college budgets for undergraduates across public and private institutions books and supplies represent significant expenditures (e.g., $1,250 for private, nonprofit four-year institutions).

However, while textbook costs have generally increased over time, the National Association of College Stores (NACS) (2018) reported that the 2017-18 academic year marked the first year in a decade in which overall spending on course materials decreased. The NACS (2018) also reported that 20% of the students they surveyed downloaded free course materials, perhaps contributing to the current decrease in costs. Nevertheless, a cost gap persists between

what students pay for their overall education and what they could pay based on emerging, low or no-cost alternatives to high-priced commercial textbooks. Reducing some of the financial burden on students by offering alternatives to commercial textbooks represents a way in which the institution can actualize its mission to offer affordable, student-centered education. One key way to bridge this cost gap in the online environment is to implement the use of OER and other instructional materials into the online course development process.

According to internal Online Learning departmental documentation, as of the summer 2018 semester there are over 800 online course offerings. Of those courses, there were about 10% that did not use commercial textbooks. This number is a best guess, as previously the IDT has not officially tracked which courses use textbooks and which ones do not. As the movement toward OER and other resources has gained momentum at the institution, some department chairs have chosen to offer their courses textbook-free or plan to offer them textbook-free in the coming academic year. For example, the department chair for the undergraduate degree in Human Resources Management estimated that students would save over $1,200 if commercial textbooks were eliminated in the curriculum (personal communication, 2018). However, there is no system in place currently to support these efforts from a course development perspective.

Thus, the problem is two-fold. First, the need to lower educational costs for students is a nationally-recognized issue in higher education that also impacts students at Wilmington University. Working more closely with stakeholders during the online course development process is a way to mitigate these costs. Second, implementing an online course development framework specifically for utilizing OER provides an avenue for department chairs to eliminate commercial textbooks.

Improvement Goal

Currently, there is a robust online course development process in place that is managed by the IDT. However, traditionally, much of course development relied on publisher resources that add additional costs for students beyond tuition. The initial phases of the development process lacked a cohesive, collaborative effort to involve all stakeholders in assessing needs and discussing purpose and vision for the online courses as they relate to subject matter and overall fit within curricula. Therefore, the goal of this framework is to utilize the existing instructional design model to pilot an enhanced, collaborative effort between stakeholders in the development process and ultimately produce online courses that utilize OER and reduce costs for students. The sections below detail the current development process, the rationale for the new framework, stakeholders and their roles, resource considerations, and an implementation timeline.

Online Course Development Process

The core framework on which the development process relies is the ADDIE model, an acronym for analysis, design, development, implementation, and evaluation (Elkins & Pinder, 2015; Hodell, 2016). The analysis phase involves collecting information and data about the targeted online course, determining needed resources, and formulating instructional strategies (Hodell, 2016). Traditionally, the design phase involves constructing a rationale, developing objectives, and other pre-development activities (Hodell, 2016). Workflow at the institution places these tasks more in the analysis phase, leaving the design phase for course planning with goals, objectives, and rationales already completed. The development phase consists of the instructional designers working with subject matter experts to develop course materials (Hodell, 2016). During this phase, the instructional designers work with subject matter experts to align goals and objectives, assessments, and instructional resources. Implementation is where the

completed course is delivered to students. It is at this stage that the IDT distributes content from the newly developed courses into online sections. Hodel (2016) noted that the evaluation phase is misplaced in the acronym in that evaluation takes place throughout the development process. This is true for the current approach to course development as well, as each phase follows a linear path toward implementation. However, evaluation is implicit in each development phase and continues beyond the development cycle, necessitating an update in approach to process.

Tables 3 and 4 illustrate the original and revised development models. Key differences are in the approaches to initial tasks, analysis, design, and development represent an improved development flow (Figures 1 and 2). Where the initial tasks were once conducted primarily by the senior director, they now include the instructional design manager and focus on specific programs or individual courses that may benefit from replacing commercial textbooks with OER. The revised analysis phase benefits from improved collaboration with stakeholders, where department chairs, instructional designers, SMEs, educational technologists, and librarians work to establish specific needs and a vision for the course. The design phase, too, benefits from the revision, where the instructional designer, SME, and educational technologists work closely on organizing and designing the learning materials and experiences in course development. For the development phase, the instructional designer works exclusively with developing the content within the LMS. This is another departure from the original approach in that SMEs are not tasked with adding content to the LMS. Further, faculty and student feedback are part of the evaluation process. Faculty are surveyed to get their input on the course design, student engagement with the instructional resources, use of technology, and workload. Students are surveyed about their experience in the courses.

Table 3

Components of The Original Course Development Process Utilizing the ADDIE Model.

Component	Description	Stakeholders
Analyze	Assessing student/program needs, developing objectives/program outcomes, course description and rationale, selecting course materials.	Program Chair, Academic Council, Curriculum Committee
Design	Course sequencing, alignment, teaching strategies, evaluating student performance, technology implementation	ID and SME
Develop	Developing course materials, procuring instructional resources, adding content to LMS	ID and SME
Implement	Deliver content to course sections	ID and IDM
Evaluate	Post-course student/faculty survey	IDM and Program Chair

Note. The current process limits collaboration between the Analyze phase and the remaining phases of the process.

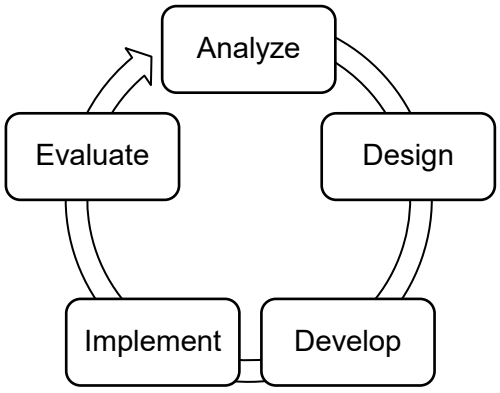


Figure 1. Current process showing the flow from one phase to the next, illustrating a linear path that does not allow for recursive communication and revision.

Table 4

Revised Course Development Process Utilizing.

Component	Existing Stakeholders	Revised Stakeholders
Analyze	Program Chair, Academic Council, Curriculum Committee	Expanded analysis: formalized needs assessment with Program Chair, SME, ID, Library
Design	ID and SME	Program Chair, SME, ID, Library
Develop	ID and SME	ID, SME, Program Chair
Implement	ID and IDM	ID, IDM
Evaluate	IDM and Program Chair	IDM, SME, Program Chair (Library if needed)

Note. The revised process facilitates collaboration between the Analyze phase and the remaining phases of the process.

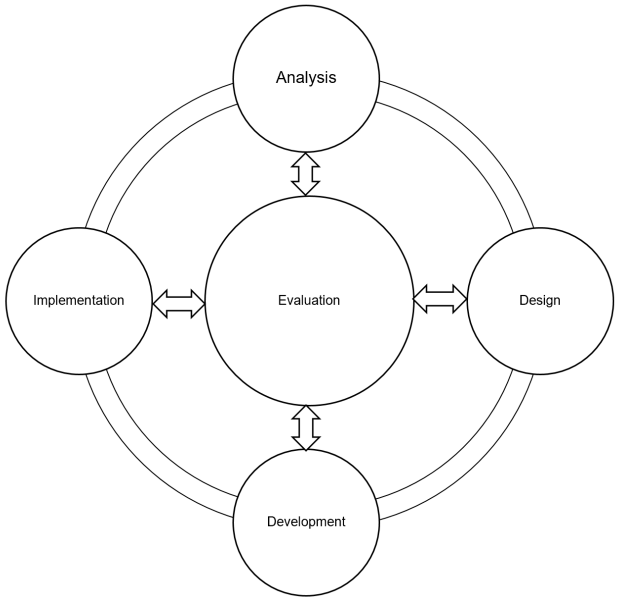


Figure 2. Flow chart of revised online course planning utilizing the ADDIE model with key changes made to the initial tasks, analysis, design, and development components.

Rationale

The rationale for this framework has two components that address a gap between how online courses have been developed in the past and how they can be developed moving forward. First, the ADDIE instructional design model informs much of the structural and project management components of the framework. Previously, the analysis component was completed mostly by program chairs, where they developed certain aspects of their curricula (e.g., identifying learner needs, goals, and objectives) prior to the course development process, leaving further analysis to SMEs and instructional designers. Under the revised development framework, stakeholders worked collaboratively on the design and development of content, including both course planning, acquiring OER.

Second, technology and cognition theory inform the design and development components of the framework, thereby adding a layer of research-based practice to course design. Specifically, constructivist approaches to learning inform the overall learning environment, and the effective use of educational technologies supports the constructivist approach by utilizing the LMS and other technologies as constructive rather than purely instructive tools (Cheung & Vogel, 2013). OER can further support this framework by broadening the scope of educational tools beyond traditional textbooks, thereby providing students with potentially more effective learning experiences via game-based learning, adaptive learning tools, and customizable open-source resources (Chow & Croxton, 2017; Dobler, 2015; Dominici & Palumbo, 2013; Liu, McKelroy, Corliss, & Carrigan, 2017).

Stakeholders

The instructional designer manager works with all stakeholders throughout the planning and development process by organizing meetings, assigning IDs, aligning course content,

ensuring accessibility of course materials, editing course content, facilitating the use of effective technologies, and overseeing the overall design, development, and delivery of the courses.

Subject Matter Experts

Subject matter experts provide expertise in their subject area, and work with department chairs, instructional designers, and library personnel to identify and utilize appropriate OER materials in the course planning and development process.

Program Chairs

Program chairs identify a course(s) they would like to develop or redevelop using OER, hire SMEs for content development, review content throughout development, and approve final online course(s).

Librarians

Librarians work closely with Department Chairs, SMEs, and instructional designers during the planning phase of course development, assisting with the identification of effective OER that align with course objectives and assessments, and create library guides (Lib Guides) for curating OER.

Required Resources

Resources for this project fall within the budgeted development cycle in the Online Learning Department. Additional considerations for other stakeholders relate to time commitment from department chairs to meet regularly throughout the process, and time and labor for Library personnel to meet in the beginning of the process and research OER.

Planning and Implementation Timeline

Planning began in the summer semester of 2018, where stakeholders within the Online Learning Department discussed how we would approach the pilot and identified potential courses that would benefit from utilizing OER. A course within the College of Health Professions (NUR 313: Nurse as Decision Maker) was chosen because about 500 students take the course annually, which provides a large sample size in terms of evaluating student performance. I then worked with the Nursing Chair who was also the SME, and librarians to establish course goals, outline objectives and assessments, discuss textbook alternatives, and revise the end-of-course faculty and student evaluation surveys. Courses were then developed over the summer of 2018 and offered in the fall of 2018. Surveys were incorporated into the course design as activities to be completed in Week 7 of the sections. Data analysis, course revisions, and a follow-up meeting to discuss successful areas of the pilot and areas for improvement take place after the pilot is complete. Findings of the pilot will be presented to the Academic Council. After any final recommendations are made, the Instructional Design Policy and Procedures Manual will be updated.

Table 3

Course development component, dates of completion, and stakeholders involved.

Pilot Component	**Date**	**Stakeholders**
Initial departmental planning meeting	May 2018	Online Learning Department: AVP, Senior Director, IDM
Planning/Needs Assessment	June 2018	Chair, SME, IDM, Librarians
Content planning/development	July – August 2018	SME, ID, Librarian

Initial course offerings	Fall Block 2018	Chair, SME, IDM
Analysis of faculty and student data	January 2019	Chair, IDM
Course revisions	January 2019	SME, Chair, IDM
Follow-up Meeting	January 2019	Chair, SME, IDM, Librarians
Share findings with Academic Council	February 2019	IDM/Library representative
Update Instructional Design Policy Manual	February 2019	IDM

Organizational Role

For the past six years, I have been the instructional design manager within the Online Learning Department, where I lead a team of eight instructional designers. As a unit, we are responsible for the design, development, delivery, evaluation, and maintenance of all online courses offered at the institution. As the institution offers over 130 online programs that consist of over 800 online courses, my work is fundamentally collaborative. I work with department chairs, instructional designers, faculty, and SMEs to design and develop online course content. I work directly with our IT department to deliver content via our learning management system (LMS) each semester, and the design team works to develop and maintain online content. I am also responsible for establishing departmental policy, directing our approaches to instructional design within the LMS, collaborating with the Educational Technology Department, and ensuring that the design team has professional development opportunities to remain current with technology, instructional design best practices, and LMS functions.

Given my responsibilities, I am in a unique position to assist the institution with its OER initiative. In the past, the primary interactions in online course development were between the

SMEs and the instructional designers. Generally, this interaction involved adapting instructional materials and approaches from the face-to-face to online environment – usually including using textbooks as the main source of instructional materials. Within the past two years, some program chairs have requested the use of OER for their courses. As these requests increase, and as the institution moves toward a more OER-centered model for some programs, the need exists to 1) revise the instructional design model used for course development, and 2) begin working directly with the university library to procure and curate OER and other low or no-cost resources for use in online course development. Thus, my responsibility in this effort was to develop a framework for adapting our current instructional design model to include:

- A more robust needs assessment process
- A more collaborative approach in initial planning meetings
- Direct involvement with the Library
- Facilitating any technical requirements for OER integration with the LMS
- Reviewing data security issues with IT
- Effectively incorporating OER into online course design
- Evaluating both faculty and student experiences with OER content and the general online learning experience

This portfolio will contribute to my professional growth in two key ways. First, it will serve to document the process of how my department adapts to the often fast-paced change that occurs in the online learning environment. In the past ten years, I have seen online course offerings advance from relatively flat learning experiences for students, to more robust, technology-rich, and engaging learning environments. This is particularly true for the past five years and is due in part to improved access to and availability of instructional technologies. Second, it allows me to

participate directly in an institutional improvement initiative. Fortunately, the culture of the institution allows for rapid change to meet market and learner needs. Contributing to this change represents an opportunity to highlight my leadership in an area of the institution that directly impacts its growth.

Description of Planned Artifacts

The artifacts detailed in Table 4 follow the chronological order in which this pilot was developed and includes: implementation documents used, data analyses planning, stakeholder reports, and an updated instructional design manual. Collectively, these documents represent the movement of the pilot from the initial idea to a fully implemented process that addresses the problem of commercial textbook costs in online courses at the institution.

Table 4

List of supporting artifacts for the ELP.

Artifact Table

#	Artifact	Audience	Description	Action Steps	Timeline	Status
1	Literature Review	AVP, Senior Director, IDT	Review of relevant literature about OER regarding history, development, significance in higher education, policy, ethics, and impact on teaching and learning online.	Complete prior to beginning ELP.	Summer 2018	Complete

2	Needs Assessment Pre-Development Form	Chairs, SME, Library, instructional designer	Needs assessment that establishes necessary considerations and information about a course prior to moving to the design phase.	Complete prior to beginning pilot.	Summer 2018	Complete
3	Course Planning Document	Chairs, SME, Library, instructional designer	Document used by SMEs to design weekly learning units for online courses – primarily used to establish alignment of objectives, assessments, and instructional resources, but also provides other key information about how the content will be incorporated into the LMS.	Complete prior to beginning pilot.	Summer 2018	Complete
4	Online Course Evaluation Rubric	Chairs, SME, instructional designer	Online course evaluation tool – used as part of the course development process.	Complete prior to beginning pilot.	Summer 2018	Complete

5	NUR 313 Student Perception Survey	Chairs, IDM	Newly developed online courses have a built-in student survey in the last week of class that targets their experience with course design components.	Deployed for Fall 2018 as a part of existing course evaluation process. Need IRB approval for use of ex post facto and interview data from the institution and approval of VP of Academic Affairs	Summer 2018	Complete
6	Student Performance Evaluation	Chairs, IDM	Comparison of course grades for FA2017 sections of NUR 313 that used a textbook and FA2018 sections that used OER. Independent samples t-test will be used to determine if grades for students using OER are statistically different than those who use a traditional textbook.	Need IRB approval for use of ex post facto data from the institution and approval of VP of Academic Affairs	Spring 2019	In process

7	NUR 313 Faculty Perception Survey	Chairs, IDM	Interview of faculty who taught Fall 2018 NUR 313 course using OER.	Need IRB approval for use of ex post facto data from the institution and approval of VP of Academic Affairs	Spring 2019	In process
8	Operational Plan	AVP, Senior Director	Document that details the need for the initiative; part of departmental 3-year strategic plan	Complete prior to presenting 2019 Online Learning Strategic Plan	Spring 2019	In process
9	Department Chair Report	Chairs, IDM	Structured course evaluation report for department chairs that provides data and feedback about newly developed courses. This report will be delivered every semester after new courses first run.	Will complete after data analysis	Spring 2019	In process
10	Instructional Design Policy/Process Manual	AVP, Senior Director, IDM, IDs	Codified process and procedures for online course development.	Currently working on the document	Spring 2019	In process

Artifact 1

Literature Review of Open Educational Resources

Introduction

This literature review explores some of the relevant aspects of utilizing open educational resources (OER) in higher education curricula. Specifically, the literature reviewed focuses on issues that are relevant to developing higher education curricula considering the perceptions and complexities of implementing textbook-free coursework and programs. Key challenges include providing sustainable, relevant OER and other no-cost educational resources that can potentially replace the use of commercial textbooks and provide faculty and learners with viable no-cost solutions to educational resources.

The Education Textbook Market

The medium of textbooks as a widely published educational tool arose out of the increase in educational institutions and demand for educational resources in the early part of the nineteenth century (Watt, 2007). In conjunction with advances in the printing press, this burgeoning market for textbooks saw an increase in production along with an initial consolidation of published textbooks into a monopoly; however, competition and demand soon led to diversification in textbook publishing (Watt, 2007). Presently, of the hundreds of textbook publishers in the United States, five represent the major portion of the textbook market share (Annand & Jensen, 2017). And while the number of publishers expanded since the nineteenth century, thereby creating more competition, the market has contracted in terms of the key publishing houses who service the higher education market.

History of Open Educational Resources

To a degree, the term open educational resource is an outgrowth of what Wayne Hodgins termed “learning objects” in 1994 (Walz, 2018). As the use and creation of learning objects began to grow across the educational landscape in the 1990s, some of the distinct characteristics of what would become OER emerged. Learning objects provided the learning community with the potential for sharable instructional materials that could conform to a standards-based mechanism for creating, reusing, and sharing (Walz, 2018). Further development of this idea of sharable instructional materials provided the foundation for the Creative Commons (CC). This organization was founded in 2001 and was one of the first well-funded organizations that provided an infrastructure to engage in a sharing economy for digital learning resources (Creative Commons, 2018). However, the term was officially designated in 2002 by UNESCO, (Panke & Seufert, 2013) and the organization has since become a curator of OER . As CC developed, other organizations also began exploring open materials. Notably, by 2002 MIT had published their first fifty open courses and published five hundred by the next year (MIT, 2018; Walz, 2018). What followed shortly after the turn of the millenium and continues today is an increase in the production of these “open content” resources (Hilton III, Wiley, Stein, & Johnson, 2010).

Definition of Open Educational Resource

Definitions for OER vary, and the breadth of resources fall into categories long-used in educational settings, both before the proliferation of online learning and in modern online environments. The overarching criteria, however, concern sharing resources as a “public good”

(Smith & Casserly, 2006), and are what Hilton III, Wiley, Stein, & Johnson (2010) refer to as the 5 'R's: retain, reuse, revise, remix, and redistribute. Retain refers to ownership and control of content; reuse refers to freely using the resources; the revise component allows for adapting or modifying the resources; remixing allows for combining resources to use in various contexts; and redistribution concerns the ability to share resources. Resources can include textbooks, documents, lesson plans, simulations, videos, and even entire courses (e.g., MITs Open Courseware) (Hilton III, Wiley, Stein, & Johnson, 2010; Walz, 2018).

Faculty Perspective

Information about faculty perceptions of OER is still emerging, and many universities are examining faculty perceptions in their forays into contributing to and using OER. In their study conducted at Washington State and the University of Idaho, Anderson, Gaines, Leachman, and Williamson (2017) cite multiple studies that note faculty concerns about issues with copyright, quality, and sustainability among other challenges to utilizing these resources. In their own study of engineering faculty, Andersson et al. (2017) found that most respondents indicated that while most faculty had little experience with OER, the ones who did reported that quality issues varied among the resources that they used. Prevalent in the results, however, were the indicators that many faculty were not aware of OER. Moreover, Seaman and Seaman (2017) report that of 2,700 faculty they surveyed, roughly 30% indicated that they were aware of OER. Of that 30%, however, only 10% indicate that they were "very aware". More recently, however, at least one survey conducted by Inside Higher Education showed not only an increase in awareness, but also support for increasing the use of OER (Lederman, 2018). Nevertheless, while there is still an awareness gap, the gap seems to be shrinking (Allan & Seaman, 2016; Seaman & Seaman, 2017). This awareness gap may be shrinking due to awareness of the increasing costs of

textbooks in higher education, along with the need to mitigate these costs for students (Allan & Seaman, 2016; Bureau of Labor Statistics, 2016; Harley, D, Lawrence, Krzys Accord, & Dixson, 2010). However, it is important to note the complexity of the willingness to adopt an OER strategy, particularly among some seasoned faculty (e.g., more than ten years teaching in their discipline) in certain disciplines (Silver, Stevens, & Clow, 2012). Supporting this trepidation regarding adoption, Figure 1 below details the primary and supplementary market share of OER by discipline, which suggests computing and mathematics utilize OER to a much greater degree than other disciplines (Cengage, 2016).

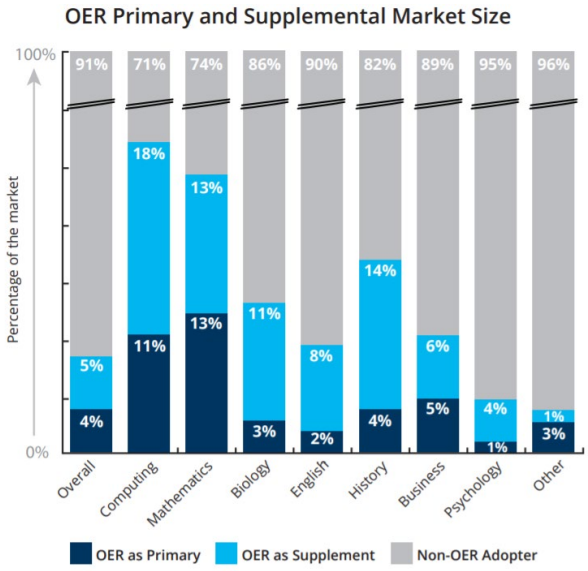


Figure 1. OER primary and supplementary market size. This figure illustrates the market size primary and supplemental use of OER, and non-OER adoption.

Student Perspective

Faculty perceptions do not exist in a vacuum. Those faculty who utilize OER have a direct impact on students and their perceptions. That is, the ways in which faculty use OER in the classroom affect student perceptions (Hu, Li, Li, & Huang, 2015), where ease of use and

context within the curriculum influence students' perceptions about the utility of OER. Hu et al. (2015) also note that their study may have a unique cultural component given that it was conducted in China. Nevertheless, students still indicated that they had a generally positive experience using OER. Similar results are found in the United States, where students view the use of OER in their coursework as positive. However, it is important to note that the magnitude of the strength of these positive views is small (Rowell, 2015).

Colvard, Watson, and Park (2018) noted in their study at the University of Georgia that student performance improved with the use of open source e-texts. Student performance improved across demographics, where both white and non-white student grades improved with the use of OER, with non-white students exhibiting the greatest improvement in grades (Colvard, Watson, & Park, The impact of open educational resources on various student success metrics, 2018). Moreover, this improvement was also present in part-time and full-time students, which is an important consideration for commuter institutions that have substantial part-time enrollments. Nevertheless, while some institutions have seen positive outcomes with respect to using OER and student performance, much of the literature indicates that improvements are either not significant or remain the same as with using commercial textbooks (Grewe and Davis, 2017; Fischer, Hilton, Robinson, and Wiley, 2015).

University Library Role: Quality, Affordability, and Access

While awareness still may be an issue with respect to overall adoption of OER by faculty, concerns about quality persist. Specifically, faculty have voiced concerns about the vetting and review process for some OER, "It seems to me the central question would be: Is the review process [for open textbooks] as robust [as published textbooks], and can it be trusted?" (Harle et al., 2010). Given the increased awareness in recent years, however, perhaps the availability of

new OER models and some increased oversight and attention to peer-review will soften some perceptions about OER.

As awareness has increases, however, there are concerns about the availability of OER and where to find the resources. Results from a Babson Research Group study showed that 50% of faculty noted the difficulty in finding materials, and 47% noted the lack of availability of materials in their disciplines (McKenzie, 2017; Seaman & Seaman, 2017). This perceived (and perhaps real) difficulty in finding resources represents an opportunity for collaborative efforts with university libraries. The Temple University Library implemented an alternative textbook program that incentivized faculty to opt for alternative resources in lieu of commercial textbooks (Bell, 2014). The University of Massachusetts Amherst library provides varying levels of grants for adopting OER or other textbook alternatives, along with resources for creating new OER (Umass Amherst Libraries, 2019). Both institutions have addressed the concerns evident in the literature by offering both incentives and a buy-in to a larger cause that addresses student-centered issues with quality, access, and affordability.

Sustainability of Resources

Sustainability is a concern that affects students, faculty, and the individuals and organizations that create and curate OER. Student experience with sustainable OER is a concern, as is faculty responsibilities with implementing and using OER, along with the production of OER. Students' experiences are inextricably tied to experiences and choices of faculty. That is, students interact with the content provided by faculty, and updating and ensuring relevance is the responsibility of the faculty who use the resources. From the production perspective, two key challenges exist: 1) the production of the product, and 2) the sustainability of sharing the product (Wiley, On the Sustainability of open educational resource initiatives in higher education, 2007).

This product-oriented view of OER is where cost, time, and maintaining the products present possible barriers to sustainability. Thus, the production of OER requires sound business models and infrastructure that support efforts in creating sustainable resources for them to be a viable solution (de Langen & Bitter-Rijkema, 2012).

Summary

As more research emerges about the usefulness and need for OER both in higher education and other educational environments, the pathway to adopting more robust OER in curricula should become clearer. Presently, OER seems to suffer from perceived and real limitations, and perception plays a major role in how educators and institutions will continue to adopt OER. Coupled with sustainability issues and pressure from traditional educational resource publishers (Blumenstyk, 2017), complexities surrounding adoption could persist. Nevertheless, over the past decade OER have gone from nascence to near ubiquity in terms of the availability (not necessarily acceptance) of content, and many institutions are implementing initiatives to capitalize on the growing base of textbook alternatives. With improvements in technology and accessibility, coupled with institutional buy-in and incentivization, utilizing OER and other no-cost resources is potentially valuable for faculty and students.

Artifact 2

Online Course Development Needs Assessment Form

Purpose

This form contains the information required to begin developing an online course. The information below should be the product of conversations with all stakeholders involved in the development process, as detailed in each section of the document. Ultimately, the form will be completed by an instructional designer.

Overview of the Development Process

The online course development process consists of 5 phases that align with the ADDIE model of instructional design: analysis, design, development, implementation, and evaluation. This document constitutes the analysis phase, where you will work with other stakeholders to assess learner and project needs. The remaining development phases will unfold as the online course development project progresses.

Assumptions

- Course syllabus is complete
- Chair has hired SME
- SME has completed the Hybrid and Online Training course
- Course will be offered in the upcoming semester
- Any third-party software has been approved by the LMS Administrator

Section 1: Completed by Chair and Instructional Designer

Course	
Chair	
College	
SME	

Section 2: Completed by program chair

Course Description (from syllabus)	
Rationale (from syllabus)	
Vision (how does this course align with the program, and what do you hope to achieve?)	

Section 3: Completed by program chair

Course Goals	
Course Objectives	
Topics	
Accreditation Standards (if applicable)	

Instructional Strategies	
Instructional Resources Needed (e-texts, journal articles, videos, multimedia simulations, etc.)	

Section 4: Completed instructional design manager

Development Stipend	
Start/Completion Dates	
Instructional Designer	
Librarian	
Educational Technology Services	

Artifact 3

Online Course Planning Outline

Purpose

The outline below will assist you with developing a well-organized online learning course that maps the alignment and connections between:

- The **Goals/Objectives** on the generic syllabus for the course
- The **Assessments**, which are used to determine students' competencies in the objectives/outcomes/goals. (Note: Please include the rubrics for assessments at the end of this document. Contact your Instructional Designer if you need assistance with rubrics).
- The **Resources** students will use to successfully complete the assessments and ultimately meet the objectives and outcomes of the course.
- The **Time on Task** refers to the amount of time it will take students to complete the assigned tasks. Weekly assignments and activities should equate to 5 hours of instruction.
- **Rubrics** that will be used to evaluate assignments and assessments.

Preliminary Planning

Before planning each week of the course, please fill in the chart below. You will work with your instructional designer, department chair, and librarian to complete the chart. Note: add additional rows as needed.

Course Objective that will demonstrate mastery of the goal	**Topics** (related to goals and objectives)	**Standard** (alignment with accreditation/industry standards)	**Learning Activities** (discussions, lectures, inquiry-based activities, simulations)	**Bloom's Taxonomy Level** (based on revised cognitive process dimensions)	**Assessment Type** (diagnostic, formative, summative)	**Assessment Description** (test, essay, discussion, project, problem-based assignment)	**Resource Type** (sourced from the library – peer-reviewed articles, case studies, white papers, multimedia simulation, e-text)

Weekly Outline

Below, reference the chart that you created above when writing weekly introductions and aligning goals/objectives with assessments and resources. Note: there is space for 2 assessments, but this may vary depending on the material covered in each week.

Week 1

Introduction: In the space below introduce the topics, concepts and other important information for the week. Summarize the material that will be covered and tie together the objectives, assignments and resources.

Assessment	Goals/Objectives	Title of Assessment	Assessment Type (quiz, essay, project, etc.)	Assessment Instructions	Resources	Time on Task	Rubric Needed
1							
2							

Week 2

Introduction:

Assessment	Goals/Objectives	Title of Assessment	Assessment Type (quiz, essay, project, etc.)	Assessment Instructions	Resources	Time on Task	Rubric Needed
1							
2							

Week 3

Introduction:

Assessment	Goals/Objectives	Title of Assessment	Assessment Type (quiz, essay, project, etc.)	Assessment Instructions	Resources	Time on Task	Rubric Needed
1							
2							

Week 4

Introduction:

Assessment	Goals/Objectives	Title of Assessment	Assessment Type (quiz, essay, project, etc.)	Assessment Instructions	Resources	Time on Task	Rubric Needed
1							
2							

Week 5

Introduction:

Assessment	Goals/Objectives	Title of Assessment	Assessment Type (quiz, essay, project, etc.)	Assessment Instructions	Resources	Time on Task	Rubric Needed
1							
2							

Week 6

Introduction:

Assessment	Goals/Objectives	Title of Assessment	Assessment Type (quiz, essay, project, etc.)	Assessment Instructions	Resources	Time on Task	Rubric Needed
1							
2							

Week 7

Introduction:

Assessment	Goals/Objectives	Title of Assessment	Assessment Type (quiz, essay, project, etc.)	Assessment Instructions	Resources	Time on Task	Rubric Needed
1							
2							

Artifact 4

Online Course Development Evaluation Rubric

Scoring Criteria	
5: Exceeds all aspects of the criteria listed and shows advanced use of course design, content delivery, and effective teaching strategies	
4: Meets all aspects of the criteria listed, shows accomplished use of course design, content delivery, and effective teaching strategies.	
3: Generally meets the criteria listed and has promising use of course design, content delivery, and effective teaching strategies.	
2: Approaching the base level of criteria; much work is needed in course design, content delivery, and effective teaching strategies.	
1: Missing and/or Incomplete base level of achievement resulting in a negative impact on the functionality of the course.	
Template - 5%	**Score**
Course menu: maintains standard order and contains required menu items. **Weekly assignment content areas:** contain a substantive introduction, list of objectives from the generic syllabus, and brief list of assignments for the week. **Discussion Board:** contains Ask the Class, Expectations, and discussion prompts for each week that there is a discussion.	
Navigation and Presentation - 10%	**Score**
Navigation: intuitive, minimal clicks and folders, material flows logically. **Content folders:** clearly labeled and described, add valuable organization to the arrangement of content. **Readings and Assignments:** clearly labeled and contain clear instructions. **URLs:** open in a new window and either utilize the Web Link tool (if applicable) or Hyperlinks incorporated into the body of text (instructions, explanations, etc.) **Self-identifying naming conventions:** names for all content items (hyperlinks, assignment names, etc.) reflect the name of the item referenced. **Videos:** presented in standard formats, function correctly, transcripts are provided if available, and there is a clear connection to the course material. **Grade Center Organization:** ordered by week, assignments labeled by week (or are easy to identify where they occur in the 7/15-week course). **Grade Center point values:** align with points on rubrics, syllabus, and descriptions in the course **Text Formatting:** Arial size 3 (in Bb) used throughout course, bullets are consistently aligned and used where necessary, text does not contain highlights or excessive use of color. **Images:** properly cited and contain alt text **UDL** principles followed throughout the course.	
Use of Technology - 5%	**Score**

Blackboard Tools: (Journals, Blogs, Wikis, etc.) used effectively (i.e. it's the appropriate tool) and align with course objectives **Assignment Tool:** used for all assignments. **Assessment Tool:** used for all quizzes, exams, tests, and surveys. **Assignment and/or instruction documents:** utilize standard format (.doc, .docx) for editing purposes. **Use of Applications, Software, and other Technology Tools:** enhances student engagement, and reduces labor-intensive actions needed to access learning materials. **Tutorials:** accompany technologies used in the course (where applicable).	
Syllabus - 10%	**Score**
Course Description: directly from the university's website. **Course Objectives:** verbatim from the generic syllabus and includes any supplemental objectives added by the developer **Technology Requirements:** clearly outlined with links to required software/applications (if applicable). **Teaching Methods:** clearly outlined and described for students. **Evaluation Procedures:** clearly outlined and described for students. **Grading Structure:** accurate, consistent, based on the University's 100-point grading system, and aligns with rubrics and the Grade Center. Categories of assignments (discussions, tests, etc.) are weighted (e.g., discussions = 20%; test = 15%, etc.).	
Course Objectives - 10%	**Score**
Weekly Introductions: include course objectives verbatim from the syllabus. **Weekly Assignments and Assessments:** clearly align with objectives. **Additional Goals and Objectives:** reflect the desired course outcomes and are measurable.	
Assignments and Assessments - 15%	**Score**
Relevant Assignments and Assessments: clearly relate to subject matter, course objectives, and context of the material. **Varied Assignments and Assessments:** provide students with opportunities to practice and apply concepts and skills in a variety of ways. **Expectations:** clearly communicated due dates, point values, and grading criteria. **Instructions for Assessments/Assignments/Activities:** clear, accurate, succinct, and show relationship to objectives and/or relevant topics. **Assignments and Assessments**: clearly align with course objectives, employ critical thinking (higher levels of Bloom's Taxonomy), and allow students to demonstrate mastery of objectives in real-world contexts.	
Discussions - 10%	**Score**
Alignment: discussion questions align with course objectives and/or facilitate student engagement. **Guidelines/Expectations:** explain required levels of participation (when to post, number of responses), and define required quality of communications. **Relevant, Open Questioning:** discussion questions relate directly to subject/topics and allow students to present original responses. **Active Engagement**: discussion board promotes active engagement among learners.	

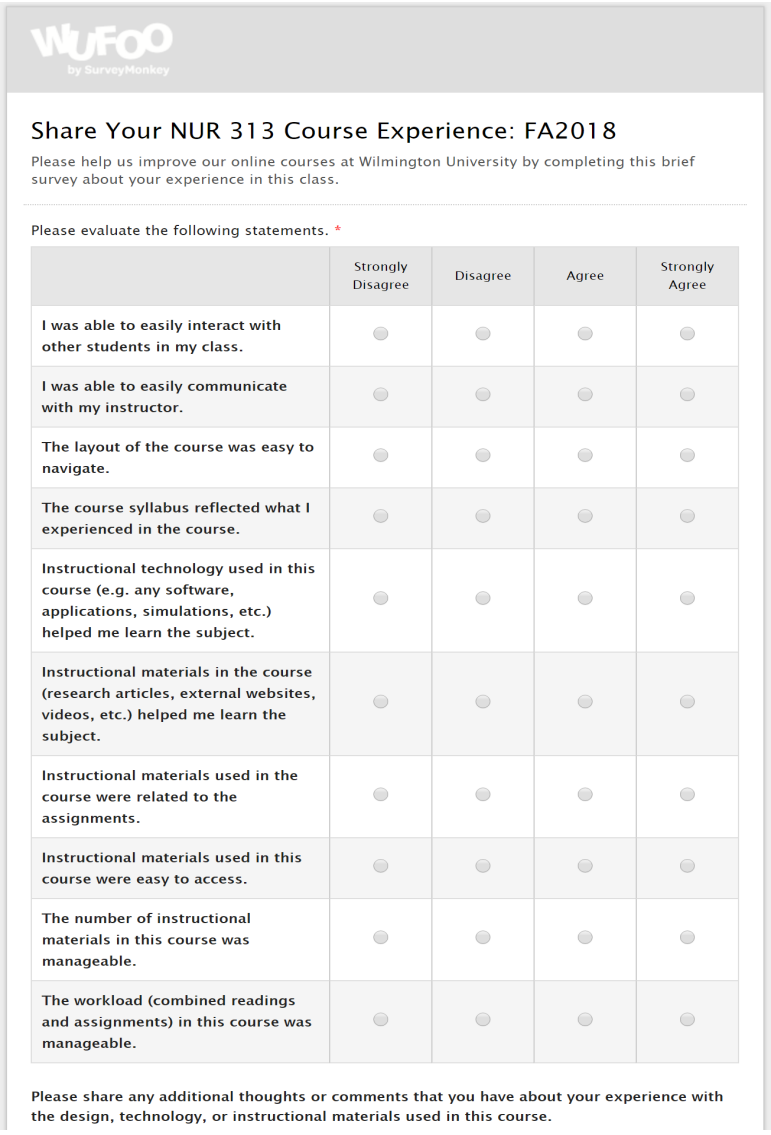
Resources - 10%	**Score**
Utilize: video, text, multimedia, and interactive media **Alignment:** clearly align with course objectives and learning outcomes. **Descriptions**: clearly describe purpose and provide navigation instruction to students **Legal:** follow copyright and fair use requirements **Appearance:** look professional and function correctly (e.g. text is legible/videos work correctly) **Alternative Media:** used when applicable and/or to comply with Section 508. **APA Citations and References:** used for any quoted, paraphrased, or otherwise borrowed text, ideas, graphics, videos, or other materials used in the course	
Rubrics and Grading Criteria - 15%	**Score**
Availability: rubrics are available for and attached to all discussions, written assignments, and projects, and are tailored to the assignments they evaluate. **Point Values:** values match point values on the syllabus and in the Grade Center. **Gradation of Scores:** reflect the university's grading scale. **Expectations of Quality**: clearly communicated for all criteria.	
Engagement-10%	**Score**
Collaborative Assignments/Projects: employed where applicable. **Communication:** clear pathways for student-to-student and student-to-instructor communication. **Group Assignments:** clearly encourage teamwork and cooperative learning. **Engagement Time**: 40 hours per 3-credits of engagement in all course material/activities.	

Artifact 5

NUR 313 Course Design Survey for Students

New course developments receive an end-of-course survey for students. The survey aligns with the Online Course Evaluation Rubric and asks participants about their experience with course design and instructional resources in the course. Results of the survey a collected and shared with program chairs to assist with evaluating online course offerings.

Student Survey



WUFOO
by SurveyMonkey

Share Your NUR 313 Course Experience: FA2018

Please help us improve our online courses at Wilmington University by completing this brief survey about your experience in this class.

Please evaluate the following statements. *

	Strongly Disagree	Disagree	Agree	Strongly Agree
I was able to easily interact with other students in my class.				
I was able to easily communicate with my instructor.				
The layout of the course was easy to navigate.				
The course syllabus reflected what I experienced in the course.				
Instructional technology used in this course (e.g. any software, applications, simulations, etc.) helped me learn the subject.				
Instructional materials in the course (research articles, external websites, videos, etc.) helped me learn the subject.				
Instructional materials used in the course were related to the assignments.				
Instructional materials used in this course were easy to access.				
The number of instructional materials in this course was manageable.				
The workload (combined readings and assignments) in this course was manageable.				

Please share any additional thoughts or comments that you have about your experience with the design, technology, or instructional materials used in this course.

Artifact 6

Student Performance Evaluation

Recent studies highlight an interest in a better understanding of how OER impact student performance. In their study of OER efficacy in an eight-week history class, Grewe and Davis (2017) of Northern Virginia Community College suggested that OER versus non-OER sections had a moderately positive correlation (r = .41) on academic achievement. Likewise, Colvard, Watson, & Park (2018) reported that their OER versus non-OER study resulted in statistically significant increases in grades of A and A- in courses at the University of Georgia. While these studies do not necessarily fully support the efficacy of OER, they contribute to the growing body of knowledge about how OER may positively affect student learning or have no effect on perfomance, of which both outcomes would support the use of OER in that performance either improves or remains unchanged, but students do not spend money on textbooks. The study outlined below represents a way to better understand student learning by comparing non-OER and OER sections of a nursing course that was part of the pilot and serves as an additional evaluation component that can be expanded upon in the future.

Survey data will be collected and analyzed as the final evaluation phase of development. The surveys provide both quantitative and qualitative data. However, because the surveys are voluntary, sample sizes are generally small. Nevertheless, they provide important data for department chairs and the IDT about how both faculty and students perceived their experience in an online course. Reports from the surveys include descriptive statistics about the survey question responses, accompanied by the responses to the open-ended questions.

NUR 313 has been offered previously online where a commercial textbook was the primary instructional resource. Both course quality points and outcomes assessment scores (scores on a summative course project) data exist for previous sections and the newly developed sections that utilize OER. This allows for a study to be conducted that will address two research questions and provide information about differences between performance based on instructional materials. Answers to the research questions will allow me to determine if there is a significant difference in student performance between the non-OER and OER courses based on students' quality points earned in the course and outcomes assessment scores. The results will provide useful information about how to proceed in future courses. If there is no significant difference in student performance, students retain the same performance while saving money on course materials. If performance significantly improves, the case for OER strengthens. If performance declines, revisiting the OER used or perhaps rethinking the use of the textbook will be warranted.

Research Method

Data for this study will be collected from the student information system (SIS). The estimated sample size will be about 500 students, 250 of which took a non-OER section of NUR 313 in the Fall of 2017, and about 250 will complete NUR 313 sections using OER in the Fall of 2018. Two analyses will be conducted using an independent samples t-test. The first analysis will determine if there is a statistically significant improvement in quality points (Table 5) between the non-OER and OER course. The second analysis will determine if there is a statistically significant improvement in the outcome assessment scores between the non-OER and OER course.

Table 1

Letter Grade-to-Quality Point Conversion

Letter Grade	Quality Points
A	4
A-	3.67
B+	3.33
B	3
B-	2.67
C+	2.33
C	2
C-	1.67
D+	1.33
D	1
D-	0.67

Research question 1:

Is there a statistically significant difference in earned quality points between students who take a version of NUR 313 that uses a commercial textbook and students who take a version that uses OER?

Hypothesis:

There is no difference in earned quality points between students who use the commercial textbook and students who use OER.

Research question 2:

Is there a statistically significant difference in outcome assessment scores between students who take a version of NUR 313 that uses a commercial textbook and students who take a version that uses OER?

Hypothesis:

There is no difference in earned outcome assessment scores between students who use the commercial textbook and students who use OER.

Limitations

Because there are multiple sections of this course, there are multiple faculty who teach the course. Teaching styles, approaches to grading, student course load, and student workload, represent some of the external variables that could affect course quality points and scores on the outcome assessment. This study does not assume causation. It is designed to show if there is a correlation between non-OER and OER materials on performance in these courses based on differences between mean quality points and outcome assessment scores relative to the instructional materials offered in the classes.

Artifact 7

Faculty Interviews

Purpose

The purpose of this research is to examine faculty perceptions in an online nursing course that utilizes no-cost instructional resources rather than a commercial textbook purchased by students. The interview questions investigate perceptions about using no-cost instructional resources in an online class, specifically addressing perceptions about: instructional resources used, student workload, instructor workload, quality of resources, and impact on student performance. The interview questions align with both the Online Course Development Evaluation Rubric (Artifact 4) and are based on key faculty perceptions and concerns present in current research (Blumenstyk, 2017; Jaschik and Leaderman, 2018; Seaman and Seaman, 2017).

Interview Questions

1. Identify the most effective and least effective instructional resources that were used in the section of NUR 313 that you taught.
2. Describe how the number of instructional resources used in NUR 313 affected the workload for students.
3. Describe how the number of instructional resources used in NUR 313 affected your workload as an instructor.
4. Describe the quality of the resources that were used in the course.
5. How do you think the non-textbook instructional resources impacted student performance?
6. What additional comments do you have about the instructional resources used in NUR 313?

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