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## An Open Education Journey: Connecting Student Affordability with Pedagogical Enhancement

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# An Open Education Journey: Connecting Student Affordability with Pedagogical Enhancement

## Abstract

Providing educational resources without burdening students financially is considered higher education's moral and sensible mission (Farrow, 2016). The financial burden of one or multiple textbooks can produce a great deal of stress on students, especially if the textbooks do not fulfill students' needs in satisfying learning objectives. We attempt to bridge this digital divide by connecting student affordability with pedagogical enhancement to increase teaching impact on students' learning. This article will discuss the experiential understanding of student affordability, how teaching and learning can be improved by using Open Educational Resources (OER), and the team dynamic that developed while creating an OER for an undergraduate education course.

Fournir des ressources éducatives sans alourdir financièrement les étudiants est considéré comme la mission morale et sensée de l'enseignement supérieur (Farrow, 2016). Le fardeau financier d'un ou de plusieurs manuels peut produire beaucoup de stress pour les élèves, surtout si les manuels ne répondent pas aux besoins des élèves en matière d'objectifs d'apprentissage. Nous tentons de combler cette fracture numérique en reliant l'abordabilité des étudiants à l'amélioration pédagogique afin d'accroître l'impact de l'enseignement sur l'apprentissage des étudiants. Cet article discutera de la compréhension expérientielle de l'abordabilité des étudiants, de la manière dont l'enseignement et l'apprentissage peuvent être améliorés en utilisant des ressources éducatives libres (REL) et de la dynamique d'équipe qui s'est développée lors de la création d'une REL pour un cours de premier cycle.

*Keywords:* open education, pedagogy, student affordability, open educational resources

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## **Background**

Recent expansion of Internet capability, feasibility of information and communications technology, and changing perceptions surrounding online learning has allowed Open Educational Resources (OERs) to be a vital component within educational spaces (Tuomi, 2013). This has led to an increase in OER usage in the classroom resulting in enhanced use of interdisciplinary-instructional approaches and bridging educational gaps by employing a moral and ethical motive (De Langen & Bitter-Rijkema, 2012; Karppinen et al., 2019). The discussion around student affordability and pedagogical advancement has focused on statistical analysis of student retention and year-over-year inflation of for-profit textbooks creating a financial burden and stressors for students (Boczar & Pascual, 2017; Bonet & Walters, 2016). What this article attempts to accomplish is to highlight the creation of an OER and observe its practical use related to affordability and pedagogical advancement in the classroom.

### **What is an OER?**

First, what is an OER? An OER, or Open Educational Resource, is an open, typically free, educational tool that is used for the purpose of learning, observation, and critique, such as a textbook. However, an OER is a not-for-profit, predominantly online option that strives to achieve learning outcomes for students without burdening them with extra costs. One of the founders of open software and open education, David Wiley (n.d.), describes an OER as a learning process that is either in the public domain or licensed for free and offers continual user engagement. Wiley proceeds to outline the “5R activities” that qualifies OER contents to be available, used, distributed, and altered freely without copyright repercussion: (1) retain, (2) revise, (3) remix, (4) reuse, and (5) redistribute. The definitions of OER accentuate the key themes of freedom, accessibility, engagement, and enhancement of education on a new technological level.

### **Student Affordability**

The notion of student affordability attempts to combine the monetary aspects of higher education (e.g., tuition, ancillary fees, living expenses such as food and shelter, etc.) with the utility that these charges have in advancing the educational aspirations of students. In many ways, student affordability goes beyond ‘dollars and cents.’ It provides students with a fulfilling higher educational experience connected to an emotional investment. Current meta-analysis suggests that student affordability clashes with competition. While higher education has historically been about educational development of students, it is increasingly seen as a product (Zhang et al., 2016). In addition, Khalid and Pederson (2016) conclude that, although the advancement of technology has been great, higher education faces challenges with digital exclusion such as economic disparities, lack of hardware and devices, and disparity in technical or

information literacy. Further, merit aid programs encourage actions such as academic performance, as opposed to social proclivity, to enhance student affordability and choice of higher education institutions (Zhang et al., 2016).

While OERs are free to students, the objective in this article is to not accept open education at face value, but to connect them with pedagogical advancements. We attempt to bridge this digital divide by connecting student affordability with advancement in learning which should be the prime outcome of students' higher educational experience. The discussion must be multi-faceted to include monetary, social, and academic markers.

### **Pedagogical Advancement**

Pedagogical advancement is the process of enhancing learning for both students in achieving learning outcomes, and instructors through feedback from student learning. We connect this to the role of effective learning within institutions of higher education, and the significant role universities have in providing pedagogical advancement. Murray et al. (1996) suggest an interdisciplinary framework using pedagogical proficiency (acceptable teaching methods), along with respect for fellow colleagues and for the institution of higher learning. This makes pedagogical advancement an important goal to be achieved by all stakeholders within the higher education institution including students, instructors, administrators, and the community.

Research on the effectiveness of OERs and pedagogical advancement demonstrates that students, in addition to enjoying the financial benefits of a free textbook, successfully achieve course learning objectives (Abramovich & McBride, 2018; Annand & Jensen, 2017). What we can surmise is that the most significant purpose of an OER is to offer a financial and pedagogical benefit for both students and educators alike. Furthermore, OERs should be supported by administrative and institutional policies to enable student and instructor pedagogical advancement on a large scale.

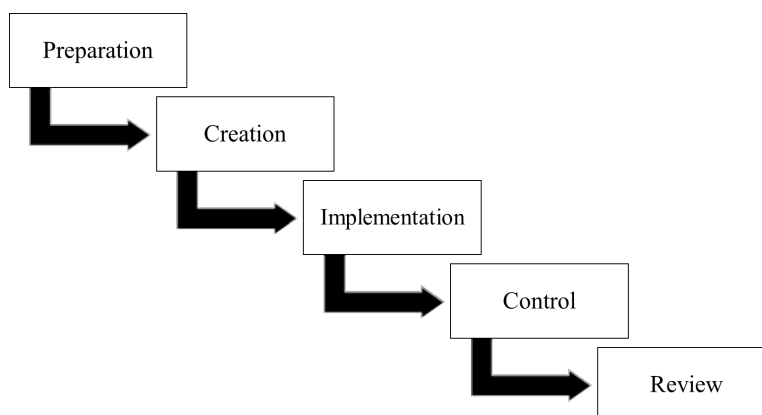
### **Creation and Implementation of an OER**

The creation and implementation of an OER in our Learning Organizations: Management and Leadership course followed a five-stage process (see figure 1) including preparation, creation, implementation, control, and review. The preparation stage – being the first – creates the plan and mission of the OER. The creation stage describes the so-called 'nuts and bolts' of the OER research: Writing, editing, re-writes, re-edits, image and theme adjustments, and copyright compliance for open sources. The implementation stage refers to the application in a course syllabus and discussion with fellow instructors who plan to teach the class. The control stage obtains feedback from students and their experience with the OER through financial and pedagogical reflections. The final review stage acts as an evaluation and appraisal to observe the

positive, negatives, and future adjustments needed to enhance the OER further into the future.

## Figure 1

*Five Stage Process for OER Curation*



### Stage 1: Preparation Stage

The preparation started with the instructor of the course considering the potential benefits of creating an OER to fit the specific needs of the course. This was done after a semester using a for-profit textbook. While this specific class used an interdisciplinary approach to educational management, the previous textbook used a purist business management framework. To pursue a resource that met the needs of the class, the goal was to create an OER that helps students not only save money on a textbook, but also meet the learning objectives without burdening them with both a textbook and additional required readings.

The objective of the preparation stage was to: (1) produce a no-cost option, (2) condense content into a single book, and (3) create interactive activities students could complete outside of class. This led us to successfully apply for a small internal research grant focused on OER adoption. One suggestion for others undertaking this stage is to try to incorporate more diverse voices/opinions from the beginning, to weave diverse perspectives more authentically throughout the resource.

### Stage 2: Creation Stage

With the help of our research grant, we were able to hire a research assistant who had previously taken the course, to write the contents of the OER, along with an editor who reviewed and adjusted the content. Through an iterative process, we first analyzed the previous year's course readings and compared them against the current course learning outcomes. This allowed us to identify gaps needing new research/resources

focusing on these topics. Then we synthesized the course readings, PowerPoints, and new research relating to the twelve-week course into a twelve-chapter textbook customized to the class. Copy editing after the first draft was conducted, followed by additional edits, and further writing to solidify a final and polished copy filled with complementary activities and images. A copyright check was done at the end of the project to ensure compliance, and others could adopt/adapt the book to their own needs. Accessibility was checked at various points throughout development along with a final check at the end to ensure accessibility for all students. A lesson for others is to check copyright and accessibility throughout the process to identify issues early and avoid those issues being repeated and requiring extra editing later.

### **Stage 3: Implementation Stage**

The implementation stage allowed the instructor to create accompanying slides to the content of the textbook and develop the class outline and course outcomes that connected to the textbook. The instructor was able to provide a PDF copy of the textbook on the course website, as well as link to the digital copy. Furthermore, the instructor provided slides and activities (both graded and ungraded) as resources for the students. In the syllabus, the instructor specifically linked the learning outcomes of the course to the activities and sections of the OER. If the OER outline is tied to the course learning outcomes in the creation stage, the implementation stage will proceed smoother.

### **Stage 4: Control Stage**

The control stage took part in the Fall of 2020 during the twelve weeks of the educational management course. A mid-semester reflection allowed students to provide feedback on the course and how they felt the textbook fit. Throughout the rest of the term, students were able to discuss how the OER was working to accomplish their pedagogical goals and if they achieved the relevant learning objectives for the class. Student feedback came in the form of verbal discussion, written work, and email correspondence. General observations from students after completion of the course provided a new perspective in preparation for creating OERs in the future. The process of having students take part in the resource creation leads to a more authentic, student-centred resource.

### **Stage 5: Review Stage**

The review stage took place after the semester finished. This included meetings with the authors and facilitators of the OER, along with other stakeholders involved in the process. While this facilitated edits and improvements to the OER, an additional benefit of a thorough review stage is that it enabled conference presentations, and lessons learned for future OER creation and implementation. Since our OER is online, when new research emerges or learning outcomes change, the OER can be easily

updated without the creation of a whole new volume of the textbook. This is one of the biggest advantages to using an OER in comparison to a printed for-profit textbook.

### **Observations**

Throughout the OER creation and implementation process, a final collection of methods, actions, and feedback were collected and discussed. Methods were used to create textbook templates for future OERs, along with templates for the interactive activities through *H5P* software and integration. The most significant observation we found was the impact of students' feedback during the control stage. Students are great adjudicators for what works based on their experiences with the OER. We were able to obtain information on affordability, pedagogical advancement, and connections to the literature.

### **Affordability for Students and Pedagogical Advancement**

It is quite clear, on an applied level, that zero-cost reading material benefits student. Considering most students take a full course load of five classes, providing a free option for a textbook, helps them immensely. Multiple studies have discussed the stress that textbook costs can pose for students and the potential for OERs to alleviate that stress (see Brandle et al., 2019; Jenkins et al., 2020; Murphy & Rose, 2018). This, in turn, helps students focus more on achieving the learning objectives of the class, and frees students to pursue the course objectives with more comfort to forge their own path of connected knowledge and learning.

The psychological component of alleviating stress, along with the content of the textbook, was reflected in the students' ability to achieve learning outcomes in the semester. Learning outcomes were connected to the textbook content, to drive pedagogical enhancements for students. The action from the students, and the feedback for the instructor and authors, reflects a beneficial pedagogical advancement for all stakeholders. One cannot underestimate the impact of interactive activities embedded in the resource as it allows for greater adaptability in many formats for students and their achievement of learning objectives.

The OER also incorporates many diverse activities with which students can engage. Students had the ability to use it as a classical textbook, a journal with reflection sections, or a study resource using the interactive activities, which increased the versatility of the OER for students to guide their own education of the content toward learning objectives. For these reasons, we feel that OERs should continue and be used with other classes.

## **Ethical Framework**

The observations reflecting positive outcomes of alleviating financial burden, along with pedagogical competency, complement the research from Farrow's (2016) moral and ethical duty of a university to provide a student a learning experience without burdening them financially. Furthermore, the observations reflect that our students were able to obtain the OER with little to no barriers such as lack of hardware and devices, and disparity in technical or information literacy (Khalid & Pederson, 2016). Also, an aid, such as an OER, written by academics creates a merit-based resource that reflects more affordability for students (Zhang et al., 2016).

The observations also reflected pedagogical competency as this OER was able to meet the course learning objectives (Abramovich & McBride, 2018; Annand & Jensen, 2017). Students were able to complete the required materials for the class, including the interactive materials inside of the book, which led to an enhancement of learning about educational management.

OERs are useful to alleviating financial burden for students and enhance pedagogical advancement. In addition, we can surmise that the alleviation of psychological burden allowed students' learning to flourish since stressors were reduced, allowing effective learning to take place.

## **Implications from Observations**

Further psychological study would be pertinent to discuss if alleviation of financial stress allowed other cognitive processes to take form such as deep learning, interdisciplinary learning, and critical thinking. Moving forward, it is important to harness these aspects considering the role of deep learning and interdisciplinary learning will be more of a mainstay in pedagogical advancement. In addition, this should relate to the ability to use critical, logical, and rational thinking for pedagogical advancement.

Ikedinachi et al. (2019) and Tarbutton (2018) suggest that technology will continue to play a significant role in the classroom not only through tangible products in the classroom (e.g., computers, etc.), but also in the way we learn and obtain information towards collaboration and critical thinking. This means the use of OERs, and other forms of technological resources, will play a critical role in how students learn in the future. The promising practice is to integrate the technology into the classroom for a robust and enhanced learning experience.

Certain issues can be expanded from this process including length of time and challenges involving implementation. Ensuring copyright was handled correctly was a challenge considering a great deal of pictures and graphs did not provide clear direction on use and redistribution. Furthermore, a group creating an OER must be



committed to the time required to create this resource, as it is not out of the norm to spend a full year moving through the different stages. Some preconceived notions connect online creation to being quick and seamless; however, it is considered a methodical process on every level, much akin to writing a full print textbook. On a more sociological level, criticisms in relation to leadership qualities with this fast pace of technology integration (Raman et al., 2019) and the potential for learning segregation through competency and willingness from learners (Ikedinachi et al., 2019) may be issues that challenge OERs on a larger scale. Critical questions about OERs and online learning still need to be discussed before specific policy action is taken towards a complete shift towards technological learning.

### Conclusion

The journey to create an OER is a long and fulfilling journey leading to the goals of student affordability and pedagogical competency. Aside from the future-facing challenges that we need to deal with on a case-by-case basis – on a micro level – the OER was able to do its intended job through ethical, moral, pedagogical, and technical needs for students, educators, and the institution.

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