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Testing the Intervention of OER Renewable Assignments in a College Course

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Abstract

The purpose of this study was to explore students and instructor perceptions of the concept of renewable assignments in the open educational resources (OER) movement. Mixed methods were used, with a combination of a survey and semi-structured interview, administered at George Mason University in the United States. Eleven graduate students enrolled in the *Instructional Design and Technology* program in the course *Advanced Instructional Design* were invited to complete an online survey. A face-to-face interview was conducted with the instructor of the course. Descriptive statistics and thematic analysis were used to examine the results of the study. The data analysis found that only a small number of students were knowledgeable about OER, but the majority of participants indicated that they were very satisfied with the concept of renewable assignments. The findings suggest further investigation of the pedagogical models that tend to support student-generated OER.

Keywords: Higher education, open educational resources (OER), open pedagogy, OER-enabled pedagogy, renewable assignments, perceptions of OER, student-created OER

Introduction

The open educational resources (OER) movement is an established trend in the broader 'open' movement, based on the idea that knowledge is freely available on the internet and open for use with few or no restrictions. Wiley (n.d.) introduced the 5Rs (Retain, Reuse, Revise, Remix, Redistribute) framework of permissions for using OER: (a) retain refers to permission to preserve the authorship of the original work and control copies of the content; (b) reuse refers to permission to reuse the materials exactly as they are; (c) revise refers to permission to adapt, modify, improve, and change the content, including translating into different languages; (d) remix refers to permission to mix and incorporate the original content with other material to produce new materials or content; and (e) redistribute refers to permission to distribute revised and mixed original copies among educators or friends. The William and Flora Hewlett Foundation (2013) produced a set of goals stating that by 2017, OER would be significantly integrated into all educational systems at different levels. However, the current status of OER adoption in education is variable, and it has not expanded in higher education due to several obstacles that hinder the spread of OER at the local and national levels (Allen & Seaman, 2016).

In addition, several scholars (e.g., Pitt, 2015; Wiley, Webb, Weston & Tonks, 2017) believe that OER might have other potential capabilities alongside the sharing of knowledge and providing cost-saving alternatives to expensive textbooks. These capabilities, according to the William and Flora Hewlett Foundation (2013), are: (a) to offer access to knowledge for everyone, (b) to reduce the cost of education, (c) to deliver greater learning efficiency, (d) to promote continuous improvement of instruction and personalized learning, and (e) to encourage translation and localization of content. However, these perceived benefits of OER cannot be robustly demonstrated without empirical evidence.

To widen the adoption of OER across higher education institutions, OER must prove its effectiveness in teaching and learning. That is, faculty need empirical evidence to substantiate the potential benefits of OER in delivering greater learning efficiency and innovative teaching practices. Accordingly, several experts (e.g., Wiley et al., 2017) and associations (such as the Open Education Group)[1] have endeavored to demonstrate the impact of OER in teaching and learning contexts. For example, in June 2017, the William and Flora Hewlett Foundation funded the Designing with OER (DOER) Fellows Program, administered by the Association for Educational Communications and Technology (AECT), Open Education SIG, and the Open Education Group. The main goal of the DOER Fellows Program is to encourage instructional designers, in partnership with a subject matter expert, to design and implement effective OER practices in teaching and learning contexts. Specifically, the DOER grant focuses on eliminating the disposable assignments that have no further value beyond the limits of classrooms and developing renewable assignments that add value to the world of knowledge. Thus, the purpose of this study was to examine this emerging trends in OER movement that might contribute to widen the use of these open resources across higher education and provide evidence that OER is effective in teaching and learning practices.

Conceptual Framework

Openness

OER is a phenomenon under the broader umbrella of openness, based on providing knowledge as a "public good" and the idea that "openness" can have a significant impact on education (Murphy, 2013; The William and Flora Hewlett Foundation, 2013). With this spirit, in recent years, the intention of the OER movement is to promote equalized access to knowledge and educational opportunities over the world, as well as to bring about a change in educational practices through improving pedagogical approaches, promoting collaboration, and receiving support from several communities in different aspects.

OER can be considered as a new technology innovation that individuals will use and repurpose to fulfill their needs. The concept of openness associated with OER features several traits: transparency, flexibility, credibility, and creativity (Biswas-Diener & Jhangiani, 2017). Transparency refers to the development of courses on web-based platforms that offer an opportunity for reviewing OER materials such as open textbooks by educators online. Flexibility means that users can adopt OER in different contexts, through flexible learning pathways, and through an international network. Credibility represents the support of OER by professional agencies through leading research on how OER (e.g., open textbooks) affects learning and teaching practices. Finally, creativity pertains to students' contribution to the creation of OER and sharing these resources online with no or few restrictions.

Students' Contribution to OER Creation

Recently, there has been renewed interest in making students' assignments matter by engaging students in OER creation. Renewable assignments, also called student-created OER, involve students' engagement in creating artifacts that have personal meaning to them and sharing them publicly under the Creative Commons CC-BY license (Ross, 2018; Wiley, 2017). These artifacts with CC licenses are students' OER assignments that will be undertaken through a peer-reviewed process to ensure the high-quality of OER content (Ross, 2018). DeRosa and Robison (2017)

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[1]http://openedgroup.org/doer-fellowship

defined students-created OER approach as "an approach in which students are not just consumers of content but active and visible participants in the construction of knowledge" (p.115).

Several lines of evidence suggest that learners play a vital role in co-production of open content (Ross, 2018; Pitt, 2016). For example, the University of Edinburgh launched a "Digital Futures for Learning" initiative that aimed to create OER in one course by utilizing the core students' assignments (Ross, 2018). The results of this initiative were high-quality OER assignments that received feedback from three peers, the instructor of the course, and an author to ensure their quality before they were released in public. The initiative raised the question of how students can be engaged in the OER developmental process in order to evolve these published resources over time.

In addition, Pitt (2016) reflected on a case study in which students were co-creators of OER at Medical School in Dundee University in Scotland. This initiative drew from the Higher Education Authority (HEA) project that advocates engaging students as partners and collaborators in curriculum production. In this spirit, students were engaged as co-producers of learning resources with medics using WordPress alongside Blackboard for creating OER, sharing, and reviewing it online. Although students were enthusiastic about their accomplishment, some of the produced OER materials could not be published due to copyright, accessibility, and pedagogical issues. Regarding the impact of engaging students in the creation of OER, students favored this new approach over traditional ways for a wide audience to access and read their materials.

With this in mind, Ehlers (2011) articulated that the level of OER usage and creation is based on the level of learning architecture or pedagogical practices. A high level of OER usage and creation would be approached by designing a course at a high level of open learning and teaching practices, in which both objectives and methods are open. At this level, the learner is self-regulated and active in open content production, and the instructor acts as a facilitator in the learning process. Geser (2012) insisted that the use of OER should be integrated in a course designed based on constructivist approaches in order to promote user-generated OER.

The substitution of the traditional textbooks with OER content and transformation to the student-created OER approach have emphasized the student-centered design of curriculum. OER proponents advocate the use of open pedagogy approach or OER-enabled pedagogy approach to encourage user-generated OER. Wiley (2017) defined OER-enabled pedagogy as "the set of teaching and learning practices only possible or practical when [users] have permission to engage in the 5R activities." (para. 7). Utilizing open pedagogy practices promotes instructors an opportunity to create a new way of teaching and learning. Instead of allowing students to merely download the knowledge and use it as it is in their learning, they could view it as content that can be continuously produced, revised, and improved over time (DeRosa & Robison, 2017; Ehlers, 2011; Geser, 2012).

According to Schuwer (2017), open pedagogy adds value to teaching and learning practices in two ways: (a) offering instructors the flexibility to engage in multiple pedagogy approaches to make the learning process more active, and (b) challenging learners to use the available learning technologies to connect with peers and practitioner from different cultures online, and thereby, to develop communication and collaboration skills. To date, innovating pedagogical models with the use of OER has focused on effective employment of the 5R practices to reuse and produce OER content.

Hodgkinson-Williams, Arinto, Cartmill and King (2017) attempted to understand the hindrances that hamper the long-term effective use of OER in education. A meta-synthesis of 15 empirical studies that examined OER use, creation, and adaptation in Asia, South America, and sub-Saharan Africa was undertaken. The study showed that the major obstacle to OER use in these three regions was educators lacking legal permissions to share their materials online under open licenses. On the other hand, several factors optimize OER usage with respect to using and

repurposing open content: ensuring the quality of OER content; integrating OER use and creation as essential elements in institutional initiatives; and creating a culture of sharing among students and educators. In addition, the provision of a cohesive catalog of OER content in a course has a major *influence* on the use, creation OER as well as practicing the 5R activities.

In summary, since there is an emphasis on the role of students in this digital age to be co-producers of OER content and contributors to the world of knowledge beyond the boundaries of classrooms, there is a need to explore the value of publishing the core assignments that students themselves create in college courses online under CC license. This study provides indicators about students and instructors perceptions of the emerging trend in the use and creation of OER.

Methods

Purpose of study

The purpose of this pilot study was to examine the intervention of student-created OER renewable assignments in the *Advanced Instructional Design* class at George Mason University through one semester, from February to May 2018. The concept of OER renewable assignments was examined from both students and instructor perspectives. The goals of this study were:

- To gain a better understanding regarding the potential impact of renewable assignments on students and instructor perceptions of the attributes of OER.
- To identify the factors that play a critical role in motivating students to adopt the concept of renewable assignments.
- To develop more targeted research questions for the next phase of testing the intervention of student-created OER.

The study focused on the following research questions:

Q1. To what extent are graduate students in the *Advanced Instructional Design* course aware of the core concepts of OER?

Q2. How do the students and their instructor perceive the concept of integrating renewable assignments into the *Advanced Instructional Design* course?

Mixed methods research

A sequential mixed method (MM) design was used in this study. This design combines quantitative and qualitative research methods in a single study for the purpose of complementarity, seeking enhancement and clarification of the results from one method with the results from the other method, and triangulation by integrating multiple methods in both data collection and data analysis leading to an integrated explanation of results from both methods in order to construct the conclusion of the study (Greene, Caracelli, & Graham,1989; Maxwell, 2013; Teddlie & Tashakkori, 2009).

Instruments/measures

A survey (Appendix 1) was administered to students to collect quantitative data about their perceptions of OER and the concept of renewable assignments, and to determine the factors that would motivate them to share their assignments publicly under an open license. The quantitative survey instrument

was developed based on the benefits of OER and the concept behind renewable assignments. One question used was based on an existing and validated survey conducted by Allen and Seaman (2016), and another question was based on a survey developed by Hilton and Wiley (2018) with the Open Education Group on behalf of the University System of New Hampshire Open Education Initiative, adapted by permission (Hilton, personal communication, January 31, 2018). The survey consisted of 14 questions, including two unstructured questions, 10 structured questions, one rating question, and one contact information question to collect participants' emails for participating in future studies. It was divided into three parts: (1) demographic information, including gender, length of work experience, and job title; (2) awareness of OER, aiming to measure and describe participants' thoughts on the value and quality of OER used as supplementary resources in the course; and (3) participants' satisfaction with the concept of renewable assignments, their willingness to adopt renewable assignments in future courses, and the factors and obstacles they faced.

In addition, an open-ended face-to-face interview (Appendix 1) was used to gather qualitative data from the instructor of the course. It was a non-directive and general approach to gain an in-depth understanding of the instructor's thoughts about the concept of renewable assignments (Teddlie & Tashakkori, 2009). Questions relevant to the current paper sought the instructor's perspectives on the value of implementing renewable assignments in the class for both students and instructor, and the types of pedagogical practices that might support student-generated OER renewable assignments. Other questions addressed related topics such as motivating factors that might encourage students to turn their assignments into renewable assignments as a form of OER, as well as areas where the intervention could be improved for the next iteration of this research.

Setting

This study took place in Spring 2018 through a course at George Mason University entitled *Advanced Instructional Design*. The course was 16 weeks long, running from January 23 to May 8, 2018. This course was selected for implementing the Designing with Open Educational Resources (DOER) Grant administered by the Association for Educational Communications & Technology (AECT), SIG Open Education, and the Open Education Group, focusing on the development of renewable assignments based on the principles of OER-enabled pedagogy. Fundamentally, the course provides students with the knowledge and skills for designing highly contextualized and engaging problem-solving learning environments (PSLEs) based on the principles of constructivism, situated cognition, and distributed learning.

The criteria for selecting this course were as follows: (a) it offered easy access to participants through the instructor; (b) the objectives of the course included promoting individual knowledge construction; (c) the nature of the course assignments aligned with the essence of the renewable assignment concept and could be published under an open license; and (d) publishing the OER renewable assignments of this course would contribute to increasing the quality of OER in this discipline through sustaining, producing, and repurposing the current OER renewable assignments over time. The intervention in this study encompassed two course assignments: a group presentation of the theoretical principles and instructional characteristics of constructivist learning environments, and a research brief on constructivist pedagogical models or instructional strategies.

Sample overview

The pilot study used a convenience/purposeful sample because it was easy to reach these participants through the instructor of the course. The participants in this study were graduate students in the

Instructional Design and Technology (IDT) program enrolled in the course (*Advanced Instructional Design*) during the period of this research. Participants were 11 graduate students (25% male (n=3); 75% female (n=9)) and the instructor of the course. The students were asked to complete an online survey, and the instructor was interviewed. All participants were novices in the area of OER adoption with respect to using, creating and repurposing OER (Hodgkinson-Williams et al., 2017).

Procedures

At the beginning of the Spring 2018 semester, the instructor of the course (first author of this paper) introduced to the class the aims of the study, which were to explore the concepts of OER and renewable assignments. Then, in week 2, a presentation was given to the class about OER, Creative Commons licenses, and the concept behind the benefits of OER to learning communities as well as the benefits students could accrue from making their assignments OER. An account on the Multimedia Educational Resources for Learning and Online Teaching (MERLOT) resources platform was created. MERLOT is an online repository for the submission of OER in a range of academic disciplines for use by higher education faculty and students. After the instructor evaluated students' assignments based on rubrics that developed as a component of the course, an email was sent to each group and each student seeking their permissions to publish their assignments as OER in MERLOT. Once the permissions were received from the students, the CC-BY license was added to their assignments and uploaded to MERLOT under the students' names. Then, the citations of the works hosted in MERLOT were sent to the students so they could add them to their CVs and share them with friends and colleagues. At the end of the class, after students had been exposed to the intervention of renewable assignments, they were asked to complete an online survey. In addition, the instructor of the course was interviewed to explore her points of view regarding the concept of student-generated OER in the form of OER renewable assignments.

Data Collection

The data collection for this study included a survey containing open- and closed-ended questions that took 10-15 minutes to complete, and a semi-structured in-depth interview that lasted approximately 30 minutes. An informed consent page was presented prior to the survey and interview; participants were asked to agree with the consent statement before answering the survey questions and interview questions.

The online survey was administered to students at the end of the course through the Survey Monkey website. First, the participants responded to the closed-ended questions, followed by a set of open-ended questions designed to illuminate some aspects related to OER adoption and renewable assignments as well as to avoid missing data that might remain undiscovered through closed-ended questions. The open-ended questions were particularly aimed to gather data about students' perceptions of the concept of renewable assignments and their thoughts about the main barriers that might hinder them from sharing their renewable assignments in public with no or few restrictions. These two methods (interview and survey) were used because both are self-reporting methods that sought to determine participants' beliefs about the adoption of OER, specifically about the concept of renewable assignments.

A semi-structured in-depth interview was conducted to "construct a shared understanding of 'what is going on'" in an authentic relationship with the subject (Brown & Durrheim, 2009; Kvale, 2006). The instructor of the course in which the intervention was implemented was interviewed in an attempt to understand her perceptions and to give her the opportunity to address the advantages

and disadvantages of employing OER renewable assignments in the course and to provide input on prospective improvements. Kvale (2006) described interviewing a participant as "an interchange of views between two persons conversing about a theme of mutual interest" (p. 2). The interactions with the instructor in this study can be described as "warm personal dialogues" due to the curiosity of constructing a real understanding of the impact of renewable assignments on teaching and learning (Kvale, 2006). Through the interview, the desired information from the instructor was extracted by probing and asking questions other than those existing on the agenda (Kvale, 2006). The interview was a face-to-face conversation with the instructor to formulate ideas about the study themes and to enhance understanding of the topic of interest. The interview was used as an instrument to build a descriptive narrative and, in turn, the results were interpreted in a report.

Data analysis

Descriptive statistics (Teddlie & Tashakkori, 2009) were used to analyze the survey responses and the data from both the survey and interview were presented thematically. The data from the closed- and open-ended survey questions were analyzed simultaneously, and interview data were analyzed after the interview with the instructor. The data were analyzed employing the constant comparison analysis technique according to Onwuegbuzie, Dickinson, Leech, and Zoran (2009). The constant comparison analysis involves grouping the data into units for open coding. Then, these generating codes were classified under broader themes. Coding data, as well as the changeover process between data collection and the iterative data analysis (Saldana, 2016) to search for meaning (Hatch, 2002), is a design decision that must be systematically planned (Maxwell, 2011). Saldana (2016) stated that the code is a "researcher-generated construct" and "an interpretive act" (p. 4). The process of coding was iterative including listening to the interview-tape recording before transcribing and reading the interview transcript several times. While listening and reading, notes were taken and looked for patterns to explain and interpret the instructor's perspective regarding the topic as well as to develop tentative categories or patterns. After generating the codes, the qualitative interpretation obtained from the responses to the open-ended questions was merged with the qualitative narrative data obtained from the interview in order to identify emerging themes and patterns. Finally, the entire set of findings from the interview and both the closed- and open-ended questions was merged to generate the final report on the conclusion of the study.

Results

Survey findings

Of the 11 students approached for the study, the number of respondents to the survey was 8 participants. Of these eight, two (25%) were male and six (75%) were female. However, the responses were varied between 6-8 responses to the closed-ended questions. That is, two respondents skipped some of these questions. The majority of participants had professional work experience of more than 10 years. The participants were full-time and part-time students, and among the participants were a professor, a language instructor, a training program manager, an instructional technology coordinator, a product developer, an elementary school teacher, a principal, and a PhD student.

Students' awareness of OER. The first goal was to measure and explore the awareness of OER among students in Advanced Instructional Design after they were introduced to it. The results indicate that among the eight participants, three (42.86%) were knowledgeable about the

term *OER*, two (28.57%) were very knowledgeable about it, and two (28.57%) were somewhat knowledgeable about it. The majority of participants, six (85.71%) students, chose promoting shareability as the greatest benefit of OER, followed by four (57.14%) who chose equalizing access to information for all, followed by three (42.86%) who chose personalized learning and enhancing learning performance as a benefit. When the participants were asked to rate the quality of OER used in the course, five (71.43%) respondents rated it as about the same quality as the traditional (non-OER) instructional materials. The databases participants used for their own searches included Google (100%) and Wikipedia (42.86%). No students used open digital repositories such as MERLOT and OER Knowledge Hub. Only one participant reported using the Directory of Open Access Journal.

Students' perceptions of renewable assignments. The second goal of this study was to explore participants' satisfaction with the concept of renewable assignments, their willingness to adopt renewable assignments in future courses, and the factors and obstacles they faced. The results, based on six participants who responded, indicated that three participants (50%) were very satisfied, two (33.33%) were satisfied, and one (16.67%) was somewhat satisfied with the concept of renewable assignments. One of the participants who was very satisfied valued the idea of sharing assignments with future students in this class and found it helpful to see other student work samples for the same projects the participants were working on. The results show the influencing factors that contributed to adopting renewable assignments. Generally speaking, students tended to endorse sharing works with others and receiving publication credits more than factors such as intrinsic motivation, the pleasure of being involved in peer production, and stimulating innovation. One participant was influenced by understanding OER from the content creator perspective. When participants were asked if they would be willing to publish their future assignments for other courses in open digital repositories with others under an open license, five (71.43%) were quite willing to share future assignments in public, and two (28.57%) were uncertain about publishing their works because they were still on the fence about OER. Participants' responses regarding what they liked best about the renewable assignments approach in Advanced Instructional Design included the availability of OER online, helping others in immediate work or community learning, sharing knowledge and personal credit, removing financial barriers to knowledge, and finding it helpful to look at work samples of students going through the same program or course. The main barriers that kept participants from publishing their assignments under the Creative Commons license included deficiencies of quality or professionalism in the work, lack of peer review, and worries about the ability of others to change the work without consulting them.

Interview findings

The data from the interview with the instructor suggest that the concept of renewable assignments is exciting because it engages both students and instructor in the development of OER materials. The instructor commented: "The renewable assignments concept is probably something that is more visible, more pragmatic, and more implementable than the actual textbook idea of OER." However, the instructor pointed out that there are lots of difficulties in the implementation process, such as finding good-quality OER and a cohesive collective list of OER that can be used over time, as well as determining how faculty can balance resources that they are going to use as commercial or traditional course materials versus OER reading. One issue related to the quality of OER is the difficulty of continually assessing its quality as these resources keep changing over time through the 5Rs practices.

The instructor believed that the primary value of renewable assignments for students was letting students feel they owned their assignments and could do something with them such as putting them up for public consumption. These virtues of renewable assignments encourage students to become more proactive and value their assignments beyond the course limits. Another source of value is that OER like renewable assignments might become citable; people will cite them when they use them and the students can add them to their CVs.

The instructor argued that the value of renewable assignments for faculty is the chance to compile activities done in a course into a publication online under a Creative Commons license and add it to their CV in a section such as "non-refereed journal articles." Maybe when more higher education institutions adopt OER, they will encourage faculty to show that their publications are being reused by others under a specific section called "Creative Commons or Open Educational Resources."

The instructor stated that students understood renewable assignments as a primary driver that helped them reflect about their learning not only by giving their permissions, but by understanding that they can publish their assignments in MERLOT and put them on their CVs. In other words, students' awareness of the attributes of reusing and repurposing behind renewable assignments motivated them to be more engaged in making their assignments open and publishing them publicly. Another motivating factor that encourages renewable assignments creation is students' willingness to go back and spend the time to polish their assignments to make them publishable. Students can receive good feedback from the public over time, not only from the instructor and peers, for continuous improvement purposes.

The interview data suggest that current pedagogical practices may or may not need to change to support student-created renewable assignments. If there is a need for a change, it may lie in including feedback given to previous classes on their assignments for current students before they use them as best practices. The instructor mentioned that students were mimicking the highly graded assignments without having more information about whether these models represented good implementation. Thus, instructions can be included in the assignments to have students look for new examples themselves. This may engage them more to find best practices for implementation and critique them for further improvement.

It was also suggested that one area of improvement for redesigning the intervention of renewable assignments for the next class would be to integrate the instructions for the assignments as part of the class "instead of being voluntary options." This feedback of integrating instructions for creating OER renewable assignments suggests developing a guide for students on how to do renewable assignments in the syllabus of the course. Instructions for the assignments should be added to the guidelines, such as listing OER resources for students to use and instructions to include the Creative Commons link in the assignments and upload them to MERLOT. In addition, the instructor suggested adding official processes of peer review among students (e.g., commenting on assignments through WordPress). The instructor also believed that creating a rubric to assess the quality of these assignments could help to ensure their quality before posting them publicly.

Limitations of Study

The limitations of this study were the small sample size and deficiencies in the adoption of OER. First, the study was limited by the 11 participants enrolled in the Advanced Instructional Design course of which only eight responded to the survey questions. Second, there was no real exposure to OER throughout the course other than the presentation on OER in the beginning of the course and seeking students' permissions to turn their assignments into OER materials in the form of renewable assignments. In the future study, an intervention will be developed to allow students to use OER in their

assignments extensively. Moreover, using additional instruments to collect data besides the survey, such as focus groups and think aloud, which is a scaffolding instructional strategy used for teaching high-level cognitive strategies (Abu Raihan, 2011), would help provide an in-depth understanding of participants' experiences with the concept of renewable assignments.

Conclusion

In this study, the intention was to explore students and instructor perceptions of OER in general and renewable assignments in particular. The study had only a small number of student participants who were knowledgeable about OER. Notwithstanding the relatively limited sample, this work offers valuable insights into participants' perceptions regarding the concept of renewable assignments. Overall, both students and instructor viewed the idea of renewable assignments as interesting and believed it could add value to their teaching and learning outcomes. For example, almost 50% of the student participants indicated that they were very satisfied with the concept and production of renewable assignments and the instructor endorsed renewable assignments as more pragmatic than disposable assignments. Both the instructor and students can collaborate to produce open textbooks based on OER renewable assignments. In addition, both students and instructor reported that the factor that most influenced them to produce renewable assignments was making them publishable and citable. The potential to share work with others and make the assignments available for future students also encouraged students to adopt the idea of OER renewable assignments in their future courses.

One of the more significant findings to emerge from this study is that the majority of students, 71.43%, would be willing to share their future works in public under a CC-BY license to make knowledge available publicly, and to help others by sharing their works as examples for future students. The findings from this study underline that the main concern regarding sharing students' assignments in public is the level of quality of these works. As a result, it was suggested that a change in current pedagogical practices could be made to provide students with feedback on previous class assignments to support current students to enhance the quality of their assignments.

The research reported in this paper suggests that the idea of renewable assignments can be accommodated by both students and instructors. Areas of improvement when redesigning the intervention for the next class were suggested, such as making the instructions for assignments an integral part of the course syllabus. This can be approached by developing a guide for students on how to develop the renewable assignments in more detail, letting students reflect about their learning and value their works beyond the boundaries of the classroom. Finally, this study lays the groundwork for future research into immersing students in the use of OER and taking them through the whole process of turning their assignments into OER. These findings provide insights for future research to investigate the pedagogical models that tend to support student-generated OER.

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Appendix 1: Survey Questionnaire and interview questions

Survey Questionnaire

BASIC DEMOGRAPHIC
The following are general questions related to you and your courses at George Mason University (GMU).

Q1. Select your gender
o   Male
o   Female

Q2. What is the length of your work experience?
o   Less than 1 year
o   1–2 years
o   3–4 years
o   5–6 years
o   7–8 years
o   9–10 years
o   More than 10 years

Write   your   job   title_____

Q3. Are you currently a full-time or part-time student in your program?
o   Full-time
o   Part-time

AWARENESS OF OER

The remaining questions are related specifically to the open educational resources (OER) and the concept of renewable assignments that your instructor used in this course for your class readings and class activities.

Q4. "Open Educational Resources 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 and repurposing by others. OER include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge" (William Flora and Hewlett Foundation, 2002). In this course, you have been introduced to OER. To what extent have you become knowledgeable about OER?
o   Very knowledgeable
o   knowledgeable
o   Somewhat knowledgeable
o   Not knowledgeable
If your response to the previous question was either "Very knowledgeable," "knowledgeable," or "Somewhat knowledgeable," please answer questions 5 and 6.

Q5. What do you think is the most important value of OER? Please, check all that apply
o   Cutting down the costs of subscriptions and publications
o   Promoting flexibility and customizability (user can modify, innovate, or reuse OER in specific contexts for any purpose)
o   Promoting shareability
o   Contributing to continuous improvement of OER materials because of 5Rs practices
o   Promoting personalized learning (user selects what he/she wants to learn and how to learn)
o   Equalizing access to information for all
o   Enhancing learning performance
o   I am not sure

Q6. How would you rate the quality of the OER used for this course? (They were found under the assignments, CLE presentation, and research brief.)
o   WORSE than the quality of the traditional texts in the courses
o   About the SAME AS the quality of the traditional texts in the courses
o   BETTER than the quality of the traditional texts in the courses

Q7. Which database(s) do you always use for your own search? Please, check all that apply
o   Google
o   Wikipedia
o   Journal of Online Learning and Teaching (Merlot)
o   Directory of Open Access Journals (DOAJ)
o   OER Knowledge Cloud
o   None

The following questions are related to your Satisfaction with the concept of renewable assignments, willingness to adopt renewable assignments in future courses, and the factors and obstacles to adopt this new idea

Q8. The renewable assignment is defined as "an artifact that has personal meaning to students and is shared publicly under the open license of creative commons CC-BY." Please rate your satisfaction regarding the concept of renewable assignments in the course:

Unsatisfied	Somewhat Satisfied	Satisfied	Very Satisfied	Extremely Satisfied
(1)	(2)	(3)	(4)	(5)

Q9. If your response to the previous question was 1, please explain:_____

If your response to the previous question was either 2, 3, 4, or 5, please answer the following question.

Q10. What are the most important factors that influenced you regarding the renewable assignments? Please, check all that apply
o   Publication credit
o   Intrinsic motivation
o   The pleasure of being involved in peer production
o   Sharing work with others for educational purposes

o   Stimulating innovation
o   Others _____

Q11. Now that you understand the concept behind renewable assignments, are you willing to share your future assignments of other courses with others under an open license?
o   Yes
o   No
o   I am not sure
Explain:_____

Q12. What do you like best about the renewable assignments approach in the course?

_____
_____

Q13. What do you think are the main barriers that hinder you from publishing your assignments under the creative commons license?

_____
_____

Q14. If you would like to participate in future studies in the area of open educational resources, please write your email: _____

Write your job email: _____

Interview Questions
Q1. How do you perceive the concept of renewable assignments in the adoption of OER?
Q2. How do you perceive the value of implementing renewable assignments in your class?

1.   What works well? What is your concern regarding applying renewable assignments in your class? Why or why not? If so, how it can be solved?

Q3. How do you perceive the quality of OER were used in your course?
Q4. With reference to "renewable assignments", what do you think the most important information or understandings that graduate students need to know about?
Q5. In your opinion, do you think your current pedagogy practices used for this course must change with adopting the concept of student-generated OER in a form of renewable assignments?
Q6. What do you think, the types of pedagogy practices can support students-generated renewable assignments?
Q7. Can you describe the drivers might encourage your students to turn their assignment to OER/ renewable assignments?
Q8. Overall, how do you describe the students' motivation to go with the concept of renewable assignments? What concerns do they have?
Q9. Do you have any comments regarding improving the intervention for the next class. What suggestions do you have for future improvement in the implementation?