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Developing Open Practices in Teacher Education: An Example of Integrating OER and Developing Renewable Assignments

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Abstract

This manuscript offers a reasoning for and example of integrating Open Educational Resources (OER) and open pedagogy within a teacher education course. We highlight a collaborative partnership between library faculty and education faculty and the decision points and processes we used when redesigning this course to provide an example of adopting OER and our considerations for developing a renewable assignment. The benefits of using OER for K-12 teachers include increasing awareness of and providing opportunities to develop open practices. The transition to a renewable assignment creates a space for teaching candidates to meaningfully contribute to the profession and engage in collaboration across time and space. Teacher education programs provide an ideal space to develop digital literacies and open practices.

Keywords: OER, open education, OER-enabled pedagogy, open pedagogy, teacher education, renewable assignments

Introduction

Adoption of Open Educational Resources (OER) in the United States is often discussed in relation to institutions of higher learning, neglecting the potentially critical role of these materials in Kindergarten through 12th grade (K-12) education. OER refer to materials assigned Creative Commons licenses, which allow for the materials to be retained, reused, revised, remixed, and redistributed (the 5R permissions; Wiley, n.d.). Within the K-12 landscape, reports of OER use by teachers is limited because change occurs at the “highly bureaucratic state level or at the hidden local level” (Kimmons, 2014, p. 72). School districts across the nation routinely make local decisions regarding curricular materials, with OER just beginning to gain recognition as a valuable classroom resource. The State Educational Technology Directors Association (SETDA), an organization of state education agency leaders, maintains a website with resources for integrating OER in K-12 education (SETDA, n.d.). Yet, more than a website is needed for K-12 teachers to develop the skills required to adopt, adapt, and create OER. Kimmons (2014) has asserted that we have yet to explore the best ways to support teachers in adopting open practices for teaching and learning. Teacher education programs provide an opportunity to raise awareness of OER, as well as create space for teachers to explore open practices that may be incorporated into their developing pedagogy.

In New York, the public university systems (CUNY and SUNY) received funding for the adoption and creation of OER (New York State, Office of the Governor, 2018). With this support, New York teacher education programs can simultaneously eliminate textbook costs by assigning OER and utilizing open pedagogy practices to encourage K-12 teachers to create and adapt OER in their classrooms. Teacher educators have a unique opportunity to introduce teacher candidates to the concepts of open education. In this manuscript, we discuss why and how a teacher education course was transformed to include OER and open pedagogy. Open pedagogy, also commonly referred to

as OER-enabled pedagogy, incorporates a student-centered approach to teaching and authentic learning experiences in which students participate as creators in the design of open content using the 5R permissions (Wiley & Hilton, 2018). Renewable assignments, those that add value to the world because students share their work openly using 5R permissions, are one such approach to open pedagogy (Wiley & Hilton, 2018). In this paper, we highlight a collaborative partnership between education faculty, Van Allen, and library faculty, Katz, and our decision points and processes of redesigning a teacher education course that may be used as an example for others engaging in this work. The course redesign included three stages of reconsidering the course: OER integration, preparing for OER-enabled pedagogy with the development of a renewable assignment, and our considerations for scaffolding student learning about OER and negotiating choices about sharing their work. The scope of this paper is limited to the design decisions we made, not the implementation of and student reactions to the course.

OER and Open Pedagogy

Open pedagogy reconceives the notion of who creates knowledge and provides a pathway to empower students as creators. DeRosa and Jhangiani (2017) framed this concept as “a site of praxis, a place where theories about learning, teaching, technology, and social justice enter into a conversation with each other and inform the development of educational practices and structures” (para. 2). Within the past ten years, the term “open pedagogy” has been linked to open practices that are enabled by teaching with OER, or “high-quality teaching, learning, and research materials that are free for people everywhere to use and repurpose.” (Hewlett Foundation, n.d., para. 7). This discourse around the terminology has led to the concept of OER-enabled pedagogy, a “set of teaching and learning practices that are only possible or practical in the context of the 5R permissions which are characteristic of OER” (Wiley & Hilton, 2018, p. 135). In this teaching approach, the permissions afforded by OER present new pedagogical opportunities and invite authentic learning as students create, remix, and share their ideas to further knowledge in their discipline (Wiley & Hilton, 2018). Students learn more from activities that require them to apply learning rather than merely complete an activity for practice (Lombardi, 2007). Thus, teaching with OER has resulted in numerous benefits for students, including free access to knowledge, a culture of participation, and opportunities for innovation and creativity (Hegarty, 2015).

Leveraging the possibilities afforded by these permissions creates a space for students to complete assignments that extend beyond a grade. This shift from a “disposable assignment” to a “renewable assignment” empowers students to generate OER materials (Jhangiani, 2017; Wiley, 2013). Stommel (2015) discusses how “we [teachers] can open our classroom by creating assignments that have more reason than just a single teacher as an audience. By doing this, we give students reasons less banal than points to do the work of learning” (p. 23). Renewable assignments can be positioned to have greater impact through time, space, and gravity, particularly as they have longevity, reach, and value (Seraphin et al., 2018).

Wiley and Hilton (2018) developed criteria to distinguish assignments into four categories - disposable, authentic, constructionist, and renewable. The disposable assignment is one in which a student simply creates an artifact. In an authentic assignment, the artifact developed has value beyond the student’s own learning. Students make their authentic assignment public and beyond the bounds of the teacher-student relationship in a constructionist assignment. To make an assignment renewable, students openly license an artifact that has value beyond the student’s own learning and that has been made public. Wiley and Hilton (2018) have posed the following four questions to determine if an assignment is renewable:

1. Are students asked to create new artifacts (essays, poems, videos, songs, etc.) or revise/remix existing OER?
2. Does the new artifact have value beyond supporting the learning of its author?
3. Are students invited to publicly share their new artifacts or revised/remixed OER?
4. Are students invited to openly license their new artifacts or revised/remixed OER?

In answering yes to all of the questions, an assignment can be considered renewable and a product of OER-enabled pedagogy.

OER and Open Pedagogy in Teacher Education

Given that the current incarnation of open pedagogy is a relatively new concept, little research has been conducted on the use of OER and open pedagogy in teacher education. The scant existing research comes from outside the United States. These initiatives have included the Teacher Education in Sub-Saharan Africa (TESSA) program, created as a long term sustainable program for providing quality, freely available, easily adapted, digital materials for teachers and teacher education programs in an effort to improve teaching and learning in Africa (Murphy & Wolfenden, 2013). Another initiative in Southern Africa documented the process nine mathematics teacher educators employed when creating and implementing OER across multiple universities as they strove to improve access to quality teacher education resources in mathematics (Sapire & Reed, 2018). Each of these projects and programs pointed to key benefits for all involved, particularly related to collaboration, increased teacher awareness of OER, improved access to knowledge (particularly in developing countries), and better adaptation of curriculum.

While some teacher educators simply assign OER, others are engaging teacher candidates in opportunities to create and share knowledge. For example, the Digital Futures in Teacher Education (DeFT) project involved teachers, student teachers, and teacher educators as equal partners in exploring digital literacy as they collaboratively designed OER focused on digital literacy practices in schools (Gruszczynska, Merchant, & Pountney, 2013). Tur, Urbina and Moreno (2016) engaged student teachers in creating digital stories utilizing Creative Commons resources that were then shared under a Creative Commons license. Additionally, Kim (2018) published a framework for implementing OER-based lesson design activities with preservice teachers. Findings have demonstrated that open pedagogy develops teacher identities, improves professionalism, empowers teachers, and provides connection to a global community through the creation of shared content (Kimmons, 2014).

In teacher education, open pedagogy is particularly valuable as it provides teacher candidates with opportunities to develop a professional practice that privileges collaboration and innovation within the teaching community. This is especially important because beginning teachers often feel isolated and alone as they navigate the complexities of teaching, while forming teacher identities (Clandinin et al., 2015). Developing open practices in teacher education programs creates community and connections within the profession across time and space.

Our Methodology for Redesigning the Course

In this project, we redesigned a teacher education course in literacy and technology to adopt OER in lieu of a course textbook and adapt the final course assignment utilizing an open pedagogy approach. The intent of the course redesign was to introduce the teacher candidates to OER, help teacher candidates understand aspects of Creative Commons licensing, and experience finding, adapting, reusing, remixing, and creating OER. Given the success of previous research findings in supporting student teachers' use of OER through experiences in teacher education course work

(Tur et al., 2016), the emphasis was on developing the teacher candidates' identities as creators of knowledge and empowering them as innovators and global collaborators in meaningful use of technology in literacy classrooms. Additionally, Kimmons (2014) found that the most important factors in creating a positive open education experience are learning activities involving collaborative group work with other professional educators and an instructor modeling open educational practices and facilitating collaborative learning. Reflection on our decision-making points and processes revealed three stages of the course redesign displayed in Figure 1. In stage 1, we strategically selected the course and identified appropriate OER. During stage 2, we took steps to prepare for OER-enabled pedagogy, including the development of a renewable assignment. Finally, stage 3 consisted of our specific considerations for teaching students about OER and assigning Creative Commons licenses to their work. These stages are described in more depth below.

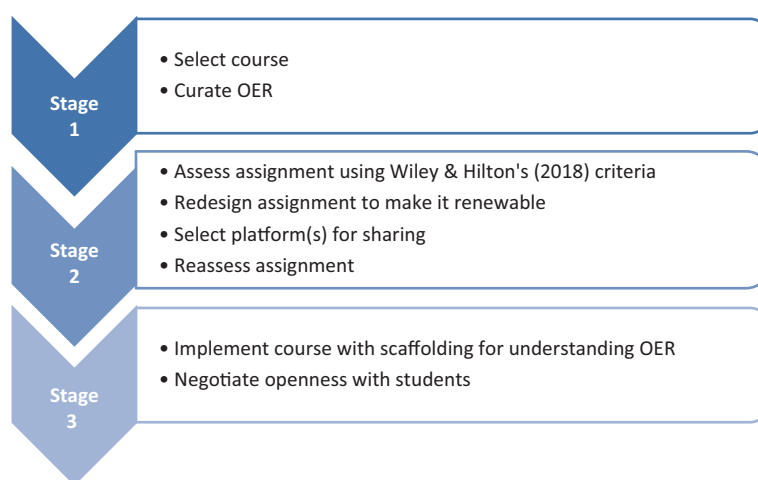


Figure 1: Stages of Decision-Making for the Course Redesign.

Stage One - Course Selection and OER Integration

As a professor of Literacy Studies, Van Allen developed interest in OER after attending a training regarding Creative Commons licensing and reviewing OER materials. In consultation with Katz, the Open Resources Librarian, Van Allen carefully considered which course would have the most impact within the program. Van Allen selected her course for literacy teachers titled *Language, Literacy, and Education Technology*. The course focuses on a comprehensive analysis of major topics and concepts related to language and literacy instruction in the 21st century, including digital literacies, critical media literacy, online research and comprehension skills, multimodality, gamification, and the ethos of participation in a global community. Additionally, the nature of OER and openly licensed materials lends itself well to a course focused on technology, given its evolving nature. Therefore, in addition to easing the financial burden on her students in the absence of a textbook, Van Allen is also able to model open educational practices and advocate for the teacher candidates' use of OER in K-12 education.

Thus, our collaborative work began. Katz helped locate OER related to the course and explained the meaning behind Creative Commons licenses. As Van Allen reviewed and explored these OER, she discovered other openly licensed journals and teacher resources to incorporate into not only the redesigned course, but other courses as well. Moving to a Zero Textbook Cost course often entails

replacing one commercial textbook with multiple Creative Commons-licensed, library-licensed, and free online resources, including book chapters, journal articles, videos, and websites, as was our experience.

When choosing OER to use in the course, Van Allen carefully curated resources that not only fostered an understanding of the key concepts, but also envisioned the concepts in classroom practice to support application in teacher candidates' lesson design. Furthermore, Van Allen selected resources that provided lesson plans and materials that may be utilized in the classroom. For example, in addressing content on critical literacy skills, teacher candidates are directed to view a blog post by a researcher in the field of literacy education, which incorporates historical background of the topic and clearly defines critical literacy using embedded videos, as well as text to exemplify points. In addition, teacher candidates read an open access journal article clarifying myths about critical literacy education. During the class session, candidates will engage in a critical literacy model lesson utilizing a freely available video advertisement and explore free critical literacy lessons posted on the popular website *Read, Write, Think* to evaluate the extent to which critical literacy skills are developed.

Stage Two - Preparing for OER-Enabled Pedagogy

During another workshop on OER and open pedagogy, Van Allen pondered her disposable course assignments, where student work basically dies in the learning management system. Given the course emphasis on teaching literacies of global collaboration, it felt natural to shift the final course assignment, a technology integration project, to a renewable assignment that could be adapted and remixed by future classes while participating in the global teaching community. Table 1 provides the assignment description for the original assignment and the redesigned renewable assignment.

The original assignment was designed to provide the teacher candidates choice in how they demonstrated knowledge of ways they may support students' 21st century literacy skills in their own classrooms. Utilizing best practices of technology integration in education, the assignment design modeled a student-centered approach, involving choice, creativity, and flexibility in the final design of a meaningful classroom resource, taking the form of a unit or lesson plan, yearlong implementation plan, class project, etc. While the original assignment involved creating an authentic artifact, it did not provide an opportunity to collaborate on an existing resource or share their work with others using Creative Commons licensing.

As Van Allen explored OER and made connections to K-12 education, she considered ways to empower the teacher candidates to engage in global teaching communities. Why not provide teacher candidates with the opportunity to share their projects and influence curriculum more widely? Therefore, Van Allen consulted with Katz regarding tools for sharing teaching resources. Katz, serving as the knowledgeable OER specialist, suggested the use of *OER Commons*, "a public digital library of open educational resources" that encourages users to "explore, create, and collaborate with educators around the world to improve curriculum" (OER Commons, 2019, para. 1, <https://www.oercommons.org/>).

Van Allen then reworked the assignment description to provide teacher candidates with options regarding their project utilizing open resources. Rather than requiring the teacher candidates to create something new, she invites them to explore the resources on *OER Commons* or in the shared class resources collection, which is stored on Google Drive and serves as a space for projects from previous classes. If they find something useful for their classroom, they may adapt,

remake, and/or remix the resource (as allowed by the licensing on the source) to better fit the needs of their local school, student population, grade level, state standards, etc. Alternatively, they may choose to design a new resource.

Table 1: Technology Integration Project Assignment Descriptions

Original Assignment	Renewable Assignment
<p>For the culminating assignment in this course, you will design your own project that creatively demonstrates how you will integrate technology/new literacies into your classroom in meaningful ways as a result of what you learned during this course. Your project should exhibit your understanding of the skills students need to be successful in the 21st century and create experiences for students that utilize best instructional practices for integrating these skills into literacy instruction. For example, your project may demonstrate how you empower learners to actively create, collaborate, and/or design. Be sure to include the grade level and specific standards that may be addressed in your project. Ultimately, this project could take many varied forms, so be creative! You may use the ideas we have discussed in class, instructional strategies from your self-selected book, etc. to guide your project. Some ideas are:</p> <ul style="list-style-type: none"> • A series of lesson plans (or a unit plan) • An inquiry unit with a digital performance task embedded and different modes of text used within the unit • A collection of technological resources with minilessons on how/when to use them • Exemplar models of projects you intend to complete with students • Yearlong plan of how you will integrate a specific technological resource into your classroom 	<p>For the culminating assignment in this course, you will design, adapt, or remix an OER resource to share on <i>OER Commons</i> (https://www.oercommons.org/), then implement it in your classroom. You can design your project from scratch, adapt your project from existing work in your classroom, or adapt, remake, or remix an OER that already exists on <i>OER Commons</i> or in the class shared resource collection on Google Docs. After designing, adapting, remaking, or remixing your OER resource, you are required to upload it in EDR 529's shared resource collection and on <i>OER Commons</i> using the resource or lesson builder. When you submit your work to Blackboard, you should include a link to the resource on <i>OER Commons</i>.</p> <p>Your project should creatively demonstrate how to integrate technology/new literacies into your classroom to support literacy learning in meaningful ways as a result of what you learned during this course. In addition, your project should exhibit your understanding of the skills students need to be successful in the 21st century and create experiences for students that utilize best instructional practices for integrating these skills into instruction. For example, your project may demonstrate how you empower learners to actively create, collaborate, and/or design. Be sure to include the grade level and specific standards that were addressed in your project.</p> <p>Ultimately, this project could take many varied forms, so be creative! In designing your project, you should use ideas we have discussed in class, instructional strategies from your self-selected book, technology integration ideas from our texts, etc. to guide your project. Some ideas are:</p> <ul style="list-style-type: none"> • A module that includes multimodal resources for a unit of instruction with plans to support their use in the unit and resulting evidence of student use • A series of lesson plans (or a unit plan) with examples of student work • An inquiry unit with a digital performance task embedded and different modes of text used within the unit with examples of student work • A collection of technological resources with mini lessons on how/when to use them and examples of student work after implementation of the resources • Exemplar models of projects you completed with students along with student attempts • Yearlong plan of how you will integrate a specific technological resource into your classroom

After designing the renewable assignment, Van Allen consulted with Katz to determine if it met the criteria for open pedagogy, or OER-enabled pedagogy. Viewing the assignment through the questions posed by Wiley and Hilton (2018), it indeed met the criteria of OER-enabled pedagogy:

1. Are students asked to create new artifacts (essays, poems, videos, songs, etc.) or revise/remix existing OER? *Yes, students are creating modules and lessons for their classroom.*
2. Does the new artifact have value beyond supporting the learning of its author? *Yes, value is extended to other teachers and their students.*
3. Are students invited to publicly share their new artifacts or revised/remixed OER? *Yes, students are invited to share their lessons publicly on OER Commons.*
4. Are students invited to openly license their new artifacts or revised/remixed OER? *Yes, students are invited to provide an open license in their submission to OER Commons.*

Stage Three - Considerations for Student Learning

In redesigning the course, Van Allen made decisions during course planning on how to introduce teacher candidates to the concept of OER to support their understanding of these resources and licensing, explore the variety of OER available, evaluate the resources for quality, and model use of OER in lesson planning and classroom learning. Initially, teacher candidates are engaged in using OER to understand the content by accessing resources and noticing the licensing symbols, including copyrighted material and the Creative Commons licensing symbols. As candidates examine and develop an initial understanding of Creative Commons licensing and open access resources, they begin selecting and evaluating OER. In particular, teacher candidates search open education repositories, search engines, and content creation tools widely used in K-12 education, such as *OER Commons* (www.oercommons.org), *MERLOT* (www.merlot.org), *Project Gutenberg* (<http://www.gutenberg.org/>), *CK-12* (www.ck12.org) and *Curriki* (<https://www.curriki.org/>). As a course requirement, teacher candidates create an account on *OER Commons* and use the rubrics incorporated within the tool to evaluate a self-selected OER, resulting in a contribution to the community. Once they become more proficient in selecting and evaluating resources, they consider ways to adapt and remix these resources to support student learning of content and develop students' digital literacy skills. Finally, teacher candidates then engage in adapting, remixing, or creating, and sharing/resharing OER in the final course assignment, the Technology Integration Project. As their work with the OER evolves, the intention is for teacher candidates to develop their own digital literacy skills as they engage with a variety of tools and platforms. The scaffolding of the course redesign is meant to provide an encouraging low stakes entry into the world of OER, moving from simply accessing OER content to contributing OER content.

Negotiating openness. Although all teacher candidates are required to submit their final project to the shared class resources collection on Google Docs, they have a choice regarding whether or not they want to submit their resource on *OER Commons*. Cronin (2017) has identified four levels at which individuals must make decisions when engaging in open networks and sharing as they balance privacy and openness within participatory technologies. At the macro level, individuals must determine whether or not they want to share their work and ideas openly. If they choose to share, they must then negotiate whom they would like to share with (meso level), which digital identity they will share as (micro level), and the types of individual transactions they would like to engage in after sharing (nano level; Cronin, 2017). This is a point of discussion and reflection within the class as teacher candidates make decisions regarding their work.

In addition to negotiating decisions regarding sharing, the teacher candidates also must decide the type of Creative Commons license to use in sharing their work. For example, resources adapted or remixed from a share alike license must be shared with the same license. Therefore, they must fully understand the implications of the license permissions on the resource they chose to adapt, revise, or remix. When creating a new OER, teaching candidates must consider the implications of licensing decisions on how others may use their work. As Cronin (2017) notes, openness “is always complex, personal, contextual, and continually negotiated” (p. 18). Therefore, Van Allen supports students in making thoughtful, informed choices about sharing their work through classroom discussion.

Future Research and Conclusion

Teacher educators are well-positioned to evolve future use of open practices within the K-12 curriculum. As they model the adoption of OER and open practices, teacher educators encourage candidates to reimagine their agency, as they grow professionally and contribute meaningfully to the global teaching community. The focus of this manuscript is on the process we employed when redesigning a teacher education course to include OER and a renewable assignment. Our perspective is limited as we have not yet examined the impact of the course changes. Therefore, further research is needed to explore how developing open practices in teacher education programs may add value to these learning experience and ultimately impact K-12 teaching practices. We plan to assess the impact of these changes on learning outcomes by comparing the choices for OER use and quality of candidates’ work on the original assignment to the renewable assignment. For example, exploring whether students chose to remix or revise an OER or create a new OER and their rationales for doing so could provide valuable data in evaluating how and why teachers candidates may choose to use OER in the future student learning. Additionally, to assess the impact of these course changes on student perceptions, we will examine their reflections through artifacts, surveys, and interviews. Another limitation of our work is that we have not yet examined how our process may be extended for use in teacher education courses that do not emphasize digital literacies. However, we believe that this example is adaptable by others to support future development and use of OER in K-12 classrooms. Although this is challenging work, our greatest hope is to influence teacher candidates to develop open practices and become empowered to engage in the global teaching community.

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