

Course Design Practices Using Open Educational Resources (OER)-Enabled Pedagogy in Language Teacher Education

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Online Learning

Course Design

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Pre-service Teachers

language teacher identity

Promoting pre-service teachers' professional development is challenging because it requires adopting a new teacher identity and building professional skills. This challenge is further complicated when pre-service teachers learn online. In this article, the authors describe two design cases of adopting OER-enabled pedagogy in language teacher education during the COVID-19 lockdown. We argue that OER-enabled pedagogy can provide effective learning opportunities, engage learners, and help pre-service teachers build professional identity. The design cases offer insights into adopting OER-enabled pedagogy in various contexts, which is especially important given the increasing need for quality distance learning during regular and emergency situations.

Introduction

Open Educational Resources (OER), which refer to educational resources that allow learners to revise, remix, redistribute, retain, and reuse (5Rs) the content (Wiley, 2013), have recently gained researchers' and educators' attention. According to the Open Education Group (n.d.), OER-enabled pedagogy, also called open pedagogy (Wiley & Hilton, 2018), is "the set of teaching and learning practices only practical in the context of the 5R permissions characteristic of open educational resources."

OER-enabled pedagogy can engage learners by giving them the opportunity to co-generate knowledge, making learning more participatory and meaningful (DeRosa & Robison, 2017; Werth & Williams, 2021; Wiley et al., 2017). For example, Van Allen and Katz (2019) developed renewable assignments for teacher education programs by encouraging them to leverage OER for their projects and use Creative Commons licensing to make them available for public use. With OER-enabled pedagogy, learners can create renewable assignments that can be valuable and available to others with open licenses (Wiley & Hilton, 2018). Wiley and Hilton (2018) categorized four types of assignments: disposable, authentic, constructionist, and renewable. Disposable assignments are those in which students simply create artifacts. In authentic assignments, students produce artifacts that have value beyond their own learning. Constructionist assignments involve sharing the products of authentic assignments with others. In a renewable assignment, students openly license artifacts, making them available to the wider public for purposes beyond student learning, which significantly increases the value learners place on their efforts (Al Abri & Dabbagh, 2019; Hilton et al., 2019; Sheu, 2020). Moreover, OER-enabled pedagogy can positively impact learners' learning engagement and achievements (Grissett & Sheu, 2023; Hilton et al., 2019; Sheu, 2020). Grissett and Sheu (2023) adopted open pedagogy by using renewable assignments in a developmental psychology course. In this study, students were encouraged to write assignments and provide feedback on peers' assignments. They found that using renewable assignments could engage learners in active learning.

Prior research on OER has been examined from different perspectives, in particular in teacher education. OER has been examined in terms of their value (e.g., Wiley, 2016), accessibility (e.g., Martin et al., 2017), teaching and learning support (e.g., Van Allen & Katz, 2020), quality compared with that of conventional textbooks (e.g., Cummings-Clay, 2020), and students' perceptions (Shedlosky-Shoemaker, 2023). In the field of teacher education, Karunanayaka and Naidu (2013) investigated faculty collaboration during the process of developing OER for teacher preparation courses. Cummings-Clay (2020) conducted a quantitative study to compare pre-service teachers' learning outcomes in a course adopting OER with those in a parallel course using traditional textbooks. The findings showed that OER and textbooks were equally beneficial. Van Allen and Katz's study (2020) demonstrated the value of using OER during the pandemic and provided a list of OER to encourage educators to adopt them. Shedlosky-Shoemaker (2023) conducted experimental research comparing learners' perceptions of instructors with different textbook options, especially between the instructors who used OER versus high-cost traditional textbooks. The findings indicated that students had more positive perceptions of instructors who used OER due to the accessibility. However, few studies have introduced the process of creating OER and using them as resources for preparing future teachers who might be utilizing them. Given that educators are primary users and creators of OER, it is worth introducing OER and OER-enabled pedagogy in teacher preparation programs as well as providing opportunities for pre-service teachers to participate in open educational practices (OEP).

Desimone (2009) argued that teachers' professional training should focus on developing their content area knowledge as well as pedagogical and collaborative skills. In addition, pre-service teachers also struggle to form their professional identities. For instance, they experience difficulty enacting the role of a teacher rather than that of a student, and they also feel their knowledge is inadequate while being expected to act like experts (Pillen et al., 2013). According to Gee (2015), developing an identity is a process of accepting and practicing certain ways of "behaving, interacting, valuing, thinking, believing, [and] speaking" shared by a specific group or a discourse community (p. 3). For pre-service teachers, the transition from a student to a teacher is not only behaviorally but also cognitively and affectively challenging because they need to develop a "professional vision" so that they think, see, act, and solve problems like a teacher (Goodwin, 1994, p. 606). Professional identity formation is thus an ongoing negotiation and reconstruction process in which pre-service teachers constantly navigate their sense-making of themselves, their learning experiences, and their contexts (Alsop, 2006; Beijjaard et al., 2004). The connections and communications that happen both in and outside classrooms are important for pre-service teachers to create relations and interactions through which their professional identities are socially constructed and enacted (Akkerman & Meijer, 2011). Therefore, to provide effective teacher education in online settings and facilitate an emergent pre-service teacher community, it is vital to address the challenges of isolation and distance and build socially and professionally meaningful collaborations and interactions.

In this paper, we explored how our OER-enabled pedagogies (Wiley & Hilton, 2018) in two asynchronous online courses helped pre-service literacy teachers form their professional identities and build an online teacher community. By showcasing two OER projects that pre-service teachers created, we demonstrate our design and

implementation process step-by-step and reflect on the outcomes of adopting OER-enabled pedagogy in higher education, specifically in the field of teacher education. By describing our design cases, displaying our teaching practices and pedagogical activities, and discussing our specific rationales and considerations in the two projects, we hope to provide useful information and inspiration for educators interested in introducing open educational practices to pre- or in-service teachers. To pursue these goals, we report and reflect on our design and pedagogy in the format of a practitioner-oriented paper rather than analyzing our projects as empirical research.

Course Background

The two authors (C and P) each taught one of two semester-long, literacy methods courses: EDU301 Methods of Teaching Language Arts in K-3 and EDU302 Methods of Teaching Reading in Grades 4-6 in Spring 2021 at a large Midwestern public research university. Pre-service teachers in this university typically take EDU301 (3 credit hours), EDU302 (3 credit hours), and EDU303 Field Experience (1 credit hour) as a cluster in their sophomore or junior year to pursue a degree in elementary education; therefore, C and P shared the same eight students in EDU301 and EDU302 during the time of this project.

For most of our pre-service teachers, Spring 2021 was the second semester of online learning due to the Covid emergency. We heard their concerns about learning to become a teacher without connections from faculty, peers, and the children they were working with. Beauchamp and Thomas (2009) stated that pre-teachers must undergo a shift in identity throughout their years in teacher education. However, during the pandemic, our pre-service teachers could not physically observe and practice teaching in school settings. Although they were paired up with local elementary students and practiced tutoring via Zoom, tutoring and communicating via Zoom and email were not always smooth. Many pre-service teachers were unable to reach out to the child and family as scheduled. As young professionals, they were also struggling with their own stress and negative thoughts due to the prolonged disconnection from their learning and social communities (Son et al., 2020).

As instructors for the cluster, C and P wanted to engage our pre-service teachers in authentic learning and create a positive and supportive online learning community during the pandemic. Hence, we decided to adopt open pedagogy in our class, as it can be implemented within an online learning environment to provide students with opportunities to actively engage and share knowledge with a broader range of audiences, thus cultivating a mindset that values openness (Wiley, 2016). We also wanted to take the opportunity to invite students to co-create new knowledge with each other and engage in meaningful and collaborative learning that would be helpful for their own future work as a teacher. Collaboratively, C and P included two OER projects in their curricula for the same group of eight pre-service teachers in EDU301 and EDU302. Both were online asynchronous courses. Upon the completion of the course/learning unit, C and P expected the students to have (1) generated a solid understanding of the content knowledge embedded in these two projects, (2) collaboratively created educational materials for their future use, and (3) cultivated and demonstrated professional identities through sharing knowledge with other elementary teachers and a wider teaching community.

The Design Process

At the beginning of the design stage, C and P brainstormed the joint goals and approaches of the two projects to integrate the experiences of our shared group of students. We came to an agreement that first we would like to involve the pre-service teachers in creating OER through different modalities so that they could experience and understand the various modes and formats that OER might take. In this way, the pre-service teachers would be aware of ways to employ “multimodal literacy” (The New London Group, 1996) in their future teaching as literacy and language educators. Second, as EDU301 focused on teaching language arts at the lower-elementary level and EDU302 on teaching literacy at the upper-elementary level, we planned to involve pre-service teachers in producing OER projects closely related to the objectives of each of the two courses. Doing this would allow pre-service teachers to see how to make use of and create OER for students across different age groups. Third, as the pre-service teachers were being introduced to open pedagogy approaches while learning the course content, there were many novel concepts for pre-service teachers to unpack. Involving them in learning and practicing OER in two courses at once distributed the learning curve over a broader base and reduced its incline. Therefore, we decided to include a video-based OER project in EDU301 and a text-based OER project in EDU302. Below is a table that summarizes the instructional goals, learning activities, and the OER products for each type of project.

Table 1

An overview of two OER-enabled pedagogy projects in our language and literacy teacher education courses

Learning goals		Learning activities	OER products
Project 1: Video-based OEREDU301	<ul style="list-style-type: none">Learn strategies to teach phonemic awareness and phonicsDesign instructional activities to teach phonemic awareness and phonics in a virtual environmentPractice OER-enabled pedagogy through hands-on online learning experience	<ul style="list-style-type: none">Assign readings about phonemic awareness and phonicsWatch pre-recorded lecturesObserve exemplars of instructional videos teaching phonemic awareness and phonicsAssign group projects on designing instructional activities and creating videos	A collection of YouTube videos showcasing pre-service teachers' ideas of teaching phonemic awareness and phonics in a virtual environment
Project 2: Text-based OEREDU302	<ul style="list-style-type: none">Learn strategies to incorporate multimodal texts in literacy instructionDevelop skills to teach children digital literacies through inventing and using multimodal texts on digital platformsPractice OER-enabled pedagogy through hands-on online learning experience	<ul style="list-style-type: none">Assign weekly blog postings to prepare students for both the content and the design of their final OER book projectAssign readings that introduce OER-enabled pedagogyProvide real-life examples of OER literacy projectsInvite students to collaborate on an OER book related to literacy methods	A collection of book chapters on pre-service literacy and language teachers' strategies for teaching reading and writing

During the entire implementation from the planning stage, C and P maintained constant communication with each other. We documented our reflections on a shared Google Doc throughout the semester and debriefed our teaching practices together afterward. The continuous conversation allowed us to better understand each other's projects, provide feedback on the implementations, and maintain the direction of our shared and distinctive learning objectives. In the following sections, we describe the design ideas, implementation, and reflections on the overall collaboration in detail.

Project 1: Video-based OER

Design Idea

P decided to embed a video-based OER project into teaching concepts of phonemic awareness and phonics, one of the major learning units of EDU301. Phonemic awareness involves identifying and manipulating meaningful sounds. For example, when a 5-year-old child hears the word "sit," the child is expected to distinguish three meaningful sounds in the word, /s/-/i/-/t/. While phonemic awareness refers to the "sound play" in a language, phonics refers to letter-sound correspondences. For instance, a kindergarten teacher may ask, "In the word sit, which letter makes the /t/ sound?" Then, the child is supposed to respond, "The letter t."

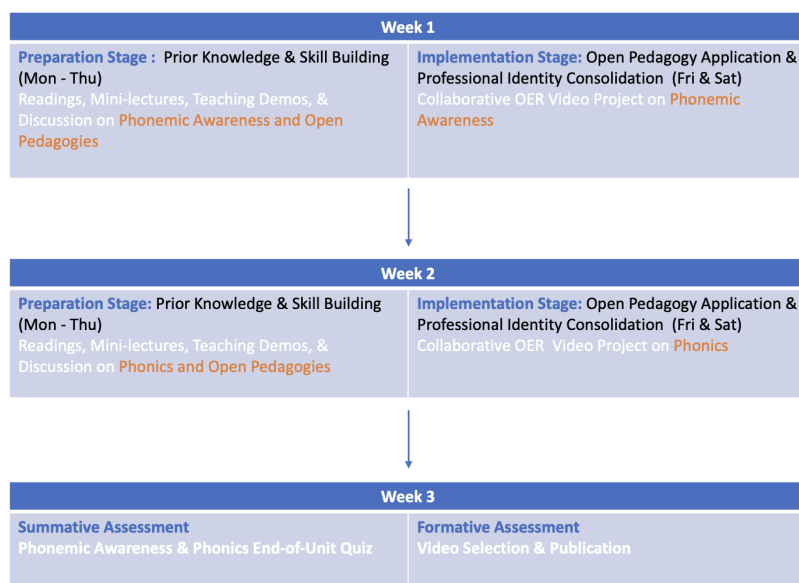
When EDU301 was delivered face-to-face, pre-service teachers learned phonemic awareness and phonics through hands-on activities in class because they could experience how young children learn these concepts. Typically, P would first explain the concepts, show several teaching demonstration videos, and provide art supplies for pre-service teachers to create their own phonemic awareness and phonics activities for later use in their lessons. However, when switching to asynchronous online learning, the pre-service teachers could only watch pre-recorded lectures and classroom videos without opportunities to create and practice hands-on activities. Therefore, P decided to teach the two literacy concepts through an OER project and involve the pre-service teachers in doing authentic unit assignments (Wiley & Hilton, 2018). At the end of this learning unit, the pre-service teachers were expected to collaboratively create two instructional videos to teach children phonemic awareness and phonics lessons in a virtual environment and share their reusable learning materials with a wider range of audience through YouTube. This assignment offered the pre-service teachers an opportunity to learn new instructional ideas by applying them to address a real problem (Lowell & Yang, 2023) faced by many teachers during the pandemic – teaching phonemic awareness and phonics to young children virtually. Additionally, the pre-service teachers could engage in editing and sharing their digital works, making them reusable and beneficial to a broader audience (Al Abri & Dabbagh, 2019). The design of the assignment thus featured an authentic context, authentic task, collaborative knowledge construction, and (oral) articulation, the qualities of authentic learning as suggested by Yang and Harbor (2023, p. 89). P expected this authentic learning opportunity to enhance the pre-service teachers' understanding of the content knowledge (Wiley et al., 2017) and learning motivation, as the learners could witness the value they have created by solving a real-life issue (Sheu, 2020). The following section explains how the video production was scaffolded.

Implementation

P designed a three-week learning unit in which pre-service teachers learned about phonemic awareness and phonics through 1) watching mini-lectures and teaching demonstrations videos, 2) creating phonemic awareness and phonics activities, and 3) introducing and demonstrating how to carry them out in a virtual classroom through a video. The pre-service teachers were also introduced to OER, OER pedagogy, and Creative Commons (CC) licenses, which enable creators to grant open access to their work by passing conventional copyright restrictions. Figure 1 demonstrates the pre-service teachers' learning experience in this learning unit.

Figure 1

A journey map of the design process, design elements, and student experiences of the video-based OER assignment in Project 1



During the first week, the whole class watched P's pre-recorded mini-lectures on OER-enabled pedagogy, CC licensing, and the concept of phonemic awareness. P also provided seven teaching demonstrations to allow pre-service teachers to observe how these activities could be carried out in classrooms or at home and explained the principles of open pedagogy and how the K-12 education would benefit from their digital works. Then, several students signed up for a particular type of sound manipulation (i.e., rhyming, matching, isolation, substitution, blending, or segmentation) and collaboratively created an instructional video with the adaptation of phonemic awareness activities that kindergarten teachers could use in a virtual environment. In the video, the members of each team introduced their activities and demonstrated how to carry them out in a virtual classroom. P specifically pointed out materials, tools, and art supplies that could be easily accessed at home. In this process, the pre-service teachers experienced how to revise and reuse the existing instructional materials (Wiley, 2013) as they made changes to face-to-face phonemic awareness activities and considered new ways to practice them in a virtual classroom. All the teams turned in their videos by the end of the week.

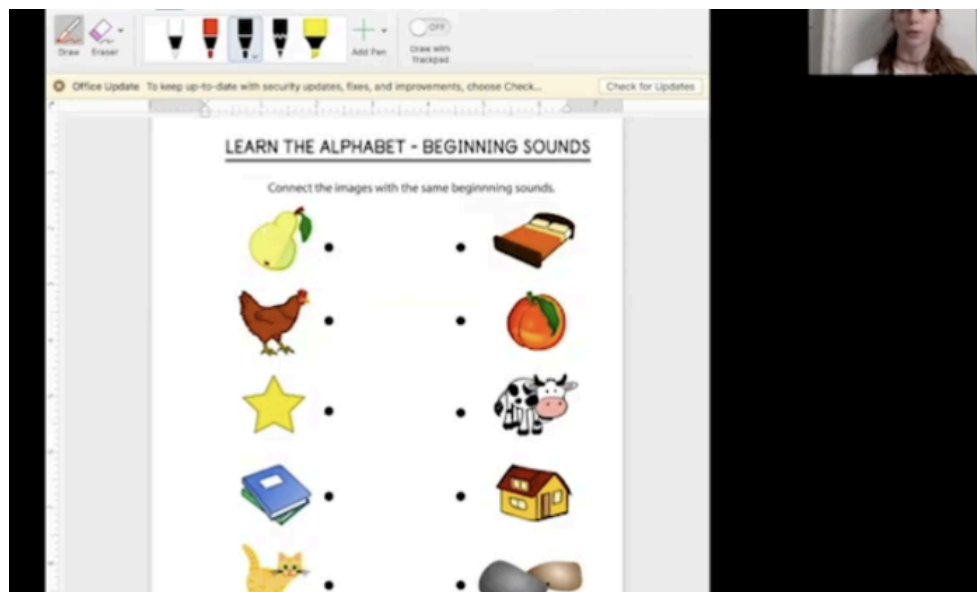
In the second week, the whole class continued learning about the concept of phonics as well as the difference between phonemic awareness and phonics. Similar to what they had practiced when learning phonemic awareness, the pre-service teachers worked in the same groups and created a video with two ideas for teaching phonics in an online environment. Again, they submitted the videos by the end of the week. In the third week, the pre-service teachers' understanding of phonemic awareness and phonics was assessed through an end-of-unit quiz.

P reviewed all the submitted videos and selected those that fulfilled the following criteria: 1) Learner appropriateness, i.e., they were appropriate for teaching phonemic awareness and phonics to children aged five to seven; 2) Online adaptability, i.e., they can be efficiently conducted in a virtual environment; 3) Accessibility, i.e., they

included learning materials that young learners can easily access at home; 4) Clarity, i.e., they were presented with clear instructions and explanatory language; and 5) Production value, i.e., they exhibited high-quality video and audio production. The selected videos were published on YouTube with a CC license.

Figure 2

An activity for teaching beginning sounds



As our videos included ideas for teaching phonemic awareness and phonics in a virtual environment, (see an example in Figure 2) this collection of student-created learning and teaching materials can be used by other educators or caregivers who are interested in teaching early literacy skills during this challenging time. While the pre-service teachers involved themselves in revising and reusing the existing instructional materials, they also provided new content to a wider range of audience, which increased the authenticity and value of their work (Sheu, 2020).

Implications and Reflections

P and C reflected on our design and pedagogical practices regularly throughout the semester via online Zoom meetings, mobile chats, and email communications, both formally and informally. The formal reflection sessions happened once a month with the cluster director. We also continuously shared our observations and reflected on our practices on a weekly basis. We served as each other's "critical friend" (Pinnegar & Hamilton, 2009), who challenged one another's personal interpretations, validated positive instructional moves, and assisted in recognizing adjustments to teaching. Our mutual reflections were also cross-checked with students' learning outcomes and end-of-semester course evaluations.

Strengths. First, in this project, OER, OER pedagogy, the 5Rs, and the use of CC license were introduced to pre-service teachers, who were also invited to create OER that other teachers could reuse or recreate. Like most instructors, we have experienced scenarios in which students claim that they do not have any questions until they apply new knowledge to a real-life problem. Although P had explained the reason for embedding a CC license in their work published through the Internet, one student emailed P about the difference between a traditional YouTube video and one with a CC license. The same student also stated that she understood the purpose of different license types after P explained how and why to use CC licenses to protect creators' copyrights. Scholars such as Werth and Williams (2021) argued that OER-enabled pedagogy makes learning more participatory. We also found that when the pre-service teachers were provided with an opportunity to learn about concepts related to OER by applying them in an authentic assignment, learning was more meaningful.

Second, the pre-service teachers collaboratively created the videos. The experience of collaborating and co-constructing knowledge was valuable for students who felt disconnected and isolated in an online asynchronous course during the pandemic. In the end-of-semester online course evaluation performed by the institution, a student commented, "I knew more about my peers through group projects...When I explained the concepts to the teammates, I felt that I understood them better." Another remarked, "I enjoyed working with my team members and creating videos."

Third, the students demonstrated a better understanding of the content knowledge through engaging in an OER project than through writing texts. Prior research (e.g., Hilton et al., 2019) has discovered the positive impact that OER-enabled pedagogy had on students' learning achievements; P had a similar finding. P taught EDU301 in two consecutive semesters: Fall 2020 and Spring 2021. She used the same syllabus, instructional materials, readings, delivery format, and assessments to teach phonemic awareness and phonics, and students worked in teams in both sections. The only difference was that the Fall 2020 students explained their teaching focus and ideas through written posts, while the Spring 2021 students demonstrated their phonemic awareness and phonics activities through the OER they created. However, the results of the Phonemic Awareness and Phonics Quiz, a tradition in the history of the EDU 301 course, revealed differences in outcomes. Several pre-service teachers in the Fall 2020 section failed to distinguish between phonemic awareness and phonics, while all students in the Spring 2021 section were able to distinguish the two concepts and use appropriate examples to illustrate them. It is likely that the pre-service teachers developed their "professional vision" (Goodwin, 1994) when they saw themselves as educators and treated the OER content they created seriously as usable materials. As a result, they had a better understanding of the content knowledge.

Fourth, the pre-service teachers demonstrated their emerging professional identities through their open educational practices. In their videos, many wore professional attire and used a confident, engaging, and encouraging voice when showcasing their activities. Also, they aspired to create professional videos by employing beginning/ending scenes, pictures, music, titles, subtitles, and transitions without being directed to do so. This use of various techniques and modalities to negotiate, construct, and demonstrate their professional identities (Alsop, 2006) indicated a level of skill that is normally hard for pre-service teachers to achieve in a traditional asynchronous online setting.

Improvements. P identified three aspects she would like to improve when carrying out this OER project again. First, P would like to include more team-building activities before the OER teamwork. When reviewing the submitted videos, P observed the discrepancy in video quality among members within the same group. For example, one

group combined three video clips contributed by different members into a single instructional video. Student A's video clip showed a lack of understanding of the distinction between phonemic awareness and phonics; the other two teammates, Student B and C, created appropriate instructional activities but did not help Student A clarify the key concepts covered in this learning unit. According to Weidlich and Bastiaens (2019), in an online learning environment, learners are more likely to perceive their group members as "real" when provided with a variety of opportunities to interact with each other, leading to a solid foundation for meaningful social interaction. Social interaction plays a vital role in collaborative learning and group performance (Sjølie et al., 2022). The OER project started at the mid-point of the semester when the pre-service teachers had not been involved in any collaborative activities before. Thus, to help students familiarize themselves with each other's collaboration style and boost friendly accountability among group members, P considered that some low-stakes, team-building activities should be conducted beforehand, such as doing two truths and a lie game, collaboratively creating a to-do list for the week, sharing a fun story about a former collaborative project they had accomplished, etc.

Second, P would like to extend the time frame of this learning unit, so that students are given a revision opportunity for improving their work and internalizing and incorporating the instructor's feedback. Although this entire project lasted for three weeks, the pre-service teachers had only two weeks to produce and edit videos because the third week was for wrapping up, during which the students took a quiz on phonemic awareness and phonics. However, because the pre-service teachers were not given a second chance to revise and improve their videos, only videos that fully addressed all of the five evaluation criteria were published as OER. P's takeaway was that faculty often underestimate the amount of novelty undergraduate students need to deal with in a project. For example, in this OER project, the pre-service teachers were learning the content, technology, and pedagogical approaches simultaneously. An open space needs to be built into the project, such as a conference, synchronous class meeting, or discussion forum, for pre-service teachers to share their in-progress work and receive feedback from peers, instructors, and classroom teachers. This provision is worth highlighting for the open pedagogy community: Before asking novice creators (such as pre-service teachers) to publish their work with open access, experts (such as faculty) need to ensure a reasonable time frame for the entire process of creating, editing, revising, and polishing products, during which creators are actively involved in sharing and receiving feedback from their community. Furthermore, providing timely feedback as students develop their projects and introducing students to carefully structured rubric that outlines specific evaluation criteria are also recommended approaches to facilitate students' learning progress.

Third, as mentioned above, P published all the videos through her personal YouTube so they would be available as a collection, making it easy for the audience to find and browse all the videos that EDU301 students created. In this way, P added the CC license to the videos, not the pre-service teachers, as only an account holder can conduct this action. However, given that adding CC licenses is an embedded function of participating in YouTube Studio and therefore a key OER practice, ideally, the pre-service teachers would explore how to accomplish this step on their own. Thus educators who are interested in having their students experience open educational practices are advised to have students go through the entire process of obtaining an account, adding a CC license, and posting their own videos. While this approach would sacrifice the convenience of presenting the videos as a collection for users, it would enhance student learning. On the other hand, although publishing videos on YouTube offers the benefit of easy searchability and shareability, one significant challenge for OER projects is the lack of dedicated institution-specific OER repositories. Thus, faculty may advocate for universities to establish their own OER repositories for students to make contributions or use the OER Commons as a recommended platform for initiating the sharing of the dissemination of OER content

Project 2: Text-Based OER

Design Idea

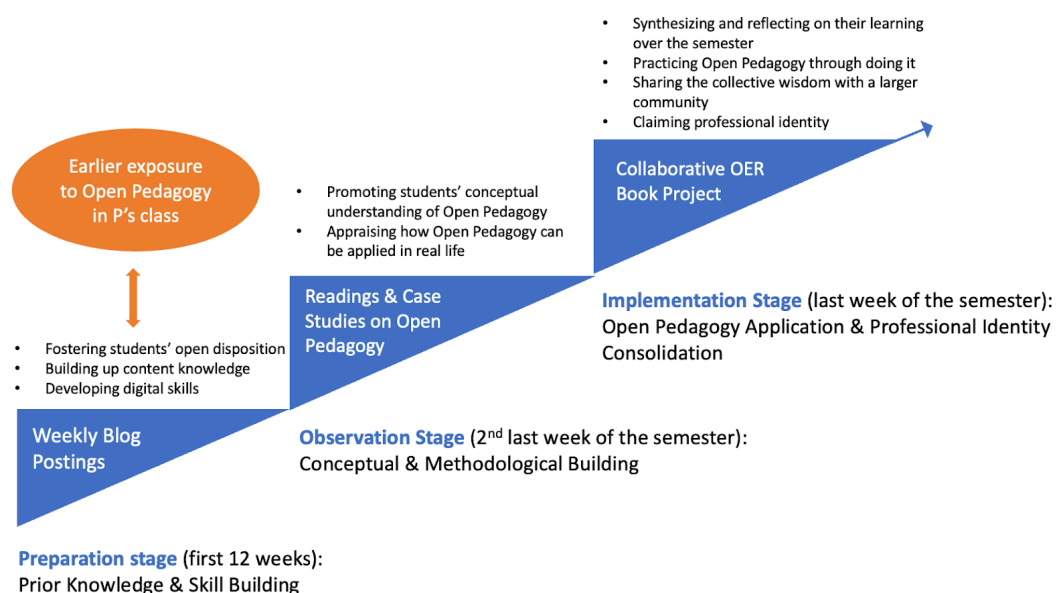
E302 had an asynchronous format with several optional Zoom meetings during the semester. Because the course focused on teaching literacy at the intermediate elementary level, C thought it was important for pre-service teachers to explore diverse ways of inventing and incorporating various written texts and genres in their future practices. In fact, one of the learning objectives of the course was to develop pre-service teachers' ability not only to facilitate children's reading and comprehension skills but also to engage them in new ways of making meaning and creating multimodal texts. For instance, one of the topics discussed in the course was the pedagogy of multimodality and multiliteracies, which emphasizes using various ways such as visual, spatial, gestural, audio, and textual modes and a variety of semiotic resources to facilitate learning and assessment (Cope & Kalantzis, 2015; New London Group, 1996). Another important goal of the course, which supported C's inclusion of an OER project, was for pre-service teachers to understand the importance of providing today's young learners with opportunities to write on digital platforms and for the public as they live in a digital age. These objectives are inherently aligned with the principles of OER-enabled pedagogy which engages learners in creating, mixing, and sharing knowledge and resources (DeRosa & Robison, 2017; Werth & Williams, 2021).

C decided that one crucial principle of designing the online learning experience for literacy and language pre-service teachers was to offer them authentic learning opportunities and the means to learn and apply the theories, principles, and pedagogies of reading instruction through collaborative engagement in activities. This principle was also aligned with P's course design. For a typical week, C normally had students 1) first familiarize themselves with a particular strategy by reading relevant textual materials, 2) observe videos demonstrating how the strategy was carried out in class, 3) post their reflections on the demonstrated benefits and limitations of the strategy and reflections on their online field experience (if there was any during that week) to their individual blogs, and 4) respond to peers' blog postings.

Blog posting was an essential element of C's online teacher education course. In addition to the Canvas discussion forum, C had the students create their own blog websites. The website was not only a personal space for them to document and showcase progress towards developing their own pedagogies but also a shared platform on which to interact with each other and engage in conversations about their learning. C wrote in her syllabus, "It is my hope that your blog will become your handbook of strategies, resources, and reflections and you would like to continue developing it after completing this course." C also wanted to use the blog posting as an opportunity for students to experience using digital tools, engaging in new literacies, and enhancing their own professional portfolios. By inviting students to write about and share their ideas on the Internet, C's design purpose was to gradually foster their open dispositions, pedagogical/content area knowledge, and technological skills for creating an OER pedagogical book for other language teachers towards the end of the semester. In other words, such scaffolding of the course aimed to familiarize students with not only the digital tools and skills needed for OER artifact creation (Hilton et al., 2019) but also the mindset of sharing and reflecting necessary for adopting OER-enabled pedagogy and cultivating professional identities as novice teachers (Desimone, 2009; Pilen et al., 2013). This scaffolding (as shown in Figure 3) is thus aligned with authentic learning principles (Yang & Harbor, 2023) in the way that it addresses an authentic context (i.e., teaching and learning in an online environment), authentic task (i.e., learning about open pedagogy through creating OER resources), expert performance (i.e., performing an expert role in sharing pedagogical strategies for other language teachers), collaborative knowledge construction (i.e., interacting with and providing feedback to peers), reflection, and articulation through the weekly blog postings and the implementation of a final OER book project, which will be explained in the next section.

Figure 3

A journey map of the design process, design elements, and student experiences of the text-based OER assignment in Project 2



Implementation

The OER book project was embedded in a two-week module called "Open Pedagogy," the last module of the course. Since the students had already been exposed to open pedagogy in P's course earlier in the semester, C believed that a two-week timeframe would be sufficient for them to conduct the project. This project, scheduled at the end of the semester, would also allow the students to reinforce their understanding of OER-enabled pedagogy, as well as apply the knowledge and experiences they had previously gained. To prepare students to do the OER project, C assigned them to read Wiley and Hilton's (2018) article to refresh and enrich their comprehension of OER-enabled pedagogy. C also invited students to use Wiley and Hilton (2018) as a lens to examine a student-led literacy project at our home institution that publishes open-access books through the university library. In this sense, the pre-service teachers were able to see and analyze a real-life example of how open educational practices facilitate young learners' literacy through authoring, illustrating, and publishing stories. Thus, in this first stage of C's design, students developed the theoretical and methodological foundations of OER-enabled pedagogy they needed to envision how they could use it in elementary literacy education.

During the next stage, C had the students collaboratively create and carry out an open-book project themselves. This stage, which was in alignment with P's design, was intended to give students the opportunity to learn by doing. Following the principles of a renewable assignment (Hilton et al., 2019), C had the students use the entire last two weeks to review, select, compile, synthesize, revise, and edit all their previous weeks' blog postings and then create and publish an open-access book. The OER project was not only an accumulation of students' personal achievements but also a collection of the wisdom of the whole class. C wanted the final project to be a shared, collaborative learning experience that reinforced the pre-service teachers' experience of being part of an online community during time of uncertainty and isolation imposed by the pandemic. Therefore, the students' community practice of creating openly licensed artifacts on each other's pedagogical insights and the process of trying to think and solve problems like teachers are aligned with what Gee (2015) and Goodwin (1994) recommended as an essential step for professional vision and professional identity development. Also, as the final project of the course, this OER project was a way for the students to reflect on and consolidate their learning throughout the semester.

To achieve the above learning goals, C created two roles for the project: chapter editor and book designer. Each student signed up for a role on a Google Doc. For instance, two chapter editors worked collaboratively on a book chapter they both signed up for. The book designers worked together on building the website and publishing all the chapters. C also provided specific guidelines for each role (see Table 2). Therefore, not only was the product they were creating an open-access book, but also the process of "revising, remixing, redistributing, retaining, and reusing" each other's materials was inherently an enactment of open pedagogy (Wiley, 2013).

Table 2.

Description of the Guidelines for Chapter Editors and Book Designers

	Chapter Editors	Book Designers
Responsibilities, Roles, and Tasks Involved	<ul style="list-style-type: none"> • Devise a suitable title for the chapter 	<ul style="list-style-type: none"> • Collaborate on the design of the website and the book
	<ul style="list-style-type: none"> • Review everyone's blog postings for resources relevant to the theme of your chapter 	<ul style="list-style-type: none"> • Write a coherent and engaging introduction for the book
	<ul style="list-style-type: none"> • Select the best excerpts from different blog postings 	<ul style="list-style-type: none"> • Organize and edit the chapters
	<ul style="list-style-type: none"> • Synthesis ideas across blogs 	<ul style="list-style-type: none"> • Discuss your edits with chapter editors
	<ul style="list-style-type: none"> • Add new resources and ideas 	<ul style="list-style-type: none"> • Add a Creative Commons CC BY license for the book

- Revise and remix all the materials and organize a complete chapter that features specific principles, strategies, and teaching ideas
- Publish the book online

Figure 4

[illegible]

CAPTION

Figure 5

Implications and Reflections

Strengths. An examination of the final student products helped us to gain a deeper understanding of how the pre-service teachers' professional identities were developed through the process of collaboratively creating an open literacy methods book. C did a textual analysis (Frey et al., 2000) of the student-created OER book in comparison with their weekly blog postings throughout the semester, as the method is helpful in revealing differences and identifying patterns in written communication. The analysis went through four stages: 1) local-level (e.g., word choice, language, mechanics) analysis of the blog posts and the OER book; 2) global-level (e.g., content, structure, audience awareness, tone) of the blog posts and the OER book; 3) categorization of the features identified in the local and global level analyses; 4) comparison and summarization of the features.

The findings of the textual analysis showed that the pre-service teachers were able to draw on various resources such as academic literature, personal experiences, and professional language to establish and express their professional identities. For instance, in their open book, C's students cited a variety of research articles and pedagogical materials (see Figure 6) and incorporated self-created images, graphs, and artifacts (see Figure 7) to showcase ways to adapt and implement literacy teaching strategies effectively. Furthermore, the students also used more professional language with a more confirmative tone in the final OER book than in their original weekly blog postings. As an example, Table 3 shows the difference in language used by the same student author in her weekly blog posting compared to her final book chapter. In her blog post, she frequently used colloquial words such as "actually" and "really," as well as discourse markers like "I think," which diluted the strength of her argument. However, in the final book chapter, she adopted a more formal tone, consistently employing academic terminologies (e.g., figurative language, multimodality), and removing all discourse markers that undermined her authoritative voice and credibility. The language and tone changes showed that participating in an OER project

encouraged the pre-service teachers to adopt new professional identities and establish their professional authority, as the project allowed them to re-negotiate and re-construct their learning experiences and sense-making of themselves through meaningful social and professional collaborations (Alsop, 2006; Beijaard et al., 2004).

Figure 6
A screenshot of students' incorporation of academic literature into their OER book

Instructional Strategies

Reading comprehension is one of the most important skills that students must learn from a young age. Specifically, teachers must instruct students to be aware of their thinking, think strategically, and understand how important their thinking is. Teachers can use a variety of strategies to teach comprehension so that students can turn information that have learned into knowledge through their own thinking (Harvey & Goudvis, p 6). Two methods of doing so are through the Gradual Release of Responsibility (GRR) and the Flexible Release to Responsibility (FRR).

Gradual Release of Responsibility (GRR)

One common model that teachers use to teach reading comprehension to students is through the use of the Gradual Release of Responsibility. This model is used to teach reading comprehension so readers can create meaning. While using this model, readers can grow from reliant to independent and self-sufficient. GRR is used to teach a strategy by modeling it, guiding students in practicing in groups of varying sizes, then allowing students to apply it independently (Webb et al, p 59).

Figure 7
A screenshot of students' incorporation of self-created artifacts into the OER book

There are many different ways to use annotations. You can write down your ideas, questions, and inferences in the margins or on sticky notes to help keep track and remember your thinking (Harvey & Goudvis, p. 79). I have attached some images of two examples of annotations below.

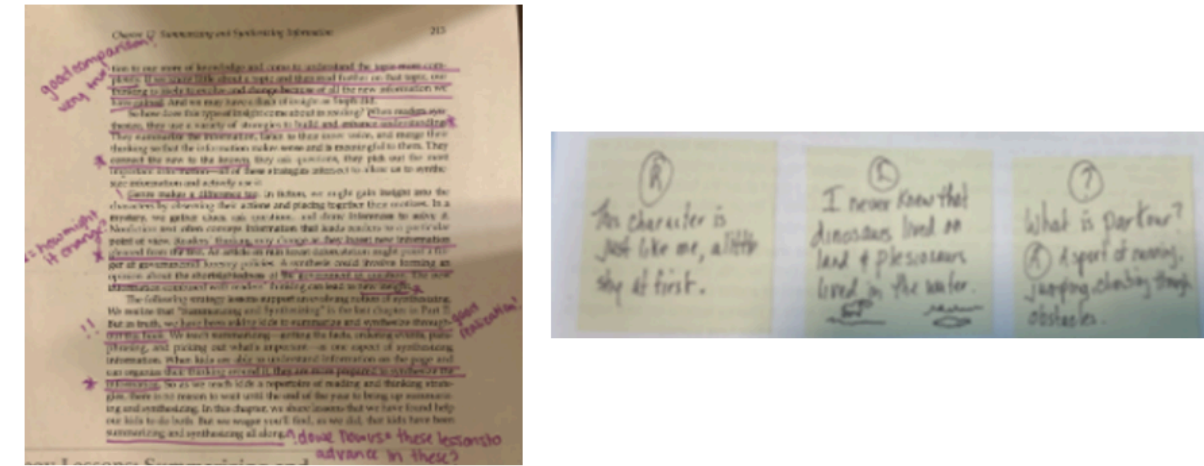


Table 3.
A comparison between a student's language used in her weekly blog posting compared to her final book chapter

Weekly Blog Posting	Final Book Chapter
"I <u>actually really</u> liked using this tool. It is called Interact, <u>and I think it is a great way</u> to create quizzes... <u>I think that</u> I would recommend this site to teachers."	"Students are able to benefit when images are combined with <u>figurative language</u> . They are introduced to <u>new methods of comprehension</u> , and they are processing new communication forms. The use of <u>multimodality</u> should be user friendly..."

Moreover, similar to P's OER project in which students created video resources, the book project enabled the pre-service teachers not only to reflect on their own learning experiences but also to co-create new knowledge (DeRosa & Robinson, 2017), as shown in the screenshot of the introduction of the book written by students. The book, entitled A Pandemic Teacher's Journal, added value for both pre-service and in-service teachers, as it addressed the emergent need for teaching strategies during the

global health crisis. The collaborative OER book project allowed the students to apply their content-area knowledge, articulate their pedagogical strategies, and actively take on an expert role, despite the challenges of distance learning during the pandemic.

Improvements. C made the following suggestions regarding incorporating a student-authored OER book project in teacher education classes. First, as she compared the students' weekly personal blog postings and their final open book, C found that although students used graphs and other visual images in the book, many artistic expressions, music, and other forms of "transmediation" (Leland et al., 2015) and multimodality demonstrated in their personal blog postings were unfortunately not included in the book. C also noticed that some good thinking and critical perspectives demonstrated in the students' personal blogs were not incorporated into the final publication. It was reasonable to infer that the pre-service teachers still had not developed enough confidence to fully claim their authority in the public venue. Therefore, when carrying out similar projects, teacher educators should focus on building students' confidence by helping them recognize that the nature of openness in open pedagogy should not be confined to the action of sharing an open resource but also an open mind and open-ended perspective on different opinions and issues at hand. This openness should be viewed as a value (Wiley, 2016) and is essential for developing high-quality open-access educational materials. Moreover, teacher educators should invite students to reflect on their decision-making processes while editing and designing their products, so that both instructors and students are aware of their choices and rationales.

Second, instructors should also help pre-service teachers view the OER project as a means to comfortably express their own ideas and share their professional and thoughtful reflections on any misgivings they might have about the long process of fully developing professional identities. This self-reflectivity is an important quality of teachers. Therefore, in adopting open pedagogy, instructors should encourage students to take risks and embrace an open attitude toward showing readers their genuine opinions and self-reflections, regardless of their novice or expert status.

Conclusion

Our two-course design practices complement each other as examples of how adopting OER-enabled pedagogies in teacher education classes can benefit pre-service teachers' development of content area knowledge, pedagogical skills, and collaborative working capabilities (Desimone, 2009). The designs of our OER projects provided pre-service teachers with opportunities to learn educational theories and pedagogical principles by applying them. Pre-service teachers also used their own professional voices and showcased their pedagogical skills in their projects, thus demonstrating their emerging professional identities. Through knowledge creation and sharing, the open publication process helped them to be self-reflective and aware of their professional image, which is often a struggle for pre-service teachers.

Traditionally, providing pre-service teachers with effective guidance, resources, and opportunities to foster their new identity as professionals is a major challenge in teacher education (Misra, 2018). Promoting professional identity is even more challenging when pre-service teachers are learning in a distance setting. However, OER-enabled pedagogy in the online space allowed them to use online tools to engage in collaboration not only within their small class community but also with the larger online community, thus empowering their voices and validating their experiences as learners and novice teachers during times of uncertainty. Adopting video and text-based OER projects in our courses allowed our students to see the value of their work and engage with learning more meaningfully and collaboratively (Al Abri & Dabbagh, 2019; Grissett & Sheu, 2023; Sheu, 2020). A learning community facilitated by such open educational practices also enabled our students to connect with their peers, co-construct knowledge, and contribute to a broad audience.

Similar to McDermott et al.'s study (2023) which shared three cases of using a process-oriented implementation of OER, our collaborative OER designs in the two courses allowed our shared group of students to experience using and producing OER through a variety of modes while we still retained a strong focus on our own learning objectives. Meanwhile, this collaboration between the two courses alleviated the learning curve for students as they approached and practiced open pedagogy in two different settings using the same principles introduced by their instructors. As exemplified in a student comment from the course evaluation, "I really enjoyed making the blog posts because each week we would learn about a different strategy. And in the end, we could reflect on and share all of them...It (the final project) was such a fun and creative assignment." Another student commented, "I like that the things I learned from the cluster were actually connected..." The students learned about OER, technological tools, and content knowledge without being overwhelmed by the information load. Instructor collaboration allowed for coherence and reinforcement of ideas while opening opportunities for students to build connections between classes and prepared them to adapt their skills flexibly to the various contexts of their future teaching. We hope sharing our experiences and reflections on our projects will encourage more and more teacher educators to invite their students to engage in the creative and open world of knowledge sharing and construction.

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