Open Pedagogy Practices in Teacher Education: Digital Spaces for Preservice Teachers' Identities

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Despite the benefits of open pedagogy, its use in K-12 schools remains limited. Through this study, the authors examined the lack of open pedagogy usage in schools and potential barriers through the lens of teacher candidates' ($n = 29$) experiences with open pedagogy assignments. Within this qualitative study, the authors defined open pedagogy and utilized identity building and significance building tools to examine teacher candidates' perceptions of two different open pedagogy assignments. Candidates in one section worked on these assignments in a small group, while candidates in another section worked individually. Notable differences were observed among the candidates' responses that highlight the importance of opportunities for collaborative open pedagogy practices within teacher education programs. This analysis supports the field's understanding of ways teacher candidates' experiences might impact their use of open pedagogy assignments in the future, and, therefore, the advancement of open practices in schools. Implications highlight how open pedagogy in teacher preparation programs have the potential to increase equity-oriented practices in K-12 schools. From this analysis, recommendations are drawn for those who strive to increase equitable learning environments through open practices.

> I will occasionally give assignments that are intended to be shared publicly because I do believe collaboration is important. The factors I will consider are the classroom vibe and personalities of all my students. If I feel that some individuals may not feel comfortable, I will not push it. Also, it will depend on how far along we are in our school year. I won't make some students share things right at the start of the school year if they do not feel comfortable. (Isabel, teacher candidate)

As a preservice teacher in a teacher preparation program, Isabel shared this response at the completion of an open pedagogy assignment focused on the creation of a resource for other preservice and practicing teachers. This quotation illuminates Isabel's evolving professional identity with an openness to student-centered learning in her imagined future classroom.

As teacher educators, we, the authors, see value in Isabel's consideration of students' needs and an understanding of the benefits and complexities of open pedagogy. Recognizing the possibilities for open pedagogy and its limited use in K-12 classrooms (Graham & Roberts, 2018), we also see a need for teacher preparation programs to provide space for preservice teachers to engage with these practices. Students' experiences during their teacher preparation programs have an impact on their future teaching and professional identities that can lead to more equitable and inclusive practices or maintain the status quo. In this study, we examined the impact of open pedagogy practices within teacher education courses on teacher candidates' knowledge, beliefs, and imagined future use of open pedagogy in their classrooms. The report in this article provides a definition of open pedagogy as it relates to K-12 settings, describes the implementation of open pedagogy through two specific assignments, identifies the findings of the study, and shares implications for open pedagogy in teacher preparation programs.

Review of the Literature

Based on the review of literature, we defined open pedagogy as relying on four interconnected tenets to frame this study. The following sections report this definition, related research, and theoretical connections. From there, the benefits of open pedagogy practices are discussed, as well as the need for teacher candidates to experience open pedagogy within teacher preparation courses. The purpose of this study and research questions are also provided.

Open Pedagogy Overview

Until recently, "open education," has been primarily associated with Open Educational Resources (OER), including materials that students are able to read or view for free (United Nations Educational, Scientific, and Cultural Organization, 2002, p. 24). Due to the widespread momentum for OER usage and implementation, more attention is currently given to the ways teaching practices align and connect to OER under the umbrella of open education. With a wide range of activities covered by the term "open,"

there is a lack of consensus about the definition and design of open pedagogy (Hilton et al., 2019; Seiferle-Valencia, 2020).

Within this study, our definition of open pedagogy relies on four, connecting ideas:

1. Open pedagogy begins with a focus on students as creators of information rather than consumers. In this sense, students curate course materials and create products that can be used in the future (Karunanayaka et al., 2015; Wiley & Hilton, 2018). The goal becomes contributing "to the public knowledge commons of which they are a part" (DeRosa & Jhangiani, 2017, p. 14).
2. Within open pedagogy, creation is collective through collaboration, as students are invited to remix current resources and create their own new sources, utilizing digital tools to connect across time and space.
3. The digital and collective aspects of open pedagogy assignments are also connected to a real audience who can read and utilize materials in the moment and the future.
4. Open pedagogy is embedded in an environment of OERs, where students learn to utilize Creative Commons (CC) Licensing to identify and give credit to their own knowledge, alongside others through digital copywriting. Digital copywriting refers to individuals or groups creating content for online audiences, and CC provides options for creators to give permission for others to use the content (CC, 2021).

Examples of open pedagogy assignments that fit this definition include preservice teachers creating websites to use with their future students and families as well as share with their peers (Clinton-Lisell et al., 2021), students developing unit overview videos and discussion questions that are redistributed (DeRosa & Jhangiani, 2017), and students generating memes and posting them on social media (Riser et al., 2020).

As DeRosa and Jhangiani (2017) noted, open pedagogy aligns with other theories of teaching and learning, like Connected Learning (Ito et al., 2015), which focuses on opportunities for students to experience learning through relationships, interests, and opportunities. Aligned to critical digital pedagogy, the tenets of open pedagogy highlight a space where students have the opportunity to imaginatively create something new through the use of digital tools (Mirra et al., 2018). We recognize these connections across theories while seeing benefits in the ways open pedagogy connects specifically to the use of OERs as a concrete way to highlight and center the perspectives of students.

Research also indicates many positive benefits of open pedagogy. For instance, Hilton et al. (2019) found that students reported digital open pedagogy assignments that are collaborative and participatory to be as effective or better than traditional assignments (e.g., those shared privately only with the instructor such as quizzes or term papers). Lambert (2018) added that these practices are culturally responsive, as they provide a permeable space for students to bring identities, leading to more inclusive and equitable practices for all learners, but especially those from

marginalized and historically underrepresented groups, by providing them with the opportunity to cocreate texts and tell their stories, instead of having their narratives told by others.

Jhangiani and DeRosa (2017) asserted that open pedagogy practices "invite us to focus on how we can increase access to knowledge – both its reception and its creation." In sum, we believe open pedagogy, aligned with the four tenets described, highlights two learning goals: (a) the potential of collaboration in open spaces to improve learning, and (b) a social justice orientation – caring about equity, through open sources.

Open Pedagogy in K-12 Education

Despite the benefits, open pedagogy's use in K-12 settings remains limited (Graham & Roberts, 2018), even as youth are engaging in similar practices in a variety of ways in the world. From a young age, students perform publicly through storytelling, music performances, and sports events. Today's traditional undergraduate population, including many of our teacher candidates, and all of the current K-12 population (Pew Research Center, 2020) report wide use and engagement with social media culture and public digital platforms (Morrell, 2021).

Moreover, in studies conducted by the Youth Participatory Politics Survey Project from 2008-2018 (Cohen & Kahne, 2018), researchers discovered that this group (sometimes referred to as Generation Z) seems to have an issue conscience and to be action-oriented, using digital spaces to convey views about current events and issues. For example, many make and circulate memes, videos, and other multimodal content; amplify and extend hashtags; and attend to digital identities. They engage in art, poetry, and short-spoken word, performance of all types — events which are often planned and recorded in media.

Despite the widespread usage of social media, students are apprehensive and tentative about using it because they lack confidence in sharing their digital identity with a potentially unlimited audience (Eidman-Aadahl & Qamar, 2021; Weller, 2014). According to *Anti-Racism Daily* (2021), social media has always been pivotal to sharing news, especially when it comes to racial injustice. It is the primary driver of communication for human rights movements, thanks to hashtags, viral videos, and its instant accessibility.

As students strive to become involved in sociopolitical movements, they are asking for help in navigating digital spaces and curating their social media posts (Eidman-Aadahl & Qamar, 2021). At times, they try to mediate their identities and prevent context collapse by maintaining accounts on different platforms for different purposes (e.g., those for school and social lives; Dennen & Burner, 2017; Rutledge et al., 2019). To address this navigation, some call for educators to scaffold students' digital identity development (Weller, 2014) and teach digital media literacies (Morrell, 2021). In the end, there is a need to keep students and their data safe while capitalizing on their lived experiences as connected citizens. These concerns align with factors reported to impact the use of open pedagogy in any setting.

Building Open Pedagogy in Teacher Education

As teacher educators, we see a link between preservice teachers' understanding of open pedagogy and its use in their future classrooms. Sociocultural theory recognizes that learning is mediated by social interactions and practices where teacher candidates' present identities. These identities are fluid and dialogical, changing based on context, and rooted in their own histories, experiences, and the audiences they are encountering (Dyson, 1993). The experiences of preservice teachers engaging with and reflecting on open pedagogy in teacher preparation programs has the potential to impact how they may bring it to their own teaching. As Lindstrom et al. (2021) noted, the attitudes and beliefs of teachers have a larger impact on their integration of technology than other factors, such as access.

As teacher candidates consider bringing open pedagogy to their classrooms, they reflect on benefits and concerns of open pedagogy practices for their students. These factors include fears around students' digital distribution beyond the classroom in ways that are less controlled, including the ways they present identities and their understanding of a larger and sometimes infinite audience (Andrews & Smith, 2011; DeVoss & Eidman-Aadahl, 2010; Hull & Stornaiulolo, 2010; Lewis & Fabos, 2005). We saw this apprehension and tentativeness in our teacher candidates related to their own creations and what they anticipated with their future students.

Purpose of the Study

In this study we considered how the use of open pedagogy practices with preservice teachers might impact their own beliefs around their future use of open pedagogy in the classroom. As teacher educators, we see our role in the community of practice (Lave & Wenger, 1991) that surrounds teacher candidates who will bring practices to their future classrooms. We focused on the following research questions:

1. How does the implementation of open pedagogy instruction in teacher education courses impact teacher candidates' beliefs about open pedagogy?
2. How are teacher candidates' taking up teacher identities through the use of open pedagogy practices?

Methodology

This interpretive study (Erickson, 1986) utilized qualitative data and applied discourse analysis (Gee, 2011) to examine teacher candidates' perceptions of two different open pedagogy assignments. We recognized our own role as faculty members and instructors within this program and brought a reflexivity to our reflection of interactions and interpretations of students' work (Pillow, 2003). Author Gilpin's role included serving as the instructor for the courses that were part of this study to include designing the open pedagogy assignments. Author Rollag Yoon is a faculty member at the same institution and had some of the candidates in previous classes. However, she was not an instructor for the specific classes in this study

and provided a different perspective in data analysis. The remainder of this section is a description of the participants, the courses, the open pedagogy assignments, and the connections to our definition of open pedagogy, data sources, and data analysis.

Context

This study was conducted across two courses in the School of Education at a small, midwestern US liberal arts college. Course 1 was Introduction to Education, and Course 2 was Introduction to Special Education. Courses were online, consisting of synchronous, online sessions and asynchronous modules. Both courses incorporated an assignment aligned with our definition of open pedagogy. In the following paragraphs descriptions of these assignments include their design, alignment with our definition of open pedagogy, and connections to the outcomes and objectives of these courses.

Assignment Design Background

The design of the open pedagogy assignments was impacted by previous candidates sharing concerns when asked to share their work publicly. We wondered if the individual nature of those open pedagogy assignments was at least, in part, leading to these concerns, because candidates routinely worked collaboratively with their peers and shared publicly. However, we rarely asked them to share their individual work publicly. This hunch was confirmed when some candidates asked if they could work with their peers on the open pedagogy assignments. They stated they were more confident and less anxious as compared to working individually, which aligns with the research about the benefits of collaborative group work (Johnson & Johnson 1989; Pantiz, 1999). As a result, this information informed our design of open pedagogy assignments and this study.

Course 1 Assignment

Candidates in Course 1 completed an open pedagogy assignment with a small group of three to four peers, in which they created content (e.g., videos and websites) to be used by Gilpin in future courses and ultimately shared with other teacher candidates. This assignment was the culminating activity for the course, and candidates could create the content about any topic of importance to them as future educators as long as they were able to connect it to course content.

For example, one group made videos about the importance of the arts in schools with connections to course topics of equity, diversity, and inclusion. Groups shared the content they created with other groups, and using the assignment rubric, candidates provided one another with feedback to include strengths and areas for growth. Candidates also reflected individually on their contribution to the group's project and shared these assessments with Gilpin. Moreover, candidates were provided space to share concerns about other group members (e.g., lack of engagement, follow through on tasks, etc.). Finally, Gilpin provided each individual and group with feedback.

Course 2 Assignment

Due to syllabus limitations, candidates in Course 2 continued to complete an open pedagogy assignment individually that required them to curate a website that they could use when they become educators. This assignment was used to assess teacher licensure standards related to the knowledge and understanding of laws and regulations related to students with disabilities. Individual candidates created their websites using Google Sites, in a manner that made them ready for candidates to share with their students' future families and colleagues. They were provided rubrics and examples and received feedback from their peers at multiple points. Prior to submitting their websites to Gilpin for feedback, candidates used the rubrics to reflect on strengths and areas for growth. Finally, Gilpin provided each individual with feedback.

Other Assignment Considerations

Teacher candidates in both courses were encouraged to share their work publicly and to pursue CC licensing (https://creativecommons.org). Specifically, they were offered one-to-one conferences with Gilpin to discuss digital copy writing. However, in keeping with the spirit of open pedagogy, if candidates created their own materials, they could (and should) control how public or private they wished to be (Jhangiani & DeRosa, 2017) and decide whether to license it or not. In the end, all candidates elected to share their work publicly, but none pursued CC Licensing. Table 1 shows how the assignments in each course aligned with the four key tenets of open pedagogy, as defined earlier in this piece.

Participants

Twenty-nine undergraduate teacher candidates were enrolled in the two focal courses of this study. Aligning with national trends, the majority of participants self-identified as white (85%), female (90%), and native English speakers (95%; see Ingersoll et al., 2014). Ages ranged from 18-40. All were either elementary or secondary education majors from two different campuses of a small liberal arts college, who were able to come together for these courses due to them being offered online. Course 1 consisted of 11 candidates who completed an open pedagogy assignment in which they curated course content for use by future and current candidates with a small group of three to four peers. Course 2 consisted of 18 candidates who completed an open pedagogy assignment individually, in which they created a website that they could use when they become educators.

Table 1
Description of Open Pedagogy Assignments

Tenet of Open Pedagogy	Presence in Assignment Course 1	Presence in Assignment Course 2
1) Open pedagogy begins with a focus on students as **creators of information**. rather than just consumers	Candidates created resources for reading and viewing in the course	Candidates created websites to share with future families
2) Within open pedagogy, **creation is collective** through collaboration**,** as students are invited to remix current resources and create their own, utilizing digital tools to connect across time and space.	Candidates worked in small groups to create content and also received feedback from other groups	Candidates provided and received feedback from peers
3) The digital and collective aspects of open pedagogy assignments are also connected to a **real audience** who can read and utilize materials in the moment and the future.	Candidates created resources for use in future courses and by peers	Candidates shared with peers and could also share with future families
4) Open pedagogy is embedded in an environment of OERs, where students learn to utilize **Creative Commons (CC) Licensing** to identify and give credit to their own knowledge, alongside others.	Candidates offered one-to-one instructor conferences to discuss licensing	Candidates offered one-to-one instructor conferences to discuss licensing

Data Collection and Sources

Data were collected throughout the duration of the semester-long courses (January – May, 2021). Collection included the following:

1. Lesson plans of synchronous course sessions created by Gilpin.
2. Reflective jottings (Emerson et al., 2011), taken following the synchronous course sessions and one-on-one conferences with students created by Gilpin.
3. Artifacts of the open pedagogy assignments (webpages and open education resources created by students in the classes).
4. Reflective questionnaire responses.

The reflective questionnaire (see appendix) included eight items, based on a combination of questionnaires developed earlier by Clinton and Kelly (2019) and Hilton et al. (2019). Questions included scenarios in which students were asked for their perspectives about the open pedagogy assignments they completed, along with other instructional design options. The reflective questionnaire was a required assignment for the courses; however, students consented to participate and have their response included in the study, after receiving assurance that their decision would have no impact on their grades. Therefore, data analysis occurred after the completion of the courses. Ultimately, all students (*n* = 29) consented to have their responses included in this study.

Data Analysis

In our analysis, we used interpretive and reiterative coding (Emerson et al., 2011) and discourse analysis, as it recognizes the meaning of language within a particular practice (Gee, 2014, p. 12). We applied open coding (Corbin & Strauss, 2008) to look across the reflective questionnaire responses and identify themes related to the significance candidates placed on their experience with an open pedagogy assignment. As recommended by Namey et al. (2008), we determined the frequencies or responses related to a theme based on the number of individual candidates that mentioned a particular theme, rather than the total number of times the theme appears in an individual candidate's response. This approach was based on the assumption that the number of individuals expressing the same idea is a better indicator of overall importance than the number of times a theme is shared.

After identifying themes from across the data, we looked at specific quotations from candidates aligned to the themes. Looking at these quotations, we utilized discourse analysis through two of Gee's (2011) Building Task Tools: the Significance Building Tool and the Identities Building Tool. We triangulated our findings from this analysis with Gilpin's reflective jottings from synchronous course sessions and one-on-one student conferences.

Findings

Our findings described here focus on data from the reflective questionnaire responses. We identified three notable themes from these responses, which are triangulated from Gilpin's jottings, lesson plans, and student artifacts: (a) Awareness of Audience, (b) Learner Identity, and (c) Teacher Identity. These interpretations highlight the difference between student responses from Course 1 and students in Course 2. These results reveal a contrast between the responses in the two courses, with emphasis related to the individual or group nature of the assignments.

Table 2 summarizes our key findings as they relate to these three themes. Table 3 shows frequencies of responses related to corresponding themes for the candidate responses to the reflective questionnaire Items 1-5. Table 4 is a summary of teacher candidate responses for reflective questionnaire Items 6-7 in regard to preferences for future assignments in their course work and implications of open pedagogy on candidates' work as an educator.

Table 2
Themes From Data

Tool	Reflective Questionnaire Responses Course 1: Group Assignments	Reflective Questionnaire Responses Course 2: Individual Assignments	Reflective Jottings
Significance Tool Audience Awareness *Benefits vs Concerns*	Focus on the benefits of sharing work with others	Focus on benefits of keeping work private and concerns with sharing work publicly	Students in individual conferences and synchronous sessions in Course 1 express no concern for sharing work publicly. Students in Course 2 have ongoing concerns about accuracy of work being shared.
Identity Tool Learner Identity *Student vs Teacher-Driven*	Identify benefits of learning with others while creating an open source	Identify a need for "traditional" learning between the teacher and student for themselves	Students in Course 1 depend on each other for answers, while students in Course 2 seek approval from instructor.
Identity Tool Teacher Identity *Opportunity vs Barriers*	Sees opportunity for bringing open pedagogy to future teaching	Highlights concerns around use of open pedagogy in future teaching	Students in both courses discussed concerns of open pedagogy assignments, but students in Course 1 talk about how they will apply these practices.

Audience Awareness

Gee's (2011) significance building tool was used to analyze ways that the language from the reflective questionnaire comments called up significant moments in the text, where "words and grammatical devices are being used to build up or lessen significance" (p. 92). Within open pedagogy, a given factor is the role of audience in students' sharing their work. In the two different courses, there was a level of significance given to the awareness of the audience by all participants, but in divergent ways. As cited in literature review, audience is always a factor as students create content for others. Within this data, we are interested in the particular ways that audience showed up for the students within the two different sets of students.

Data from the reflective questionnaire found in Table 3 show that 63% of students from Course 1 commented on the role of audience, while 83% of students from Course 2 commented on the role of audience. In other words, all candidates were thinking about their audience, but those connections in Course 2 were slightly more frequent than those connections from candidates in Course 1. Table 2 highlights the themes from our discourse analysis of these quotations.

Table 3
Examples and Frequencies of Themes

Theme	Course	Number of Responses	Example
Audience Awareness	1	7 (63%)	"I think sharing it privately, it wouldn't have been as useful. We can know the information, but we **need to be able to share it with others.**"
	2	15 (83%)	"Thoughts and feelings can be conveyed a little **more (in a privately shared assignment)** as well as having some emotion behind it."
Learner Identity	1	9 (81%)	"I think a mix of both is good. There are some things that I prefer my instructor to know only. But, I think **publicly shared coursework is important.** We all learned a lot about teaching by bouncing ideas off of each other and I found that to be super helpful."
	2	10 (55%)	"I prefer private. I like the **old traditional ways of school where it is between the teacher and student**. I am not a huge fan of creating these big projects to be put on display unless it is necessary to help someone like this is for research."
Teacher Identity	1	11 (100%)	**"I would consider giving these assignments as a teacher**. It would be interesting to see what my future students would come up with. If it is to be shared publicly, I would probably inform my students about this, and see what they would think. I would assign projects that they are comfortable sharing and that would tie into classroom concepts. I would discuss this with my class."
	2	7 (40%)	"I believe a teacher for K-12 must be careful about a minor's privacy. **I don't think it would be a good idea to have assignments shared publicly**. Those in the older grades 10-12 may wish to share on their own, however, it should still be monitored."

Note. Course 1 (*n* = 11); Course 2 (*n* = 18)

Table 4
Open Pedagogy in the Future

Current Context	Percent of Candidates Who Are Positive About Open Pedagogy in Future Contexts	
	Coursework	K-12
Course 1 (*n* = 11)	91%	100%
Course 2 (*n* = 18)	61%	28%

As we considered the significance of the language in these themes, we noted Course 2 candidates were commonly aware of audience in relation to vulnerabilities. For example, this group commonly said that they were more comfortable sharing their assignments with the instructor, adding explanations, for example, that "thoughts and feelings can be conveyed a little more in a privately shared assignment." Other concerns around sharing their work included phrases like the following: "It can be a little embarrassing to put your work out there," "It puts more stress to make it perfect," and "Some people might not believe the information."

In response to the same reflective questionnaire, Course 1 candidates discussed their awareness of audience in relation to the value they saw in sharing their work publicly. As noted in Table 3, one student said, "We need to be able to share it." Other students placed significance of sharing with an audience, explaining, "Other people can learn from you," and "It shows I know a lot of information."

All candidates were aware of the significance of the audience, while the candidates who worked on an open pedagogy assignment in a group format had a more positive view of sharing their work publicly than those who worked on it individually. Even within the group working on the individual assignments, a teacher candidate said on the reflective response questionnaire, "I would feel more confident about sharing it [publicly] because it wouldn't just be my name on it." This statement indicates a significance placed on the collective nature of a response, showing that small group versus individual context can perhaps shift student perceptions about open pedagogy type assignments.

These themes were also reflected across Gilpin's ongoing reflective jottings from synchronous course sessions and one-one-one conferences. Gilpin noted there was a lack of concern expressed by students in Course 1 about sharing this particular assignment throughout the course. It was simply a question that did not come up in class, while it was an ongoing concern in notes related to students sharing their work in Course 2. Students brought up their concerns in individual conferences and synchronous class sessions.

Learner Identity

In addition to this awareness of audience, we were interested in the ways students experienced their own learning through open pedagogy assignments. Other research highlights that preservice teachers' beliefs around teaching practices are shaped through sociocultural experiences, including the teaching and learning they experience as students in classes (Day et al., 2005; Hargreaves et al., 2002; Lasky, 2005). In looking at the reflective questionnaire responses, we utilized Gee's (2011) identities building tool to identify ways students' learning with open pedagogy assignments created a "socially recognizable identity" (p. 110) as a learner.

In reflecting on their own learning during the course, students in Course 1 (working on the group projects) shared a learner identity that was positively engaged in open pedagogy experiences. As illustrated in Table 3, one teacher candidate explained, "I think publicly shared coursework is

important. We all were learning a lot about teaching." This teacher candidate highlighted their own learning and their classmates' learning when thinking about their experience with an open pedagogy assignment.

Similarly, another student talked about how the open pedagogy assignments provided good space for them to be "bouncing ideas off of each other." Another common theme in these responses was that students shared a confidence in their work, as learners and contributors. As one student noted, "I know that I am capable of completing high-quality course work and providing accurate information." These comments articulated a learner identity that was engaged in the learning activities, committed to collaborating with their peers, and confident in the work that they were doing. Their experience also led to a strong desire to have open pedagogy assignments in the future. As summarized in Table 4, 91% of students in Course 1 reported an interest in having open pedagogy assignments in their own future courses as students.

This finding is in contrast to students' experiences in Course 2, where students' identities as learners were focused on how having an audience could negatively impact them as learners. While students in Course 1 also articulated a need to be cautious about what students share publicly, their overall experiences expressed a positive experience with open pedagogy and a nuanced understanding that they could be cautious *and* complete open pedagogy assignments. Students in Course 2 were heavily focused on negative possibilities.

For example, some students highlighted a concern for how other students would perceive them based on what they were saying. This idea came up as students commented, "If it's not shared publicly, only one person can judge you," and "People might see my mistakes." There was also a consistent concern about plagiarism, as students said, "People might try to take the ideas." Ultimately, these perceptions highlight a learner identity that is concerned with a "right" answer and individual ownership of their ideas. As found in **table [?],** one student summarized this perception, explaining, "I like the old traditional ways of school, where it is between the teacher and student." This perception was correlated to students' desires for future course work, as well. While 91% of students in Course 1 indicated a desire to have open pedagogy assignments in their own future courses, 61% of students in Course 2 wanted to have open pedagogy in their future coursework.

Ultimately, these data highlight how the two courses impacted students' identities as learners in divergent ways, depending on whether open pedagogy assignments were created in individual or group formats.

Teacher Identity

Research points out that personal experiences of preservice teachers impact their professional identity, as well (Hargreaves & Goodson, 1996; Struck & Rollag Yoon, 2019). Across the data, we saw a connection between candidates' learner experiences with the identities they anticipated as future teachers. Their responses around how they would use open pedagogy in the future were, once again, greatly impacted by whether

they worked individually or in a group. In looking at reflective questionnaire responses, candidates from both sections reflected on honoring students' choice and sense of privacy. Students in Course 1 looked to the possibilities of open pedagogy in their classrooms, with statements like, "I would consider giving these assignments as a teacher. It would be interesting to see what my future students would come up with."

Contrasting these statements, candidates in Course 2 consistently shared their concerns about bringing this work to the K-12 classroom, for example, stating, "I don't think it would be a good idea to have student work shared publicly." While concerns around privacy were voiced by candidates in both courses, the nuances of those concerns and the possibilities that preservice teachers saw for their future teaching were drastically different.

Within the reflective questionnaire, candidates were asked to indicate if they would consider using open pedagogy (publicly shared) assignments with their future K-12 students. As shown in Table 4, candidates in Course 1 unanimously (100%) said they would use open pedagogy type assignments while fewer (28%) candidates in Course 2 indicated feeling this way. Course 1 candidates commonly noted that while they would use open pedagogy, they would also be in tune to the needs of their students, explaining, as one candidate did, "I would assign projects that they are comfortable sharing and that would tie into classroom concepts. I would discuss this with my class." Additionally, candidates in Course 1 would likely not require they share publicly, but rather offer the option to share publicly. Another student explained, "I will ask the kids if they want their work public or private and have them decided what will be best for them as students."

In contrast, candidates in Course 2 commonly shared concerns about privacy as a reason they would not use open pedagogy or were hesitant about using those types of publicly shared assignments. Once again, candidates in Course 1 wanted to honor students' choice and sense of privacy while using open pedagogy type assignments, and those in Course 2 were reluctant due to concerns about privacy. As one student noted, "I believe a teacher for K-12 must be careful about a minor's privacy. I don't think it would be a good idea to have assignments shared publicly." In conclusion, candidate responses to their thoughts about using open pedagogy assignments in their future K-12 classrooms were impacted by whether they worked individually or in a group.

Across all the data, we noted the differences between candidates' responses to open pedagogy based on the individual or collective nature of their experiences. We traced how these differences highlighted a different awareness of audience, which led to two different identities as learners, and connected to teacher identities that would be more or less likely to bring open pedagogy to their classrooms. Ultimately, candidates who worked in a group more positively perceived open pedagogy and indicated they were likely to use open pedagogy in their future K-12 classrooms as compared to candidates who worked individually.

Discussion

Our findings build on the work of other scholars through highlighting how creating a collective or individual context impacts preservice teachers' sense of identity within open pedagogy experiences and their own sense of open pedagogy as an equity-focused practice. Our analysis indicates that when teacher candidates worked in groups to create content, they had more confidence in presenting their learner identity and were more likely to see their teacher identity as somebody who would include open pedagogy in the future.

In the end, all of the candidates who worked in small groups and some of those who worked independently said they would use open pedagogy assignments in their K-12 classrooms. The collective open pedagogy activities provided permeable spaces for students to bring identities and share their experiences as they collaborated with others (as in Lambert 2018). Those who worked in small groups were more likely to use open pedagogy in the future and engage in these sorts of assignments in their courses because they reported feeling safer, leading to positive perceptions and intentions about implementation.

We see this difference in teacher candidates' future identities as particularly important in this moment in education. As teachers are feeling an increase of control on curriculum choices from school board and district mandates, teachers need to feel confident in bringing pedagogies that focus on equity into the classroom. While open pedagogy means taking up complex conversations around audience awareness related to digital identities, vulnerabilities of sharing work publicly, and understanding copyright, it also creates opportunities to engage in complex ways connected to the digital identities students already have in the world (DeVoss & Eidman-Aadahl, 2010).

Beyond the fact that teacher candidates in Course 1 were less concerned about the vulnerabilities of sharing work, those candidates may have recognized that they need to grapple with ways to engage with our work that is safe, considerate of digital presence, and allows for sharing student views. The difference between these two courses highlights how preservice teachers can be engaged in these nuanced and important understandings. Providing space for teacher candidates to become comfortable and confident with open pedagogy practices can provide a pathway for teachers to bring curriculum to the classroom that addresses digital interactions for students, scaffolding digital identity development, and teaching media literacy skills (Andrews & Smith, 2011; Hull & Stornaiulolo, 2010; Lewis & Fabos, 2005; Weller, 2014, Morrell, 2014). In this moment, it is important to provide teachers opportunities that build on their confidence in bringing this work to K-12 schools.

Grounded in research, based on our findings, and connected to our four tenets of open pedagogy, there are implications for teacher educators and researchers. The design of teacher candidates' coursework should reflect open pedagogy type assignments to include three key instructional moves that could improve student participation, perceptions, and future usage. In the remainder of this section, we outline these design considerations and share limitations of this study as a springboard for future studies.

Open Pedagogy Design Considerations

There are three key instructional moves connected to our four tenets of open pedagogy that teacher educators should make to assignments in their courses for teacher candidates. Taken together, these moves will lead to the design of more equitable and inclusive open pedagogy assignments for teacher candidates. These practices need to permeate entire teacher education programs in order for them to have the biggest impact on open pedagogy being brought to K-12 classrooms. These recommendations also could serve as a guide for teacher candidates and practicing teachers as they look to independently or collectively (e.g., with a professional learning community) bring open pedagogy to their imagined or current K-12 classrooms.

Collective and Individual Possibilities

Aligned with our open pedagogy Tenet 2, creation is collective through collaboration, as students are invited to remix current resources and create their own, utilizing digital tools to connect across time and space. While this collaboration can occur outside the parameters of teacher candidates' courses through social media and other digital platforms, the design of open pedagogy assignments for candidates should include the option of students working in a group to decrease anxiety about public sharing (Johnson & Johnson 1989; Pantiz, 1999).

This option is key, because candidates who completed the open pedagogy assignments in a group context were more positive about open pedagogy. They were (a) more likely to feel confident about sharing their work publicly, which came out in the finding related to audience awareness, (b) desired future coursework to include open pedagogy type assignments, as evidenced in the findings about learner identity, and (c) they were more inclined to offer open pedagogy type assignments in their future K-12 classrooms, as shown in the findings about teacher identity. Additionally, some candidates who completed the open pedagogy assignment individually reported they might like doing it more and sharing with others if they had the support of a group. Yet, other candidates expressed concerns about working with peers on assignments like these.

Therefore, instead of requiring candidates to complete open pedagogy assignments with peers, group work should be offered by teacher educators as an option. For candidates who do not want to work with a small group, opportunities to get feedback from peers and provide feedback to peers should be included in the design of open pedagogy assignments. Further, to encourage candidates to take up group work in their own course work and to develop future teachers' professional identities through experiential learning, there is a need for explicit discussion of group versus individual work and public versus private sharing of assignments and why assignments are designed in a particular way.

Nurture Digital Identities and Media Literacies

Connected with our open pedagogy Tenets 1 and 3 and aligned with the research of Weller (2014) and Morrell (2021), teacher educators need to support preservice teachers' digital identity and media literacy development, so preservice teachers have the tools and confidence to nurture this development in their future students. Thereby, candidates will be more likely to bring their future students alongside them as creators of information through open pedagogy type assignments.

To begin, teacher educators need to address issues of online privacy, which were shared by the candidates in our study and were shown to impact their teacher identities. This includes honoring the concerns of candidates and addressing the ways that they are already sharing information. It starts with making explicit the ways teachers have always asked students to present publicly and disrupt misconceptions. Examples of opportunities for open practices should be shared. Examples may include the following:

- Letters to the Next President (https://letters2president.org/), in which young people researched, wrote, and made public via digital tools their opinions on issues that were important to them in the 2016 presidential election.
- Teaching While White Student Voices (https://www.teachingwhilewhite.org/student-voices), where students can publicly post about their experiences with race in the classroom.

Teacher educators must also share examples of youth curating content to be shared both publicly for courses and outside of class (Eidman-Aadahl & Qamar, 2021; Morrell, 2021). See Stanford's Civic Online Reasoning (https://cor.stanford.edu/) curriculum is a resource for helping students be better evaluators of digital content and thus in turn producers of it.

Digital identities can also be supported by modeling ways that preservice teachers can connect and build communities with other educators through open-source platforms and resources. The CLMOOC (https://clmooc.com/) is an example of how educators stay connected and supportive of each other through an online and open platform.

Encourage Digital Copyright

Related to our open pedagogy Tenet 4 and also media literacy, impacting identity development, and open pedagogy is digital copyrighting, known as CC licensing (2021). Teacher candidates in this study shared concerns about others stealing their work as a barrier to them participating in and using open pedagogy type assignments, as evidenced in findings related to learner and teacher identities. Moreover, digital copyright is important for teacher educators to address with their candidates to ensure their media literacy foundation is well rounded. While requiring students to use CC licensing with the products they created for open pedagogy assignments in this course was not required, we suggest athat teacher educators be more explicit and intentional about sharing information about CC licensing with their students.

Understanding CC licensing provides another way for students to understand how they can bring their ideas to the public and how others share information, making a strong connection to media literacy. For example, teacher educators could (a) provide lessons and resources about CC licensing, (b) offer workdays where teacher educators or campus librarians help candidates license their creations, and(c3) license their materials along with publicly sharing, which they do by attaching CC logos.

Limitations and Future Studies

Several limitations in this study should be noted. Each limitation provides an opportunity to improve and expand the research with regard to open pedagogy. Taken in sum and addressed, these limitations and future studies could provide information for teacher educators so they are better able to nurture teacher candidate identity development in ways that lead to the expanded use of open pedagogy in K-12 settings — in the end, leading to collaboration in open spaces to improve learning while addressing equity, through open sources.

Expand Demographics

Most of the candidates enrolled in the courses that were part of this study were female, elementary education, and younger; thus, candidates may have been less confident due to a lack of experience in both course work and K-12 settings. These factors could have impacted their confidence about sharing their work publicly or their thoughts about using open pedagogy in their future K-12 classrooms. Therefore, future research should expand this study to include a larger and more diverse sample, which would make this work more generalizable.

Use Similar Assignments

The design of our study was restricted by the course syllabus, and as a result, the assignments that were part of this study were both open pedagogy, yet they were also different. Future research should build upon this work and look at the impact of the individual versus small group contexts with the same open pedagogy assignments. This approach is important because the nature of the assignments might have impacted candidates' experiences with open pedagogy, rather than the public versus private and small group versus individual contexts. For instance, candidates could complete a website or both curate resources to be shared with future students. Candidates in both courses would do the same assignment, with one course doing it individually and the other with a small group.

Study Longitudinally

Information should be gathered about teacher candidates' actual usage of open pedagogy type assignments in their K-12 classroom. Cohorts of teacher candidates who experienced open pedagogy type assignments in their licensure programs along with those who did not could be followed during their first few years working in K-12 schools. Additional data could

be collected through questionnaires or interviews and the results used to improve the way teacher candidates use open pedagogy practices. Institutions routinely gather information from their graduates, so information about open pedagogy could also be added this data collection.

Conclusion

I will have to consider students who thrive in this situation vs. students who do not and give many options for sharing something publicly. I like how we were given so many options; not only were we able to learn from others with how to present something, we also were taught new content in many different ways. (Gunter, pseudonym, preservice teacher)

As Gunter said after completing an open pedagogy assignment, education needs to be reimagined in a way that makes space for new perspectives and pedagogies. Moving forward, teacher educators must model digital, open pedagogies, as a way for students to bring their complex and multiple identities to the world through digital tools. The open pedagogy assignments that are central to this study expanded notions of knowledge to be shifting, accessible, and collaborative through the use of digital technologies.

Through open pedagogy, teacher educators and future educators imagine and create engaging, relational learning experiences that capitalize on students' assets while connecting students' personal digital realities with those in education settings. Responding to the lack of open pedagogy practices in K-12 settings and more emphasis on designing permeable spaces through open pedagogy experiences for preservice educators will impact how open pedagogy is brought to the K-12 classroom.

Acknowledgments

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Appendix
Reflective Questionnaire

This is the 8-item reflective questionnaire that we created and used in this study. It is based on questionnaires developed earlier by Clinton and Kelly (2019) (values items 1-3) and Hilton and colleagues (2019) (open pedagogy items 4-8).

1. What was the value of sharing your work publicly?
2. How was sharing your work publicly useful for you, now or in the future?
3. What were the costs or downsides of sharing your work publicly?
4. I thought about having you create a project that would be shared with me privately. Instead, I decided to have you create a project that will be shared publicly. What do you see as the pros/cons of turning it into me privately v. sharing it publicly?
5. a. [Small group] I also considered having you complete a project on your own and sharing it publicly. Instead, I decided to have you create a project with a small group and share it publicly. What impact, if any, would working on your own have on your feelings about sharing privately v. publicly? Please explain.
   b. [Individual] I also considered having you complete the project with a small group and sharing it publicly. Instead, I decided to have you create your project individually and share it publicly. What impact, if any, would working with a group have on your feelings about sharing privately v. publicly?Please explain.
6. Now consider your future coursework. Would you prefer to have assignments that are publicly or privately shared? Please explain.
7. Next, consider when you become a K-12 teacher. Do you think you will occasionally give assignments where the resulting work is intended to be shared publicly? When making this decision, what factors will you consider?
8. Is there anything else you would like me to know about the final project and/or sharing coursework publicly?