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Technology in Teacher Education: Student Perceptions of Instructional Technology in the Classroom

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TECHNOLOGY IN TEACHER EDUCATION

Student Perceptions of Instructional Technology in the Classroom

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Abstract

Instructional technology continues to become more prevalent in classrooms around the globe. However, it is unclear whether teachers are prepared and have the self-efficacy to incorporate instructional technology into the classroom. This study reviews an instructional technology course for preservice teachers and whether student comfort increased with instructional technology throughout the course. In addition, data were collected regarding preferences pertaining to instructional technology. The data shows preservice teachers' comfort increased throughout this course in terms of instructional technology. In addition, the data show preservice teachers are more comfortable working with instructional technology that includes templates rather than instructional technology activities that require ground-up design.

Key Words: instructional technology, teacher education, perceptions, educational technology

Introduction

As evidenced by the global COVID-19 pandemic, understanding how to incorporate technology into education has become imperative. School closures due to COVID-19 required teachers to modify their curriculum through technology use at a moment's notice (Mielgo-Conde et al., 2021). According to Lepp et al. (2021), teachers were not prepared for pivoting to technology-based teaching. In schools, technology changes are typically made incrementally with multiple levels of support (Winter et al., 2021). However, this did not occur during the COVID-19 pandemic due to the haste in which schools closed.

As an educator, incorporating technology into the classroom is no longer an option. This is due to the fact that being technologically literate is no longer a benefit in the 21st century, but a requirement (Dincer, 2018). Knowing how to use and engage with technology is critical for students as they enter the global economy (Kent & Giles, 2017). Therefore, teachers play a critical role in helping students learn about technology and how to use technology (Yazar & Karabekir, 2019).

In recent years, educational technology has become more common in classrooms and increasingly user-friendly (Kormos, 2019; Starkey, 2020). This has caused an impact not only on teachers and students, but on education as a whole (Starkey, 2020). Teachers are now faced with meeting the technological needs of society. Since there is such a demand for technological knowledge in the global economy, technology must be incorporated into classrooms (Durson, 2019). In addition, technology has become the norm for many children, and they expect to use technology throughout their daily lives (Alelaimat et al., 2020).

According to Starkey (2020), "further advances have resulted in digital technologies that have the potential to change

the work of an educator" (p. 37). Technology has the potential to support teaching and learning, but only if the teacher embraces and incorporates technology into the classroom (Dincer, 2018). Yazar and Karabekir (2019) state that:

> computer and other technological tools also play an important role in the accessing of information, creating rich learning environments, responding to different learning styles of students, transferring the learned, supporting high-level thinking skills, offering students the opportunity to compare with the real-life problems, by solving problems steering students to learn science based on inquiry, cooperation, communication and support lifelong learning. (p. 129).

Therefore, because of technology, information is widespread and widely available, further changing the horizon of education (Arseven et al., 2019).

One area of training that is becoming increasingly critical in teacher education is instructional technology (Kormos, 2019). Teacher education programs need to teach preservice teachers the skills necessary to incorporate technology effectively in their classrooms (Baran et al., 2019). Durson (2019) states that "it is very important to train successful teachers and promote the competencies required in the current era. Today, technologically-rich learning environments are developed to provide learners with higher-quality learning experiences" (p. 138). However, according to Cuhader (2018), while technology integration is critical in teacher preparation, it is not widely researched.

Integrating technology is currently one of the greatest challenges in teaching (Kent & Giles, 2017). This is partially due to the fact that technology integration takes time as it is a complex endeavor (Koromos, 2019). Because of the integration of information communication technology (ICT) in education, the landscape of the classroom has begun to evolve (Arseven et al., 2019). It has become apparent that technology affects every aspect of our lives (Alanazy & Alrusaiyes, 2021; Dinc, 2019). Therefore, technology plays a critical role in education, causing research on methods to support future educators in the use of technology in the classroom to become increasingly important.

Conceptual Framework

According to Dinc (2019), technology has been found to increase test scores, student engagement, student independent work-time, and has allowed teachers to support students with disabilities. Arseven et al. (2019) state that, often the teaching and learning process closely linked to technology use as technology have become more prominent in classrooms. Due to the increased use of technology in the classroom, knowledge of technology has become increasingly important in teacher education programs (Ebersole, 2019).

Baran (2014) conducted a literature review regarding integration of mobile learning. During this study, the author found most research in teacher preparation programs fell into two categories: learning about mobile learning or implementing mobile learning. Therefore, one can infer that instruction on other technologies in teacher preparation programs likely falls into one of the two categories.

Literature Review

Challenges of Technology

Often, teaching focuses on presentation or communication (Starkey, 2020). However, the method of presentation and communication is rapidly changing as technology becomes more entrenched in education. Because technology has improved so quickly, teachers must be prepared to use it in the classrooms (Tondeur et al., 2017). Therefore, it is criti-

cal that teacher education programs include technology so that when preservice teachers graduate, they are confident in incorporating technology into the classroom (Starkey, 2020).

Teachers must be technologically proficient in order to effectively incorporate technology into the classroom (Dincer, 2018). However, research has shown that, even when teachers are technology literate, they do not necessarily effectively implement technology in the classroom (Dincer, 2018). Therefore, in order to effectively use technology in the classroom, teachers must be trained during teacher education (Dincer, 2018). According to Starkey (2020), there are three methods to integrating digital competence into teacher education: integrating digital tools into existing pedagogies, considering critically where to incorporate technology, and using technology to effectively support student learning. To effectively support teachers in enhancing student engagement and learning, these competencies might be considered in teacher education programs.

Koromos (2019) states that technology allows students to collaborate and learn in real-time. Finally, Bai (2019) found that the adoption of mobile devices has greatly influenced education with positive results in several subject areas. These results show that teachers have the desire to incorporate technology and that technology can support learning. However, preparation of teachers to use technology in the classroom still needs further research.

Challenges of Technology, Pedagogy, and Content Knowledge (TPACK)

Technology, Pedagogy, and Content Knowledge (TPACK) is a technology integration framework used to develop understanding of how to include technology into teaching with consideration to pedagogy and content knowledge. However, according to Starkey (2020), TPACK is often studied with relation to content only and not pedagogy. Further, Dincer (2018) asserts that TPACK expresses the importance of technology integration, but does not describe the technological knowledge necessary of the teacher to appropriately incorporate technology. Therefore, it is unclear whether TPACK is being used effectively to teach educators how to incorporate technology into the classroom.

While many teachers have an understanding of how to use technology, they often struggle with using technology to support teaching and learning (Arseven et al., 2019; Bai, 2019). However, "when used meaningfully to support innovative pedagogy, educational technology can provide enriching and highly encouraging educational opportunities." (Yazar & Karabekir, 2019, p. 130). Therefore, teaching preservice teachers to use technology efficiently and effectively in teacher education programs is imperative. According to Starkey (2020), teachers should be able to use technologies, select and critique technologies, and plan to teach through digital tools. Providing this skill set in teacher education programs will allow for increased success for both teachers and students in the classroom.

Yazar and Karabekir (2019) state that teachers often know about technologies but are unsure of how to incorporate them into their classrooms to support learning. In addition, though teachers are often taught using a TPACK model, they need understanding of how to incorporate pedagogy into the lesson as well (Tondeur et al., 2017). Unfortunately, novelty is often focused upon rather than how to integrate technology appropriately while considering pedagogy (Cuhader, 2018). Or, in other cases, technology is used for drill and feedback in schools rather than personalized learning (Bai, 2019).

Benefits of Technology Integration

While there are many struggles to appropriately incorporate technology into the classroom, research has shown benefits of technology integration when implemented effectively. According to Yazar and Karabekir (2019), the use of technology can make teaching more efficient. Alanazy and Alrusaiyes (2021) found that when technology is incorporated effectively, it can cause success personally and publicly, in addition to making confusing concepts clearer for students. Consequently,

the use of technology can boost teaching methodologies and learning (Alanazy & Alrusaiyes, 2021). Therefore, appropriate understanding of technology and how to use it to increase student learning and engagement becomes even more critical to teacher education programs.

Motivation is also important in education for teachers and for students. In relation to technology, Dincer (2018) found that student motivation is directly associated with technology, which indicates that using technology in the classroom would increase student motivation. In addition, Dinc (2019) states that technology increases student motivation and engagement to learn. However, Bai (2019) asserts that teachers are not motivated to use technology if they do not understand the benefits or see the ability to create student-centered lessons.

Preservice Teacher Education

According to the research conducted by Alelaimat et al. (2020), early childhood preservice teachers believe technology improves the teaching and learning process and should be used in classrooms. However, Kent and Giles (2017) found that new teachers often struggle to incorporate technology into the classroom though it is the expectation. Therefore, helping preservice teachers understand how to support technology increases in importance because then teachers are more motivated to incorporate technology (Ebersole, 2019).

Dincer (2018) states that teacher educators should use technology in their teaching because research has found that increased experience increases use. However, according to Banas and York (2014), teacher education programs may not be exposing preservice teachers enough to technology use throughout their programs. Throughout a teacher education program, it is challenging to provide preservice teachers with all of the information and experience they need regarding technology (Yazar & Karabekir, 2019). This is especially true as technology continues to evolve and quickly becomes outdated. Therefore, teachers need to be trained to integrate technology into the classroom, causing technology integration in teacher preparation programs to be of great importance (Aslan & Zhu, 2015).

According to Bai (2019), preservice teachers need experience choosing apps since there are so many to choose from and more are being developed daily. In addition, preservice teachers need help in learning to find and select technology to use in the classroom (Kent & Giles, 2017). Cuhader (2018) states that preservice teachers do not feel they get enough instruction with instructional technology during their courses. In contrast, Alanazy and Alrusaiyes (2021) state that preservice teachers are receiving technology instruction, but they continue to need more knowledge in regards to technology integration. Aslan and Zhu (2015) promote small class sizes to support increased comfort with ICT for preservice teachers. However, while the university has some control over what and how technology is taught to be integrated into the college classroom, they cannot control what happens beyond graduation (Ebersole, 2019).

Ebsersole (2019) asserts that, in order for preservice teachers to understand how to integrate technology into the classroom, they need authentic experiences. Kent and Giles (2017) affirm that, the more preservice teachers are expected to use technology, the more comfortable and likely they are to use it in their own classrooms. According to Banas and York (2014), authentic learning supports engagement with technology in a manner that allows preservice teachers to understand its benefits in instruction. Therefore, authentic experiences provided teachers with more confidence in using ICT (Tondeur et al., 2017).

Preservice teachers need experience with technology to aid them in understanding its pedagogical use in the classroom (Banas & York, 2014). However, when tested, preservice teachers were found to have more knowledge than experience with technology (Dincer, 2018). Therefore, it is critical to provide authentic learning experiences to preservice teachers to increase experience and knowledge with content and pedagogy.

Self-Efficacy

Self-efficacy is another factor that affects the inclusion of technology in the classroom (Ebersole, 2019; Kent & Giles, 2017). According to Aslan and Zhu (2015), often self-efficacy, technology attitudes, and computer anxieties are measured in studies. However, this can be challenging to measure as technology integration differs by teacher depending on self-efficacy, among other factors (Banas & York, 2014). Preservice teachers will have varying self-efficacy entering teacher preparation programs based on their own educational background (Ebersole, 2019).

Studies with preservice teachers show that the more they experience work with instructional technology, the more confident they are in using instructional technology (Yazar & Karabekir, 2019). Research shows that the more self-confident teachers are, the more likely they are to incorporate technology into the classroom (Banas & York, 2014). In a study conducted by Yazak and Karabekir (2019), the researchers found that teachers in primary school education had higher perceptions of their understanding of technology than in other programs. Additionally, when preservice teachers are provided experience, they feel more confident incorporating technology (Arseven et al., 2019).

According to Durson (2019), it is impossible for teachers to integrate technology into the classroom when they have low self-efficacy. One significant outcome for students is that if a teacher has low-self efficacy with technology, students in their classroom may also have low-self efficacy with technology (Kent & Giles, 2017). Therefore, it is critical that preservice teachers learn about technology in their undergraduate programs to increase self-efficacy and interest with technology (Durson, 2019). When students see others that are similar to themselves persevere and succeed, they are more likely to try (Ebersole, 2019).

Purpose

Based on the research, it is clear instructional technology integration is critical in the classroom and, therefore, in teacher education programs. In addition, preservice teachers need an understanding of how to select and critique technology prior to its use in the classroom. Once preservice teachers have the ability to select and critique technology, they still need to understand how to incorporate technology into the classroom so that it creates authentic learning experiences that integrate pedagogy and support learning. While preservice teachers all have various starting points with instructional technology, it is clear that the aforementioned items are critical components surrounding teacher preparation. Therefore, the purpose of this study was to provide preservice teachers with support in learning a variety of instructional technologies while considering authentic learning, pedagogy, and student learning, all while increasing preservice teacher self-efficacy.

Methods

Participants

Participants in this study were a convenience sample as preservice teachers in the College of Education are required to take Technology for Teachers. The course included preservice teachers from the following majors: Child Development, Early Childhood Education, Elementary Education, Middle Grades Education, and High School Education. Throughout the 2020-2021 school year, a total of 31 preservice teachers participated in the study. A breakdown of the participants is provided in Table 1.

Table 1. ***Participants by Year and Major***

Year	***n* = 31**	**Child Development**	**Early Childhood Education**	**Elementary Education**	**Middle Grades Education**	**High School Education**	**Physical Education**
Freshman	*n* = 5	*n* = 0	*n* = 2	*n* = 0	*n* = 1	*n* = 2	*n* = 0
Sophmore	*n* = 15	*n* = 1	*n* = 6	*n* = 4	*n* = 0	*n* = 4	*n* = 0
Junior	*n* = 10	*n* = 0	*n* = 8	*n* = 1	*n* = 1	*n* = 0	*n* = 0
Senior	*n* = 1	*n* = 0	*n* = 0	*n* = 1	*n* = 0	*n* = 0	*n* = 0

Materials

Participants completed a 14-question survey (Table 2). Eight of the questions were Likert Scale questions, while four questions were open-ended. The Likert Scale questions explored preservice teacher opinions regarding various types of instructional technologies used throughout the course. Two of the open-ended questions sought opinions regarding benefits and drawbacks of incorporating technology into lessons in the future. The other two-open ended questions sought to determine how preservice teacher self-efficacy increased throughout the course, and whether the participants would continue to investigate new instructional technologies.

Table 2. ***Participant Survey Questions***

Question	**Response Option**
How beneficial did you find Google Drive for teacher use (organizing files, preparing lessons, collaborating with other teachers, etc.)?	5 Point Likert Scale from Not Beneficial to Incredibly Beneficial
How beneficial did you find Google Drive for student use (student collaboration, presentations, etc.)?	5 Point Likert Scale from Not Beneficial to Incredibly Beneficial
How beneficial did you find screen recording tools (Loom, Screencast-o-matic, Screencastify) for classroom use?	5 Point Likert Scale from Not Beneficial to Incredibly Beneficial
How beneficial did you find quizzing platforms (Kahoot, Gimkit, Quizziz, Plickers, Socrative, Quizalize, Quizlet, Flippity, Quizshow.io, Poll Everywhere, Triventy) for classroom use?	5 Point Likert Scale from Not Beneficial to Incredibly Beneficial
How beneficial did you find creation platforms (Jamboard, Canva, Popplet, Easely, Padlet, Snappa, Design Bold) for classroom use?	5 Point Likert Scale from Not Beneficial to Incredibly Beneficial
How beneficial did you find interaction platforms (Smartboard, Nearpod, Peardeck, EdPuzzle, QR Codes, Escape Rooms, Flipgrid) for classroom use?	5 Point Likert Scale from Not Beneficial to Incredibly Beneficial
How beneficial did you find the technology kits from the SC state library (Kubo, Snap Circuit Kit, Green Screen, Drone, BeeBot, Botley, VR Goggles, Merge Cube) for classroom use?	5 Point Likert Scale from Not Beneficial to Incredibly Beneficial
How beneficial did you find LMS systems (Edmodo, Schoology, Google Classroom, Moodle, Showbie, Docebo, Sportlyzer) for classroom use?	5 Point Likert Scale from Not Beneficial to Incredibly Beneficial
What are some of the benefits of adding technology to a lesson as a future teacher?	Open Response
What are some of the drawbacks to adding instructional technology to a lesson as a future teacher?	Open Response
Which three instructional technology tools that you learned about this semester did you find most useful for the classroom? Explain.	Open Response
Which three instructional technology tools that you learned about this semester did you find least useful for the classroom? Explain.	Open Response
What could have been done in this course to increase your comfort with integrating instructional technology into your classroom?	Open Response
Do you think you will continue to learn on your own time about instructional technology tools to incorporate into your classroom? Why or why not?	Open Response

Procedure

At the start of the course, the professor modeled how to use technology in the classroom. Each week, preservice teachers were required to complete an assignment using instructional technology. Prior to completing the assignment, preservice teachers had an opportunity to see the technology used from the student perspective. Then, the preservice teachers were required to complete assignments from the teacher perspective, which allowed them to understand how each side of a platform interacts with the user.

As preservice teachers completed assignments for the course, they were required to engage with instructional technology to design lessons and activities, increase parent communication, and evaluate tools. Within each assignment, preservice teachers were required to discuss the benefits and drawbacks of the tool in a reflection piece. The initial focus of each

assignment was to develop activities that were appropriate for the chosen standard. Once preservice teachers developed activities, technology was layered into the assignment to assure appropriate pedagogy.

Preservice teachers were expected to design assignments that would be beneficial in their classroom to support authentic learning. During the first class session of the week, assignments and technology were introduced. The second session of the week was used as a work session. During this time, preservice teachers worked on their technology assignments. They used this time to explore the technology and ask questions of classmates and the professor. This allowed preservice teachers a safe environment to investigate instructional technology. During this time, preservice teachers also increased their self-efficacy with technology as they worked together to discover the abilities of various instructional technology tools. Throughout the course, all preservice teachers were required to complete the same assignments. At the end of the semester, all preservice teachers in the course were asked to participate in a survey regarding the course.

Results

The analysis began with a review of the descriptive statistics from the Likert Scale questions embedded within the survey (Table 3). Likert Scale options for responding ranged from "Not Beneficial" to "Incredibly Beneficial." Based on the results, all mean's were above a 4 on the Likert Scale. Standard deviations ranged from 0.34 to 0.94, which shows some variability within the data. However, overall, preservice teachers found the instructional technology tools beneficial for use in their future classrooms.

Table 2. ***Participant Survey Questions***

Survey Question	**N**	**Mean**	**SD**
How beneficial did you find Google Drive for teacher use (organizing files, preparing lessons, collaborating with other teachers, etc.)?	31	4.98	0.56
How beneficial did you find Google Drive for student use (student collaboration, presentations, etc.)?	31	4.87	0.34
How beneficial did you find screen recording tools (Loom, Screencast-o-matic, Screencastify) for classroom use?	31	4.39	0.80
How beneficial did you find quizzing platforms (Kahoot, Gimkit, Quizziz, Plickers, Socrative, Quizalize, Quizlet, Flippity, Quizshow.io, Poll Everywhere, Triventy) for classroom use?	31	4.63	0.61
How beneficial did you find creation platforms (Jamboard, Canva, Popplet, Easely, Padlet, Snappa, Design Bold) for classroom use?	31	4.33	0.80
How beneficial did you find interaction platforms (Smartboard, Nearpod, Peardeck, EdPuzzle, QR Codes, Escape Rooms, Flipgrid) for classroom use?	31	4.63	0.56
How beneficial did you find the technology kits from the SC state library (Kubo, Snap Circuit Kit, Green Screen, Drone, BeeBot, Botley, VR Goggles, Merge Cube) for classroom use?	31	4.07	0.94
How beneficial did you find LMS systems (Edmodo, Schoology, Google Classroom, Moodle, Showbie, Docebo, Sportlyzer) for classroom use?	31	4.47	0.73

The remainder of the results were analyzed using a Grounded-Theory approach, as they were open-ended responses. The first question reviewed was, "what are some of the benefits of adding technology to a lesson as a future teacher?" After reviewing the data for themes, three themes arose. The most prominent theme was engagement and fun. Most preservice teachers responded that they felt incorporating technology into the classroom created a more fun and engaging lesson for their students. One preservice teacher responded by saying, "it makes learning fun." Another response was that tech-

nology "keeps kids interested." The other two themes that emerged were differentiation and being prepared for the real world upon completion of a K-12 education.

The second question reviewed was, "what are some of the drawbacks to adding instructional technology to a lesson as a future teacher?" Within the responses to this question, two themes arose. The first theme was that technology does not always work as expected. One preservice teacher responded by saying, "there can be technology issues." Another stated that "technology fails sometimes." The secondary theme that arose was distraction. Preservice teachers seemed relatively concerned that students would become distracted by technology, and they would then have to address off-task behaviors.

When reviewing the question, "what could have been done in this course to increase your comfort with integrating instructional technology into your classroom?" One main theme was consistent. The majority of the preservice teachers felt that nothing further could have been done in the course to increase their comfort with instructional technology integration. One preservice teacher stated, "I learned a lot of information that can be used in the future." Another said, "this course made me pretty comfortable." While some preservice teachers did say they wanted more time to review technology or learn about a specific technology, there were few responses related to that theme.

The fourth question reviewed was, "do you think you will continue to learn on your own time about instructional technology tools to incorporate into your classroom? Why or why not?" After analyzing these results, one main theme arose with one sub-theme. The main theme was that preservice teachers would continue to learn about instructional technology. One preservice teacher said, "yes technology is changing all the time and my students will want fun engaging lessons." Another stated, "yes because I want to learn more." The sub-theme that arose was "probably." A small subset of preservice teachers stated they would probably continue learning. Interestingly, no preservice teachers said they would not continue learning about instructional technology after the conclusion of the course.

The final section of analysis reviewed the data from the following questions: "which three instructional technology tools that you learned about this semester did you find most useful for the classroom? Explain." and "which three instructional technology tools that you learned about this semester did you find least useful for the classroom? Explain." These were both analyzed across year in college (i.e., Freshman, Sophomore, Junior, Senior) and then again by major (i.e., Early Childhood, Elementary Childhood, Middle Grades, High School). In terms of the best instructional technology, preservice teachers, in general, were strongly in favor of Nearpod, Peardeck, Canva, screencasting software, Google Suites, and Flipgrid. Sophomores felt most strongly in favor of Canva, screencasting software, and Google Suites. However, the majority of participants were sophomores. In terms of the least useful instructional technology, the majority of preservice teachers said there were no technologies they found least beneficial. Of those that found some of the technologies less useful, the following themes emerged. Preservice teachers found the escape room, QR codes, and technology kits the least useful. Escape rooms and QR codes were found least useful by elementary and early childhood majors. Across majors and years, preservice teachers found the technology kits (free kits provided through the South Carolina State Library, including a variety of tools such as Bee-Bot, Merge Cubes, Circuit Kits, etc.) less helpful than other technologies. Again, this data had the potential to be a bit skewed, as most preservice teachers in the course were early childhood education majors.

Discussion

The descriptive statistics show that most preservice teachers found instructional technologies introduced in the course beneficial. However, when the final section of qualitative results was reviewed, it was clear that some preservice teachers found certain technologies less useful than others. This created some discrepancy in the data. Overall, preservice teachers found Nearpod and Peardeck to be the most useful software introduced in the course. They also found Canva, screencasting, and Google Suites to be beneficial. Interestingly, these tools are relatively easy to engage with on the user

side. Most of the tools that were found beneficial increase interaction and engagement simply and easily. Nearpod and Peardeck allow the user to add student response slides to already existing presentations. Google Suites allows for collaboration and easy sharing of documents. Canva uses templates to create beautiful designs quickly and easily to share information. Therefore, this data aligns with Alanazy and Alrusaiyes (2021), who found that preservice teachers were most comfortable with presentation software, search engines, internet communication, word processors, and hypermedia applications.

In considering least useful tools, most preservice teachers cited none. This is helpful to see that preservice teachers found some benefit to all of the tools introduced in one way or another. According to Alanazy and Alrusaiyes (2021), preservice teachers are least comfortable with webpage design, video editing software, concept mapping, drill programs, and databases.

Of the subset of preservice teachers who did list some less useful tools: escape rooms, QR codes, and technology kits were listed. Interestingly, these tools require much more creativity to incorporate into the classroom to ensure appropriate pedagogy and content inclusion. In addition, it can be time-consuming to incorporate the technologies listed, as they often require ground-up creation. Therefore, preservice teachers may be interested in more user-friendly instructional technologies that include templates rather than technologies that require more development.

According to Starkey (2020), one type of digital competence is to integrate digital technology into teaching practices. However, before teachers integrate digital technology, they need to have increased self-efficacy with instructional technology and have a willingness to learn about said technology. Since one of the goals of the course was to increase comfort with technology, it was positive that data showed preservice teachers found little could be done to improve the course in terms of increasing their own comfort with instructional technology. In addition, the fact that preservice teachers want to continue to learn about instructional technology is beneficial. Technology continues to change rapidly, and the tools introduced in this course will likely be obsolete by the time these preservice teachers enter the classroom as teachers.

In terms of benefits and drawbacks, preservice teachers see the benefits of engaging with technology in the classroom. It is clear that preservice teachers see that future generations have an interest in technology that crosses over to the classroom. Therefore, it will be a benefit to have teachers use technology in their classrooms to increase engagement. While preservice teachers found distractibility to be a concern as well as technology failure, it is clear they have a desire to continue to learn about technology. Hopefully, this desire to engage with technology will overcome nervousness about technology issues and distractibility to help increase fun and engagement in the classroom.

Future Research

It is clear research is still needed in this area, especially in light of the COVID-19 pandemic. While preservice teachers claim they want to continue to learn about instructional technology, it might be of interest to follow up to determine whether these preservice teachers incorporate technology into their classrooms in the future and how they chose to implement technology. In addition, tracking comfort with instructional technology from the beginning of the course to the end may help see how much instructional technology courses are improving teacher persistence with technology over time. Finally, it may be of use to track these preservice teachers as they enter the classroom to determine what technologies they use when they become teachers.

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