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Training and Support on ePortfolio Implementation in Early Childhood Education

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This is to certify that the doctoral study by

Kellina Logan

has been found to be complete and satisfactory in all respects,
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Walden University
2022

Abstract

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by

Kellina Logan

MA, Walden University, 2016

BS, Shippensburg University, 2012

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

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Abstract

In early childhood classrooms, there is a lack of consistency in training and support in the implementation of ePortfolios, which may lead to frustration, lack of implementation, and improper use of portfolios as an assessment tool. There is a significant amount of research about teachers using ePortfolios from Grade 3 through higher education, but there is a lack of research about how early childhood teachers implement ePortfolios as an assessment tool. The purpose of this basic qualitative study was to explore how early education teachers perceive the training and support that they receive regarding the implementation of ePortfolios used as an assessment tool in their classrooms. The technological pedagogical content knowledge (TPACK) framework served as the foundation for this study. The research questions focused on how early childhood education teachers perceive the training and support that they receive regarding ePortfolio implementation. Data collected through semi structured interviews with seven early childhood teachers were transcribed and then analyzed thematically. All participants in this study reported they have been using ePortfolios in their classrooms for at least four years or more. Educators noted several different software that they are using with one common software among all but one participant. All participants stated that their district offered optional professional development sessions at district staff development days that they could take. Some of the educators mentioned that there were contacts available if they had challenges or questions and that they could reach out to after the training sessions. The findings of this study may lead to more effective training and support for teachers and more useful implementation of ePortfolios as an assessment tool, which may lead to positive social change for teachers, students, and school communities.

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Dedication

I would like to dedicate this dissertation, *Training and Support on ePortfolio Implementation in Early Childhood Education*, to my two children, Everley Anne and Parker Rhodes, and my current, past, and future students. It is for you that this research took place, in hopes that this will be used by educators, schools, and districts to benefit the education of young learners in the future.

Acknowledgments

First, a special thank you to my husband, James Logan; with your constant encouragement, support, and push for you to be “married to a doctor,” you were my driving force in the completion of this doctoral degree. Through all the sacrifices we made together to make this happen, I thank you.

Second, a thanks to my parents, Gabriel and Kristine Keown; you have been by my side throughout all of my schooling and hard work, and you gave me the example of the determination needed to reach this level in my professional and educational career, thank you.

Next, I want to thank my children, Everley Anne and Parker Rhodes, for understanding all the early mornings and late nights Mommy was busy writing, researching, and working. I hope you find this as an inspiration for your futures and that this has a positive impact on your educational experiences throughout early childhood.

I would also like to thank my chair, Dr. Heather Pederson, and my methodologist, Dr. Sunddip Aguilar. Thank you for your support, advice, feedback, and constant push toward the finish.

Lastly, I would like to thank my colleagues, students, supervisors, and fellow classmates for developing and encouraging my love and knowledge in technology, education, and professional skills throughout my career; thank you.

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Chapter 1: Introduction to the Study

Introduction

The purpose of this basic qualitative study was to explore how early childhood teachers perceive the training and support that they receive regarding the implementation of ePortfolios used as an assessment tool in their classrooms. Technology is continuing to expand in education, and there may be a lack of consistency in training and support to aid with teacher implementation. Therefore, this study focused on the training and support that teachers receive regarding technology integration. There is a significant amount of research about teachers using ePortfolios from Grade 3 through higher education (Felea & Stanca, 2019; Hopper, 2018; Mapundu & Musara, 2019), but in contrast, there is a gap in the literature about practice investigating how early childhood teachers are trained and supported in their use of ePortfolios.

The findings in this study helped to address the gap noted between the literature and what really occurs in the local setting regarding training and support with ePortfolio use in the early childhood classroom. Understanding how early childhood teachers are trained and supported to use ePortfolios is important because according to Alanko (2019), barriers must be overcome before the implementation of new digital practices can be successful. ePortfolios as an assessment tool give students a sense of ownership by allowing them to select their own work to be evaluated rather than relying on teacher selection, thereby allowing students to put their work on display or showcase their best efforts in explaining their understanding and knowledge, as well as acknowledging their potential (Renwick, 2017). In a study completed in 2018, Alanko et al. noted that the

phases of portfolio implementation can be challenging and suggested that it should be mandatory to familiarize educators with digital portfolios first.

Background

ePortfolios are helpful in all formats to help students revisit their learning and share their experiences with others (Hooker, 2019). One advantage found for using ePortfolios is that the student portfolios may be used to show growth at the K–12 level (Karlin et al., 2016). Over the course of a yearlong study three times throughout the year, parent and teacher interviews, surveys, observations, were used in the early childhood setting gathering data to support that ePortfolios are helpful (Hooker, 2019). ePortfolios are a new phenomenon in early childhood education. There is not research available on their effectiveness for learning nor their use as a communication tool in early childhood education (Higgins & Cherrington, 2017). As teachers began to discuss, collaborate, and expand on their use of ePortfolios, they found that they became more effective and that a lot of their planning was more intentional (Hooker, 2019). There are many advantages and limitations of the integration of ePortfolios in K–12 classrooms (Karlin et al., 2016).

As long as teachers' expectations of technology and their competencies are taken into consideration, the goal of technology enhancing teaching and learning can be met (Goksun et al., 2018). The majority of teachers need knowledge, skills, competencies, and professional development in using ePortfolios (Ghany & Alzouebi, 2019).

Teachers who all attended professional development on digital portfolios were interviewed and surveyed to understand the perceptions that teachers had on the purpose of digital portfolios in general and special education (Simons, 2019). The findings of the

study indicated that the use of digital portfolios was different among the two populations of students (Simons, 2019).

Renwick created a guide to help teachers in making sense of and navigating the implementation of ePortfolios and how they can help teachers see students as learners. Renwick's research outlined the purpose and benefits of digital portfolios as an assessment tool to show performance, process, and progress in student portfolios. Renwick's publication addressed the use of digital portfolios as assessment tools. It began with what portfolios are and continued to the schoolwide implementation of digital portfolios (Renwick, 2017).

Digitalization has changed early childhood and created opportunities for change within education; teachers need support both technically and pedagogically when implementing digital practices within the early childhood classroom (Alanko et al., 2019). ePortfolios are becoming more common, which increases the need for teacher training in this area of implementation (Brown et al., 2018). ePortfolios are being used differently across early childhood settings (Cherrington & Goodman, 2017).

ePortfolio implementation is much more efficient when planning is given enough time and when collaborative planning takes place among teachers. Therefore, if teachers work collaboratively on implementation, it allows for pedagogical support among the teachers, as well as problem solving (Alanko et al., 2019). ePortfolios can be difficult to implement, but they are a tool that can be used to enhance learning within the classroom when used correctly and effectively (Brown et al., 2018).

Goodman and Cherrington (2017) reported that children using ePortfolios engaged with their learning at least one or twice a week, and they preferred to visit their ePortfolios with teachers, parents, or peers rather than independently. ePortfolios are useful vehicles for student learning and understanding of knowledge and for facilitating students' ability to reflect and engage, but they require support for both students and educators (Bodle et al., 2017). There are barriers and challenges that teachers face with ePortfolio implementation and where the teacher support comes from in order to integrate.

Problem Statement

In early childhood classrooms, there is a lack of consistency in training and support in the implementation of ePortfolios, which may lead to frustration, lack of implementation, and improper use of portfolios as an assessment tool. Issues surrounding training and support for ePortfolio use in the elementary classroom include equity of access for teachers and a disconnect with ePortfolios and the curriculum (Brown et al., 2018). According to Nagle et al. (2019), teachers integrating ePortfolios have experienced issues with receiving little training and support in order to integrate this technology for assessment. A South Carolina elementary teacher indicated that her students used ePortfolios to display evidence of learning and that this was helpful, but the use of ePortfolios required a lot of training for her, as well as work within her classroom prior to implementation. Another South Carolina elementary teacher indicated that she used ePortfolios as quick assessments all at one time to save time when grading and assessing students individually. However, doing so required a lot of figuring out

beforehand. An administrator stated how wonderful ePortfolios are for assessment and how they enhance technology use; she stated that she wished more teachers used ePortfolios in this way to benefit students.

There is a significant amount of research about teachers using ePortfolios within Grades 3 through higher education (Felea & Stanca, 2019; Hopper, 2018; Mapundu & Musara, 2019) , but in contrast, there is a gap in the literature about practice investigating how early childhood teachers are trained and supported in their use of ePortfolios.

Purpose of the Study

The purpose of this basic qualitative study was to explore how early education teachers perceive the training and support that they receive regarding the implementation of ePortfolios used as an assessment tool in their classrooms. The findings in the study helped address the gap noted between the literature and what really occurs in the local setting in training and support for teachers using ePortfolios in the early childhood classroom. Teachers have increased the use of technology in their classrooms; however, teachers report challenges in technology integration and need more guidance on effective and appropriate use (Chordia et al., 2019). Accurate assessment using ePortfolios gives students as learners a sense of ownership by allowing them to select their own work for submission rather than relying on teacher selection, thereby permitting students to put their work on display or showcase their best efforts in explaining their understanding and knowledge, and acknowledging their potential (Renwick, 2017). There is growth in technology availability in early childhood, but there is a need for kindergarten educators

to positively navigate assessment options using technology to contribute to learning and teaching practices in the classroom (Danniels et al., 2020).

The training and professional development that early childhood teachers receive can shift their use of technology integration into the classroom and can influence their beliefs (Chordia et al., 2019). Teachers who took part in a study of kindergarten assessment tools using technology noted that the technology assessment tools are shifting assessment to assessing the process, not just the product of student learning (Danniels et al., 2020).

Research Questions

The following research questions guided this basic qualitative study:

RQ1: How do early childhood teachers perceive ePortfolio training as it relates to their use of ePortfolios as an assessment tool in the classroom?

RQ2: How do early childhood teachers perceive the ePortfolio support they receive after training and implementation of the ePortfolio as it is used as an assessment tool in the classroom?

Conceptual Framework

The technological pedagogical and content knowledge (TPACK) framework explores how technology relates to subject matter and how it is taught (Koehler & Mishra, 2009). Technology is continuously changing education, and the requirements for teachers' integration of technology are changing quickly. Koehler et al. (2017) noted that research is focused on the outcomes of creating digital teaching portfolios and not how they can be used effectively using the TPACK framework. The TPACK framework is

helpful in the types of technology knowledge that teachers represent in portfolios, but it has essential challenges in usage.

The six types of knowledge are pedagogical knowledge, pedagogical content knowledge, technology knowledge, technological pedagogical knowledge, technological content knowledge, technological pedagogical content knowledge (Koehler et al., 2013). There were three main pieces of the TPACK framework incorporated within this study: the importance of technology, content knowledge, and the use of technology to teach content and skills. ePortfolios in the classroom use technology skills, content knowledge, technology, and pedagogical knowledge. The teachers' perceptions on the support being received directly correlated to the TPACK framework within this study guiding my research collection and organization. Teachers who can effectively integrate technology have seven types of knowledge, according to the TPACK framework (Koehler et al., 2013).

Nature of the Study

This study had a basic qualitative design. A basic qualitative approach was used to gain an understanding of how early education teachers perceive the training and support that they receive regarding the implementation of ePortfolios used as an assessment tool in their classrooms. A qualitative methodology was appropriate for the problem, purpose, and research questions. Qualitative design is best for a study when there is a body of information available and the researcher seeks to describe the understanding of a problem or topic (Percy et al., 2015). Qualitative research is rooted in the methodology of seeking how people understand and interpret the world around them

(Ravitch & Carl, 2016). Qualitative research tests the laws of behaviors, a theory, or a phenomenon, and a qualitative study's purpose is to understand how the study participants experience a phenomenon (Merriam & Tisdell, 2016). I sought to gain insight into how early education teachers perceive the training and support that they receive regarding the implementation of ePortfolios used as an assessment tool in their classrooms. I used a basic qualitative method, utilizing individual interviews to collect and analyze data. The qualitative methods was appropriate for this study's purpose, problem, and research questions and was best aligned for this study.

This research study focused on exploring the experiences of early childhood teachers who volunteered to participate in semistructured interviews. Semistructured interviews include questions guided by a topic and are organized and structured accordingly. The method was fit for this study because it provided human and behavior data on participants. According to Kvale and Brinkmann (2009), the most efficient way to collect data is often through semistructured interviews. Semistructured interviews give the interviewer the ability to change the question order and style to encourage the participants, giving them more flexibility in their responses and how they truly speak, think, and use expressions. In order to get the most open perceptions during a study, semistructured interviews give a researcher the highest level of raw evidence (Kvale & Brinkmann, 2009).

In this study, I used a sample of seven early childhood teachers who participated in interviews to share their perceptions on the training and support that they received regarding the implementation of ePortfolios used as an assessment tool in early childhood

classrooms. The interviews gave me the chance to develop more personal and descriptive understandings of the investigation that could not be found just from observations (Creswell, 2008).

Definitions

Below are some keywords associated with ePortfolios and technology in early childhood education:

ePortfolio: Collection of work in electronic format showing learning over time ("E-Portfolio," 2009).

Early childhood: The early stage of growth or development ("Early Childhood," 2003).

Digitalization: Integration of technologies into everyday life; the adoption technologists create from the use of new advanced technologies; development of technology, computerization of systems and jobs for better accessibility.

Digital portfolio: Computer-based collection of student performances over time; a showcase of student achievement and student learning over time (Niguidula, 2002).

Implementation: The process of making something active or effective (Lutkevich, 2022).

Education 4.0: An approach to learning consistent with the fourth industrial revolution, focusing on smart technology, robotics, and teaching students about technology as part of their learning and utilizing technology to improve student experiences (James, 2019).

Assumptions

This basic qualitative study was based on a few assumptions:

1. Interview participants cooperated on a voluntary basis in the research process.
2. Teachers involved in the study understood what ePortfolios are.
3. The district used for this sampling had a technology initiative, so all teachers in this research study were currently integrating technology within their classrooms.
4. Participants answered honestly when interviewed to reflect their true perceptions.

Scope and Delimitations

The scope of this study had specific boundaries. The first boundary was the topic. This study did not focus on the educational technology integration or effectiveness of multiple tools. This study did not focus on the decisions made in the integration process; rather, it focused on the teachers' perceptions, professional development, and attitudes related to teachers' experiences with ePortfolios. Last, the study was bound by its purpose, with the purpose of this study being to explore how early education teachers perceive the training and support that they receive regarding the implementation of ePortfolios used as an assessment tool in their classrooms.

This study was limited to early childhood education teachers using ePortfolios for digital student work on district-provided devices. I limited the study to the teachers' experiences within one district. The outcomes of this study did not reflect the experiences

of teachers in other grade levels or districts, and their training and experiences might vary.

Limitations

A limitation of this study was that I was the sole researcher, which limited resources and time. To reduce this limitation, this study was limited to the volunteer participants, who were teachers in a suburban school district within a southeastern state. The district was a suburban district, which meant that the teachers were pulled from rural and suburban areas where the populations vary, including a variety of socioeconomic backgrounds. The results of this study were not generalized for other districts or similar demographics.

The participants in this study were limited to early childhood education teachers in prekindergarten, kindergarten, first grade, and second grade. The study did not address teachers of other grades or content areas using the same tools. There was a set amount of interview questions, and the study was limited to the data collected within the interviews.

Significance

The findings from this study are significant to early childhood teachers because they may lead to more effective and widespread training and support, which may lead to more effective and useful implementation of ePortfolios. District administrators may benefit from the findings if the study shows that proper training and support benefit teachers and students in relation to the use of ePortfolios for assessment of student knowledge. Teachers across the nation use ePortfolios to collect, show, and reflect on students' work that has been completed (Karlin et al., 2016). The students served by the

teachers may benefit from the findings of this study if their teachers are proficient in guiding students in capturing evidence of their learning to become more self-directed learners effectively (Renwick, 2017).

ePortfolios provide both functionality and technology in a personalized learning experience for students while tracking authentic evidence (Saarinen et al., 2016). ePortfolios usually consist of photos, text, or projects that are independently chosen by the students, giving the students ownership of their work (Saarinen et al., 2016). Students and teachers could benefit from having knowledge that could be used to create trainings in the future that effectively celebrate the student learning being published in their ePortfolios and be given the sense of ownership in the assessment of their knowledge. This study may promote positive social change by making information about teachers' training needs and knowledge more widespread and available to administration and district officials prior to use and implementation of ePortfolios as an assessment tool within the classroom.

Summary

ePortfolios have influenced education and the integration of technology within the classroom. Technology is a tool within education. The training and support that teachers receive regarding technology integration are important because the use of technology is continuing to expand in education, and there may be a lack of consistency in the training and support in the implementation of ePortfolios. Teachers are using technology within their classrooms, and it is necessary to understand the quality of use of technology in classrooms for determining effectiveness. In Chapter 2 of this study, I review the

literature on the understanding of ePortfolios, technology integration, early childhood education, and the relationships of teachers and technology in classrooms.

Chapter 2: Literature Review

Introduction

The problem was that in early childhood classrooms, there may be a lack of consistency in the training and support in the implementation of ePortfolios. The purpose of this basic qualitative study was to explore how teachers perceive the training and support that they receive regarding the implementation of ePortfolios used as an assessment tool in early childhood classrooms. Issues surrounding training and support for ePortfolio use in the elementary classroom include equity of access for teachers and disconnect with ePortfolios and the curriculum (Poole et al., 2018). According to Nagle et al. (2019), teachers integrating ePortfolios have experienced issues with receiving little training and support in order to integrate this technology for assessment. This chapter includes a review of literature on the implementation of ePortfolios along with the training and support provided to early childhood teachers. First, I review literature related to ePortfolios within education and ePortfolios as an assessment tool. The next two areas reviewed in this chapter are the barriers and challenges with ePortfolios in education and the relationships of teachers and ePortfolios within education. Assessments in both traditional and digital form are addressed in the literature review, along with the pandemic's influence on technology and digital education in early childhood education.

Literature Search Strategy

The search for literature to find evidence of ePortfolio training and support for teachers started with SAGE Journals online, ERIC, EBSCO, and the ProQuest Dissertations database. I also used Thoreau through Walden University's library. Some of

the keywords used to find studies were *ePortfolios*, *early childhood education*, *digital portfolios implementation*, *ePortfolio implementation*, *digital portfolios*, and *ePortfolio integration*. I then located studies on technology within the classroom using the keywords *technology integration* and *technology training.*

After finding studies and articles that were relevant, I searched through the cited literature by links and authors' names to find articles and studies within Google Scholar published within the last 3 years that were relevant to this study. Following research on a broad level, I narrowed my searches to specific areas needing to be supported. The first area was teachers and their relationships with ePortfolios. I used to Google Scholar to begin my search of documents. I began by setting the date range. The keywords used during this search included *ePortfolio teacher training* and *ePortfolio elementary education.*

I then began research on specific ePortfolio applications and their use within classrooms. I conducted my first complete search through Google Scholar. I limited my years first to 2018–2020 in order to gather only the most recent information and research on the topic. I began by using keywords such as *seesaw in early childhood* and *seesaw integration in classrooms.*

My next narrowed criteria were ePortfolios and their use with assessments. I began by searching in EBSCO through the Walden University Library. I used the keywords *ePortfolios AND early childhood AND assessment.* I used the same keywords to search in Google Scholar following my search with ESBSCO.

After a broad search, I began to find other keywords to aid in my research, making a collection of terms that might help in my searches. I began within the Education subject heading. Following that, I selected individual databases. The first database searched was Education Source. My first search consisted of the following terms: *ePortfolio or e-portfolio or electronic portfolio, AND professional development or professional learning or training or support or professional education or teacher training or teacher development or teacher learning, AND ECE or early childhood education or kindergarten or first grade or second grade.*

The next database searched was Science Direct journals. I used the advanced search tool. I then used the same keywords of *ePortfolio or e-portfolio or electronic portfolio* and limited the years to 2018–2021.

Another broad search was done through Thoreau at Walden University library. The key words used were *mobile devices or cell phones or tablets or smartphones AND early childhood education.* I limited my search years to 2018–2021.

I then used the Taylor and Francis online database found through Walden University. I used the advanced search tool again. I used the same keywords that I had used previously as well as a few additions, *ePortfolio or e-portfolio or electronic portfolio, ePortfolios AND early childhood AND technology integration*. For the next search, I used just *ePortfolio or e-portfolio or electronic portfolio, ePortfolios*. I limited the years to 2019–2022.

Searching through the Walden University library, I began to use subjects other than education. The first subject was technology. I started in the field of technology and

applied sciences. The keywords used were *ePortfolios or seesaw or Weebly or digital portfolio or e-portfolio AND early childhood or kindergarten or first grade or ECE.* I limited the years published to 2017–current.

Another education source search was completed. I used the advanced search tool. The keywords used were *digital documentation, early childhood education, ECE, kindergarten,* and *preschool.* I limited my search to 2018–2021. I then used the same keywords to search in Taylor and Francis and ERIC.

The final two searches that I completed started with the Walden University library. I first used the keywords *pandemic, coronavirus, COVID-19, lockdown,* AND *blended learning, e-Learning, distance learning,* AND *early childhood education*. I then limited the years to 2020–2021. I then used the same keywords to search within Google Scholar.

Conceptual Framework

The TPACK framework addresses how technology relates to subject matter and how it is taught (Koehler & Mishra, 2009). The TPACK framework expands on Shulman's (1986) pedagogical content knowledge and how technology shapes specific learning experiences. The TPACK framework is used to describe or identify what educators need to know to effectively integrate technology into the learning process.

Technology is continuously changing education, and the requirements for teachers' integration of technology are changing quickly. The constant change and teacher requirements informed the research questions in this study. The perceptions and knowledge of early childhood teachers on ePortfolios may affect their successful

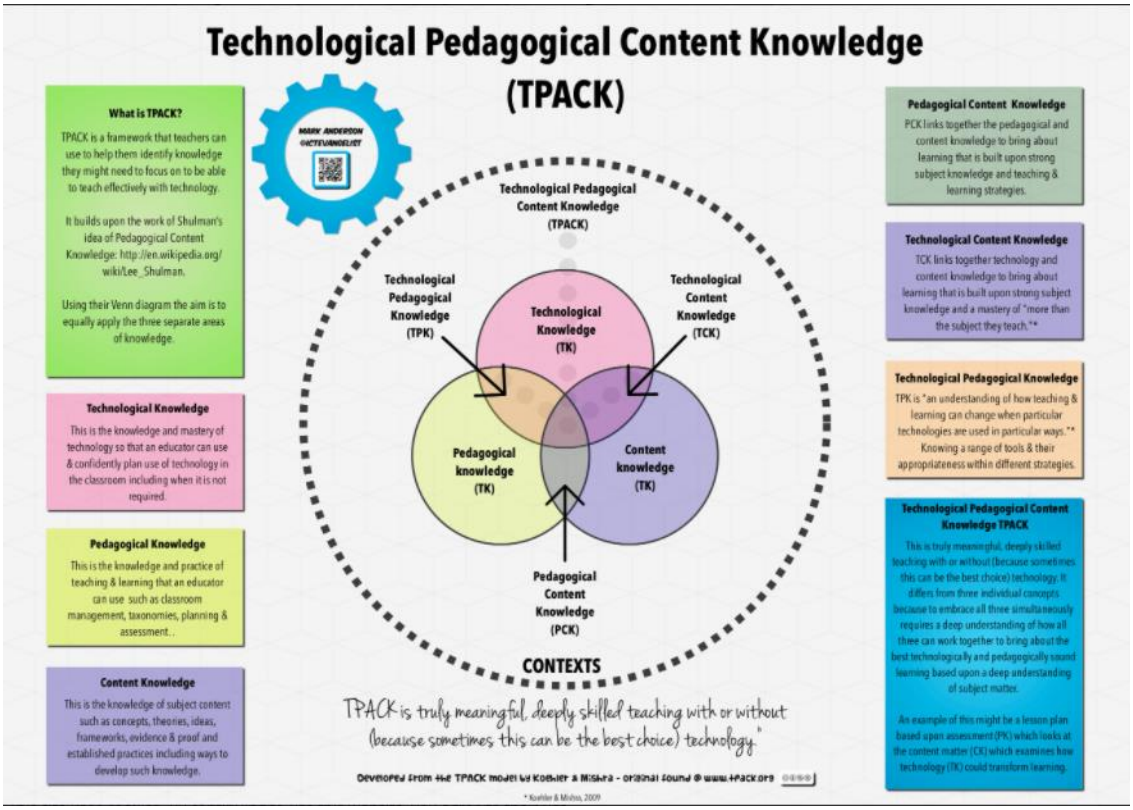
integration of ePortfolios within their classroom. Research Questions 1 and 2 were related to teacher perceptions and their use of ePortfolios within the classroom.

Teachers who can effectively integrate technology have seven types of knowledge, according to the TPACK framework (Koehler et al., 2013). The seven types of knowledge are technological content knowledge (TCK), content knowledge (CK), technology knowledge (TK), technological pedagogical knowledge (TPK), pedagogical content knowledge (PCK), pedagogical knowledge (PK), and TPACK (Koehler et al., 2013). Figure 1 indicates the seven types of knowledge from which the TPACK is formulated. Research question 2 was derived from the seven types of knowledge to effectively integrate technology based on the teachers' professional development and training that they had received prior to integration of ePortfolios. The TPACK framework can guide teachers in designing student work that fits the tools, knowledge, and instructional strategies being used.

Figure 1 shows the three circles in the middle of content knowledge, the content that educators teach or what they want their students to learn (Koehler & Mishra, 2009). Technological knowledge is the knowledge that educators have on the technology available to them that is appropriate for the lesson. Technological content is the how the tools can improve the content learned and how the learners use technology. Pedagogical content knowledge is evident when educators recognize best practices for specific content. In Figure 1, the place where the knowledges listed above intersect is the TPACK framework (Koehler & Mishra, 2009).

Figure 1

Technological Pedagogical Content Knowledge (TPACK): Seven Knowledges



Note. From Anderson, 2013.

Literature Review

ePortfolios as Documentation Tool

ePortfolios are collections of evidence of what a student has learned over a period of time (Roberts & Krik, 2019). ePortfolios can be used in multiple formats, on multiple platforms, and in a variety of styles (e.g., Blogger, WordPress, Workspace) or through a platform supported by an organization. Google Classroom can be set up for students and used as a digital portfolio or ePortfolio, using Google Forms to collect data and easily organize the data in another tool available to educators (Johnson & Skarphol, 2018).

Digital documentation platforms is another name for ePortfolios, websites or applications being used to record and document student learning (White et al., 2021). Flipgrid is a digital tool that students and educators can use to create a video or take a picture and then respond to their classrooms or give feedback to one another; these videos and student communications can then be used for assessment of student knowledge (Johnson & Skarphol, 2018).

ePortfolios can be private or public and are becoming widely known across education platforms as a means to improve student learning and outcomes (Roberts & Krik, 2019). ePortfolios are an online tool that can be used to foster engagement with parents, teachers, and students in the early childhood setting (Gallagher, 2018). ePortfolios were introduced with digital technology in the early childhood setting, and their use has been a debated topic in education settings for years (Gallagher, 2018). There is little research on the use of applications to document and communicate about young learners (Stratigos, 2021). Some of the applications used for this purpose are Kinderloop, brightwheel, Kindyhub, Educa, Xplor, and Storypark, and there are millions of educators worldwide who use these technologies (Stratigos, 2021). According to White (2021), digital documentation platforms are websites or applications that allow for observations of learning to be recorded; these platforms are growing in popularity in early childhood education. ePortfolio technology has expanded into the early childhood education field as working moms have entered the workforce, keeping families closer to their children's learning experiences (Gallagher, 2018). These platforms are changing education and changing the work of educators in early childhood (White et al., 2021).

ePortfolios effectively allow for students to show their understanding and evidence of their learning over time (Paulson & Campbell, 2018). Reflection and conversation at the postsecondary level focus on the concerns and goals for ePortfolio adoption, communities of practice, and the scholarship of teaching and learning, supporting ePortfolios and the implementation of the technology (Paulson & Campbell, 2018). There are a variety of applications that offer digital assessment, documentation, and communication for teachers, students, and their families, and the main goal of ePortfolios is to share information and document students' experiences in the classroom (Stratigos & Fenech, 2021). ePortfolios make it easier for teachers to collect and share evidence from the classroom in real time (Buchholz & Riley, 2020). According to educators, these apps are easy to use, are fast, and allow for the creation of professional posts to share with families and document educational experiences (Stratigos & Fenech, 2021).

ePortfolios as Assessment

ePortfolios, also known as digital portfolios, can be used as an interactive way to capture what students have learned. Students can create pictures and tables as alternatives to a paper-and-pencil assessment, and the portfolios can be incorporated into multiple courses in education (Russell, 2018). An ePortfolio is a modern alterative form of an assessment whereby students' work is compared to their own previous work, not to the work of other students within the class (Zafiropoulou & Darra, 2019). One of the reasons that teachers, schools, companies, and districts give for integrating technology into assessment is to improve the efficacy and ease of assessment of learning in early

childhood (Danniels et al., 2020). ePortfolios allow for sharing of documentation between families and educators; this appears to be one of the predominant functions of most apps in early childhood education (Stratigos, 2021). Seesaw is an application that allows for educators to document student learning through photos, videos, files, and links, and it uploads all the items to a student journal (Buchholz & Riley, 2020). Some of the applications have learning tags that can link curriculum to the observations shared (Stratigos, 2021). When students can control their own thoughts, actions, and motivation toward their educational goals, they are engaging in what is known as *self-regulated learning* (Tur et al., 2019).

Assessments within education can be both formative and reflective. A downside to tech-based assessments has been the large number of visual materials that now need organization (Danniels et al., 2020). Assessment in early childhood involves gathering evidence on what children know and can do, which involves documenting and collaborating with children's families (Stratigos, 2021). Digital slideshows can be a form of assessment and portfolio documentation that can be used as communication with parents (McGlynn-Stewart et al., 2017).

A mixed method study was done to look at the engagement of students within early childhood education and their ePortfolios as a tool for assessment. In early childhood education, teachers are expected to assess students based on observations of play or activities to assess their levels against a given rubric. Digital documentation programs allow for teachers to document, tag, and assess photos, videos, and observation notes (Flewitt & Cowen, 2019). When educators are assessing students using ePortfolios,

they use rubrics. A rubric is a rating scale with criteria for each rating to inform students on their progress (Tur et al., 2019). Teachers are able to write observations and take pictures or videos while students are engaging in play and then assess the documentation against the rubric or levels used within their curriculum (Flewitt & Cowen, 2019).

A case study was completed on early childhood classrooms at five elementary schools and their use of iPads as formative assessment tools (Harvey, 2019). According to this study, technology can be used to meet students' learning needs within the classroom (Harvey, 2019). Assessments in early childhood can occur frequently through digital documentation of photos during periods of play (Danniels et al., 2020). Teachers need training to be provided clear direction within the early childhood classroom in order to use ePortfolios and technology as a formative assessment tool (Harvey, 2019).

Assessments through the digital setting during COVID-19 were difficult due to the complicated circumstances, and the data were dependent on what teachers saw during their brief encounters or reliant on evidence that was sent by the students' guardians (Herrera & Dreifuss-Serrrano, 2020). Assessments given or used through digital documentation can be shared with parents to see or comment on how their student is doing (Flewitt & Cowen, 2019). The evidence of learning captured by the guardians often reflected parents helping their children with the answers or misunderstanding the goal of the lesson (Herrera & Dreifuss-Serrrano, 2020). Children in early childhood programs often have difficulties understanding online platforms (Herrera & Dreifuss-Serrrano, 2020). Formative assessments are one piece of the two assessment types used within the classroom. Formative assessments give the teacher evidence needed to make teaching fit

the needs of the students (Tur et al., 2019). When assessments are integrated into a computerized item, they do not stand out as much as traditional assessments, and students can stay engaged in tasks without stress (Hautala et al., 2020).

Self-regulated learning is when students control their own thoughts, actions and motivation in education and it has three phases: performance, reflection, and forethought (Tur et al., 2019). Turr, Urbina, and Forteza (2019) combined formative assessment and self-regulated learning through the use of ePortfolios in the classroom. The use of ePortfolios in the classroom combined with formative assessments can contribute to student autonomy while increasing self-awareness, and engagement (Tur et al., 2019). Computer based assessments can simplify assessments for educators and help teachers identify quicker the students who need support (Hautala et al., 2020). There is a push in teacher accountability, and digital documentation serves as this accountability (Danniels et al., 2020). The learning experience provides two forms of written feedback through the rubric attached to the formative assessment and the ePortfolio (Tur et al., 2019)

Educators can use apps for ePortfolios for their own observation documentation but, also involve the students in their documentation (Stratigos & Fenech, 2021). Students can use these applications with their writing, video recording, and to take their own photos providing more rich documentation (Stratigos & Fenech, 2021). Informal assessments online can often be seen as comments/feedback directly on students work online, these are assessments that are not always graded or formal but are necessary in student engagement, and learning in the digital setting (Hickey & Harris, 2021).

Traditional Assessments in Early Childhood

As of 2011 standards based instruction reached kindergarten, and early primary teachers where teaching academic standards and engaging in assessments and testing of students (DeLucam et al., 2019). The main purpose of having educational assessments is to document students' performance, and gather information for improvement and evaluation (Kincaid, 2020). Kindergarten teachers are now mandated to give assessments, and have rigorous reporting which then increases the student accountability, and achievement (DeLucam et al., 2019). An assessment tool is used at the beginning of kindergarten, it provides educators with a brief overview of their students' readiness for school, known as the Kindergarten Entry Assessments (Little et al., 2020). Assessments previously were stored in paper pencil form, and most educators would keep the paperwork, not sending it home to parents so it was not lost or damaged (Flewitt & Cowen, 2019).

Assessments in early childhood are often given in a one-on-one setting for their accuracy, and measuring of knowledge of our students (Piasta et al., 2018). Language, and early literacy skills are taught most of the time in a multitiered system of support where universal screenings and other assessments identify children who need supplemental support or intervention (Kincaid, 2020). Often assessments in early childhood are lengthy and take a significant amount of time to administer to children; the brief assessments often do not measure letters, sounds, fluency, and other skills (Piasta et al., 2018).

There are several assessments used in early childhood in education across the nation, Letter-Sound Short Forms (LSSF), Phonological Awareness Literacy Screening (PALS), Pre-Reading Inventory of Phonological Awareness (PIPA), and the Kindergarten Readiness Assessment-Literacy (KRAL) (Piasta et al., 2018). Teachers in early childhood education want to document student learning across time, rather than having a final assessment to represent learning outcomes (Buchholz & Riley, 2020). In early childhood progress monitoring of alphabet knowledge is necessary to show growth, and the LSSF assessment provides this for educators (Piasta et al., 2018). Assessments that support intervention in early childhood have 4 ideas, development of academic achievement during preschool links to later reading abilities, the second is the evidence that intervention promotes early literacy competencies, next that early intervention targets promote achievement in elementary school, and later academics; the fourth is that assessments are used to aid teachers in data driven decisions in their students learning (Kincaid, 2020).

Barriers and Challenges With ePortfolios

Haralabous and Darra (2018) explored the attitudes and perceptions of elementary teachers on the advantages and disadvantages of ePortfolios and their obstacles. The study was a large research study with over two hundred teachers from Athens. The study founded that ePortfolios enable to the assessing of a wide range of skills and encourages cooperation between students and teachers and increased participation (Haralabous & Darra, 2018). However, the results show that the problems were in the lack of culture and forms of assessment along with teacher reluctance to the ePortfolios. It was also found

that lack of support from parents, and the community was a problem in the implementation of the ePortfolios, believing that teachers did not want to take the risks to apply the ePortfolios (Haralabous & Darra, 2018).

There is a lack of training during teacher preparation programs for educators on how to implement technology into the classroom (Shahin-Topalcengiz & Yildirim, 2020). There are many challenges with integrating technology for educators. Some of those challenges can be extrinsic, such as lack of time, resources, availability; and some can be intrinsic such as, lack of understanding, professional knowledge, training or confidence (Hilaire & Gallagher, 2020). In order to effectively implement technology into the classroom educators need to have content and pedagogy knowledge in technology (Shahin-Topalcengiz & Yildirim, 2020).

It was reported in a study, completed in 2019 in a preschool classroom, that teachers lost data due to technical issues saving and sharing, and the teacher found that the digital documentation method was not worth the risk of losing data and continued to print, and use paper pencil documentation method for assessing her students (Flewitt & Cowen, 2019). In the same study another school used digital documentation instead of paper documentation, and the teachers used iPads to take photos, videos, and then added observation notes to the digital portfolio. The teachers used tags to tag specific children and statements for assessment tracking (Flewitt & Cowen, 2019). The parents of the students, and other staff within the school could view the students' portfolios, could comment, and add their own data as well, iPads were always available to be used for documentation in all sessions, and the teachers also allowed the children to take pictures

or videos of themselves (Flewitt & Cowen, 2019). According to Shahin-Topalcengiz and Yildirium (2020), educators have a lack of knowledge, equipment, and educators are the primary person responsible for integrating technology, and if teachers are not equipped with the skills to integrate technology they do not use them.

Digital literacy skills are an educators' knowledge of technology skills needed to implement technology within the classroom (Dilek, 2019). Educators need differentiated support in their technology integration meeting their needs an educators just they do for their students (Hilaire & Gallagher, 2020). Pre-Service teachers need to be given experiences to integrate technology into their courses, and teaching, during teaching practicums educators should be given the opportunity to use technology-integrated activities with the children (Dilek, 2019). The teachers need enough time to explore, practice and become comfortable with the technology (Hilaire & Gallagher, 2020).

It takes time, experience and training to get used to ePortfolios (Totter & Wyss, 2019). Negative or dismissive attitudes of teachers on ePortfolios can threaten and undermined the adoption with in education (Habeeb & Ebrahim, 2019). It is important to implement ePortfolios over periods of time sooner in education, and in multiple subject areas, without guidance in ePortfolios, and well planned implementation they can become a burden and lose their meaningful value (Totter & Wyss, 2019). Some of the challenges with ePortfolios are the impacts of educator-child relationships, the influence of parents, workload, and equity of access (Stratigos, 2021).

The classroom experiences of teachers can lead to reversal of the preexisting conceptions on e-portfolios (Habeeb & Ebrahim, 2019). According to recent study,

parents are concerned that time is being taken from teaching and interacting with students to document and communicate on the applications (Stratigos & Fenech, 2021). The use of ePortfolios help children improve their task performance with goals and helps them evaluate their own skills and outcomes (Habeeb & Ebrahim, 2019). There is little research on the time educators spend documenting childrens' learning and the claim that these apps are decreasing time educators spend documenting (Stratigos & Fenech, 2021).

Digital Technology and Early Childhood

The Pediatrics Committee of Education in 2001 recommended to reduce children under six years the use of screen media, which came about because of the overuse of devices causing children to miss developmentally appropriate activities (Cassiakos et al., 2016). Technology's impact on early childhood education is determined by how it is used, and the concerns of it replacing rather than enhancing teaching practices (Danniels et al., 2020). There are practitioners that feel digital media do not have a place in early childhood, and express concerns with the suitability of technology for children causing challenges and debates (Flewitt & Wyse, 2020). Prior to the 2020 pandemic a perception held by the teachers of the United Nations, was that students' access to technology was everywhere, but the global pandemic brought to attention that digital technology is not accessible to all students (Cochrane, 2020).

There is a lack of evidence in the implementation of apps that enhance children's' learning; constructive apps are ones that are flexible, and constructive apps require teachers to make activities that motivate students to engage in their learning (Tavernier & Hu, 2020). Technology in the classroom is changing education for educators and

students. Digital technology in the classroom makes teachers change their routines, and practices, and their beliefs to have effective integration of technology in early childhood (Flewitt & Wyse, 2020). Technology integration into the classroom has not been easy. Teachers beliefs, lack of experiences of using technology in their classrooms, and lack of guidance are just some of the factors that are affecting teachers negatively as they are expected to explore these new possibilities in education (Tavernier & Hu, 2020).

Children can become more involved in their own educational journey by having them write stories on the applications, taking photos or videos (Hooker, 2019). Play can be considered one of the most important pieces in a child's experience but in today's society play can be video games, computers, and more (Slutsky et al., 2021). Children today spend a lot of time in front of screens, and many children prefer technological play rather than traditional forms (Slutsky et al., 2021). Digital creation apps are new for students in early childhood, allowing children to integrate their personalities into their education, and use the tools they like within the applications and linking the activities to previous work all was shown to increase student motivation and quality of work (Tavernier & Hu, 2020).

According to a Habeeb and Ebrahim's (2019) study it is recommended that kindergarteners should be given tablets with high-speed internet. Stakeholders should promote use of ePortfolios in kindergarten, and teachers should train students in the use of ePortfolios, and tools for challenging technological tasks. Just as teachers need training in ePortfolios, the children using the e-portfolios need training to be able to use these as a tool for problem solving and performing challenging tasks within education (Habeeb &

Ebrahim, 2019).The using of tablets, and devices in education is still new in teacher education programs. The preparation of teachers now focuses on how to integrate technology into early childhood appropriately (Aldemir et al., 2019). Educators should be ready to support their students digital skills. Teachers need to have the skills needed to integrate technology into their classrooms, and understand the value or technology in education, because technology can expand students learning if they are used correctly (Aldemir et al., 2019). Technology isn't going away, so educators need to find the positive in the new technology and enrich children's' experiences (Slutsky et al., 2021).

Impact of COVID-19

The COVID-19 pandemic forced schools to close, and was the beginning for many teachers, students, and parents of their first digital learning environment journey. Prior to the pandemic online delivery of instruction was limited (Wieland & Kollias, 2020). According to White et al., (2021), most teachers thought they were ready to manage digital platform teaching, many teachers had been integrating technology into their classes. Teachers although online learning was taking place, students were still being provided with the tools needed to learn, engaged, and motivated in their learning (Wieland & Kollias, 2020). Most teachers were familiar with google classroom, and basic digital technology, and were equipped with the technology and internet access (Aditya, 2021). A lot of teachers see online teaching difficult and beyond their ability, some others engage in the technology and process (Wieland & Kollias, 2020). Prior to the pandemic only a few teachers recognized that some students only had limited access to internet or technology (Aditya, 2021).

COVID-19 changed teaching perspectives, and it is likely that old modes of teaching will not resume (Wieland & Kollias, 2020). Technology in education has been accelerated by the COVID-19 lockdowns, closing schools everywhere, and creating a need for digital technology use in education more than before (Korkmaz & Toraman, 2020). There was be a shift in learning face to face, and online learning could be resumed if needed at any time for students and teachers, prior to the pandemic, digital platforms in education were often an exception, not the norm (Wieland & Kollias, 2020).

The roles of educators post the COVID pandemic is going to continue to change, and it has brought new literature to the world of educational research (Korkmaz & Toraman, 2020). Distance education was forced on the education system regardless of the conditions or willingness of all participants due to COVID-19 (Aditya, 2021).

This pandemic forced students to take control over their learning, and gain responsibility while educators are using online platforms as a way of learning, not every student is suited for digital learning, and this COVID pandemic may have created more challenges, and problems for educators in the future (Korkmaz & Toraman, 2020).

In the Spring of 2020, the COVID-19 pandemic stay at home order forced schools to switch to a virtual environment, and changing children's daily routines upside down (Szente, 2020). The 2020 pandemic shifted learning to online, and helped many people appreciate that testing, and grading have not kept up with educational technology changes (Hickey & Harris, 2021). Teachers, and students relied on contact with their classrooms through technology, and parents were put in a home-school parenting role with no warning or preparation. Teachers began using Zoom, google meets, or other live video

chat services to instruct their students. A study was completed that looked at over fifty Zoom sessions during the COVID pandemic, all with early childhood students ranging from toddlers to preschool age (Szente, 2020).

According to Szente (2020), the teachers appeared comfortable with the operations, they were sharing screens, using books, links and activities, these teachers also shared additional items each day through online classroom platforms for their families; the class sizes were smaller due to participation then leading to those students who were participating getting more chances to share, and participate, the children were engaged in songs, movement, and focused.

Teachers and ePortfolios

Education 4.0 is a term that refers to technology and its growing relationship with students, and the teachers who become facilitators to the learning within their classrooms (Hussin, 2018). Technology integration should focus on how to integrate technology into education rather whether the technology is appropriate (Aldemir et al., 2019). Since 2011 there has been an increase in mobile technology such as tablets, and iPads being used in teachers instruction providing teachers ways to have efficiency in assessing students, immediate feedback, communication in real time, social sharing, and more (Aldemir et al., 2019).

A qualitative study on the teacher perspectives on digital portfolios in 2019 looked at teachers who had completed a professional development from their school district (Simons, 2019). The teachers were interviewed, and they all reflected upon their training the teachers stated that some of the purposed of the digital portfolios were

communication, growth, showcase, documenting, and more. These teachers held digital portfolios at a high level on importance within the implementation of technology, and that it is necessary in the purpose and growth of instruction. However; they remained impacted by the teachers' knowledge, and support of the needs of their students (Simons, 2019).

The learning within education 4.0 happens in a variety of places. Flipped classrooms are a large part of this process. Learning can take place outside of the classroom. The learning is personalized and students have a choice in how they learn (Hussin, 2018). Also within this education model students are using more of a collaborative project based approach to learning with a more hands on learning model, teachers are assessing students differently because of the changes in the learning (Hussin, 2018). The changes in technology within education mean that educators need to learn and prepare on all the digital tools available. One of those digital skills necessary for teachers to equip themselves with is the creation of digital portfolios through tools such as, Seesaw, Pathbrite, Slike, Weebly, and google sites (Hussin, 2018).

ePortfolio Applications

Digital documentation tools or platforms can be websites, or applications that let educators, and students keep record of their students learning (White et al., 2021). Seesaw is an application that can be used for ePortfolios of work done within the classroom within education (Drennan, 2019). Many applications are not appropriate for early childhood learners, they often have in app purchases, commercials, lack of creativity, and more (Aldemir et al., 2019). Digital documentation allows for students

learning to be visible across the world, digital documentation tools are applications or websites that can be used on technology to record observations, or learning in text or visual forms (White et al., 2021).

Teachers can find technology to be time consuming however Seesaw gives students the opportunity to use their voice when submitting work and be engaged in a novel way (Drennan, 2019). Educators were seen using seesaw as a tech based assessment tool, tracking students activities and their digital documentation to serve as proof of learning (Danniels et al., 2020). There is not much known about how these digital documentation platforms that are being used and how the educators are seeing or not seeing their students learning through the digital documentation tools (White et al., 2021). Many educational apps or programs practice skills through game however; applications that involve student creation hold more value for early childhood students (Fantozzi et al., 2018). The creators of the digital documentation platforms have given educators the means to upload information, and showcase students learning that can then be accessed by families, other educators on computers, cell phones at any time of the day, and then those items can be shared to the families social media (White et al., 2021).

ePortfolios can have challenges and may not work for all teachers. Results of one study recommended that all teachers try it (Drennan, 2019). The study notes that it took time and trial to figure out what worked for her students and in her classroom (Drennan, 2019). A commonly used tool for assessment through early childhood in education is Seesaw (Danniels et al., 2020). By using Seesaw students are able to post as often as possible, giving the teachers a real sense of what the students are able to learn (Danniels

et al., 2020). Student work is able to be tagged, tracked, marked complete, incomplete, and scored. Educators need to be able to easily see the learning within the documentation on the digital portfolio; by tagging student work is it more likely to be seen and it will be linked to curriculum, storypark, and seesaw both allow for tagging technology (White et al., 2021). Storypark has preloaded tags that have key curriculum elements that allow for educators to tag what learning is taking place in the assessment or activity within the students portfolio (White et al., 2021). Educators using tags allow for patterns in learning to be tracked, the data can then show pattern over time or allow for educators to compare across multiple classrooms or schools (White et al., 2021).

Teachers are challenged with assessments through both the paper form and the digital methods, assessments in early childhood can range from standardized to photos, checklist, student work samples (Danniels et al., 2020). ePortfolios are a craft in education when they are started in the early school years and it is a process and with support their effectiveness and functionality can aid in the learning within classrooms (Saarinen et al., 2016). Seesaw is another application that allows for educators to documentation student learning through photos, videos, files, links, and it uploads all the items to a student journal (Buchholz & Riley, 2020).

Educators understand the need for assessments that positively impact learning, and teaching but also the increase in technology based options for students, within this study note that the shift in technology based assessments has shifted assessments to documenting the learning process not the product (Danniels et al., 2020). Educators who use ePortfolios or digital documentation application have the ability to track learning over

time easily, for example how many pieces written by one child as well as the growth over a long or short period of time b specific students (White et al., 2021).

Technology Integration in Early Childhood

Technology is becoming more evident in education, and early childhood teachers should focus on introducing technology into their classrooms in order for the children to become "technology literate students" (Karno & Hatcher, 2020). Technology's educational value was first found to be beneficial for preschoolers when Blue's Clues, and Sesame Street showed that content knowledge can come from interactive television shows (Chordia et al., 2019). Teachers need to use their knowledge of their students to make decisions on technology integration in their curriculum. Young students learning can be enhanced if interactive technology is used appropriately (Fantozzi et al., 2018). Young learners are gaining the skills needed to understand technology and they are gaining high levels of patience and skills to resolve technology problems, and learning to adapt quickly to the changing technology difficulties (Karno & Hatcher, 2020). Technology use in education has the potential to change the boundaries of traditional classrooms (Kim et al., 2019).

The use of educational tablets can increase the engagement in the educational process with teachers and students, these activities are designed to be student focused, and more interactive than the traditional classroom approach for instruction (Kim et al., 2019). Tablets allow for more flexible, and personalized learning and support for students (Kim et al., 2019).

Play in early childhood classrooms can be done through technology, students can remain physically active, and engaged with their peers in play (Karno & Hatcher, 2020). The selection of applications, and technology should be focused on ones that allow for creation, communication, and collaboration, helping students build their digital literacies preparing them for our global society (Fantozzi et al., 2018). Children enjoy using technology; but enjoy using it with their peers transformed play for early childhood education, the students can work together, explore, and problem solve in groups (Karno & Hatcher, 2020). The new technologies have helped increase multimodal learning, children are able to create with ease on devices using apps that are available (Yelland & Gilbert, 2018).

Child centeredness is when the education is based on the students interests, and needs. In most cases, the students are working on their own items. Technology allows for more child centered activities giving students interest in their activities (Bautista et al., 2021). The traditional teacher centered classrooms have been replaced by student centered students can now instantly access the information they need or want with mobile devices. As teachers relationships with technology increase the use of technology within the lessons and activities increases (Yilmaz, 2020).

When technology integration is used it encourages students to focus longer, and allows for students to continue their work outside of the classroom (Yilmaz, 2020). While technology disrupts education it is changing the pace, path of student learning, and the place, technology skills are a part of life for students nowadays (Torrato et al., 2020). When technology integration is within early childhood classrooms, students can have

both real world, and new technology experiences which make for more understandings, and deeper connections. These are made possible when teachers encourage their students to make the connections between the modalities (Yelland & Gilbert, 2018). Technology is not an option in education anymore, it is necessary (Torrato et al., 2020). Children can use devices in playful times, and explore and communicate their ideas, and understandings. The students can use creative apps they can create eBooks, explore, reflect on their learning, and share their work (Yelland & Gilbert, 2018). Technology should be integrated gradually into the educational process, and should increase as students grow, and become more involved in technology (Yilmaz, 2020).

MadPad is another app children can use to share pictures, sounds, and use their to produce their own projects or works, and this gets students engaged in real world play while using technology to share and create their educational projects (Yelland & Gilbert, 2018). Technology within kindergarten can have several positive effects on children's learning, and development, computers are different than within higher grades but in the early childhood education classroom is it visual, auditory, promotes vocabulary, metacognition, problem solving, and exploration (Magen-Nagar & Firstater, 2019). Parents of early childhood students also need to be convinced that technology will not overtake play within their child's classroom, by using technology for parent communication, and allowing parents to see the students digital portfolios, projects and creations they are able to see how their children are growing (Fantozzi et al., 2018).

Technology Training for Early Childhood Teachers

Teachers digital literacy skills are their cognitive and socio-emotional abilities to operate technology devices (Altum, 2019). Teachers are supposed to be able to guide young learners in developing their digital literacy and computational thinking skills (Murcia et al., 2018). The teachers' capabilities are the key piece in technology integration in education (Altum, 2019). When teachers have constant use of technology within the curriculum, and their school follows it can increases their skills, and beliefs on technology-driven instruction (Torrato et al., 2020). Teachers of our students need to be competent with digital practices in education (McGlynn-Stewart et al., 2017). In order to support educators in their implementation of technology, the educators' needs must be identified (Hilaire & Gallagher, 2020).

Teachers integration of technology in their teaching needs to be prepared, and should give the educators a solid understanding of the technology in order to make learning meaningful and relevant (Torrato et al., 2020). Administration are the first implementers, of new educational policies and cognitive levels have to change to meet the needs of the new educational era (J.-H. Park & Byun, 2021). Teachers respond positively to differentiated support when it is provided to them, their needs, and objectives need to be met as they work through the technology implementation in their classrooms (Hilaire & Gallagher, 2020). Integration of technology is not just in the teaching but also the administration, and management of the staff and school (J.-H. Park & Byun, 2021). According to Park (2018) teachers who spend more than twenty hours using technology a week have higher teacher knowledge, and teacher content knowledge

over the teachers who spend less than five hours a week. By providing differentiated support to education, educators are able to be met where they are in enhancing their practices of using technology (Hilaire & Gallagher, 2020).

Pre-service teachers need the opportunities to have hands on experiences with technology integration in schools the TPACK design have major effects on technology integration, the study showed that teachers who's TPACK competencies and practice were able to conduct technology activities within the classroom (Altum, 2019). The successful use of digital technology in early childhood education is dependent on appropriately designed activities, and materials that teachers integrate into the learning environment for students (Murcia et al., 2018).

The spring 2020 pandemic regardless of teacher experience, or training teachers had to completely shift their classroom to web based teaching using online platforms (Buckley-Mardudas & Rose, 2020). The country had never experienced this before and education did not know how to lead schools, teachers, or families through this remote learning experience (Buckley-Mardudas & Rose, 2020).

ePortfolios for Communication

Educators are able to use digital tools to communicate with their families; apps can provide a range of communicative methods for educators, and families(Buchholz & Riley, 2020). The increase in the ePortfolios in early childhood education has aided in the building of relationships among teachers, and the families of the students (Aisling, 2018). Students, and educators are able to digitally document in a digital portfolio and make it visible to families, so that families can have conversations about what is happening at

school (Buchholz & Riley, 2020). Parent communication, and involvement are trademarks of high quality education at the young age. High parent involvement can contribute to better self-esteem, and academic performance (Gauvreau & Sandall, 2019). In the app Seesaw, parents are able to see life in the classroom, and instruction, this is a tool to communicate with parents but also an ePortfolio application allowing for teachers to assess, assign, and document their students growth (Buchholz & Riley, 2020).

Teachers sometimes struggle to communicate when families do not speak the same language. Not all families are able to come in person for traditional communication through conferences, but regular communication through digital portfolios can provide families with the educational information they need on their student (Gauvreau & Sandall, 2019). ePortfolios offer tools that are not available in hard copy. For example; parents having access to immediate new work, easy access for teacher to review immediately, and having photos, and videos of the educational experiences.

E-Portfolios can be used as a communication tool for teachers, and student parents in an informal way leading to more understood context with families (Buchholz & Riley, 2020). Verbal communication between teachers, and parents can be challenging, but texting, sending photos, and videos can aid in the communication directly with parents who do not speak English or are limited in English (Gauvreau & Sandall, 2019). E-portfolios give parents access anytime, and anywhere to their students' activities, and parents can communication to teachers and send photos from home which allows for students to share about their home life with teachers, and their classmates (Gauvreau & Sandall, 2019). When parents have information on their students activities help with more

meaningful conversations. Many parents are not able to attend the daytime events within their child's education, and this app is now one way all families can have access to their child's experiences learning (Buchholz & Riley, 2020). Having e-portfolios parents have found that when conversating with their students on their day the students tended to give more information when the photos on the ePortfolios were used, and the parents really made the conversations more enjoyable for them and their child (Gauvreau & Sandall, 2019).

Summary and Conclusions

Early childhood teachers often have concerns that the students spend too much time on devices, however there are many benefits to technology implementation in educational experiences. Teachers knowledge, and capabilities in technology integration are the keys to their successful implementation in the classroom. Teachers need to be prepared, and should have a solid understanding of the devices prior to implementation. Technology in education is no longer an option but a necessity. ePortfolios have a variety of uses within Early childhood education classrooms. The pandemic of 2020 and 2021 changed digital technology integration in early childhood education. Parent communication, sharing progress, and achievement with parents are two tools that ePortfolios offer to parents access on ePortfolios. There has been an increase in ePortfolios in early childhood which is adding in relationships among teachers and parents of students. Chapter 3 explains the methodology, participant selection, trustworthiness, and ethical procedures that were used within this study.

Chapter 3: Research Method

The purpose of this basic qualitative study was to explore how early education teachers perceive the training and support that they receive regarding the implementation of ePortfolios used as an assessment tool in their classrooms. The findings in the study could help address the gap noted between the literature and what really occurs in the local setting in training and support for teachers using ePortfolios in the early childhood classroom. The training and professional development that early childhood teachers receive can shift their use of technology integration into the classroom and can influence their beliefs (Chordia et al., 2019). Accurate assessment using ePortfolios gives students a sense of ownership by allowing students to select their own work for submission rather than relying on teacher selection and put their work on display or showcase their best efforts in explaining their understanding and knowledge, as well as acknowledging their potential (Renwick, 2017). Teachers have increased the use of technology in their classrooms; however, teachers report challenges in technology integration and need more guidance on effective and appropriate use (Chordia et al., 2019).

In this chapter, I explain the research methods and elements that were used to accomplish this study. The topics to be summarized in this section are the methodology, participant selection, instrumentation, data collection, trustworthiness, the research design, the researcher's role, and data analysis.

Research Design and Rationale

A basic qualitative approach was used in this study to gain an understanding of the training and support needed for teachers to implement ePortfolios in the classroom as

a tool for assessment and instruction; teachers' perceptions; and what, if any, trainings had been provided to them prior to their integration of ePortfolios. The research questions for this study were rooted in the conceptual framework and literature review:

RQ1: How do early childhood teachers perceive ePortfolio training as it relates to their use of ePortfolios as an assessment tool in the classroom?

RQ2: How do early childhood teachers perceive the ePortfolio support they receive after training and implementation of the ePortfolio as it is used as an assessment tool in the classroom?

Rationale for Research Design

A basic qualitative approach was used for this study. In this study, the problem was that in early childhood classrooms, there is a lack of consistency in the training and support that teachers receive as they implement ePortfolios as an assessment tool. Qualitative research is rooted in the methodology of seeking how people understand and interpret the world around them (Ravitch & Carl, 2016). According to Merriam and Tisdell (2016), basic qualitative studies are used to understand how people interpret experiences, construct their worlds, and develop meaning behind their experiences.

Other Designs Considered

In contrast to the focus in qualitative methodology on open-ended questions, quantitative studies are based on narrow questions and involve analyzing numbers. Qualitative studies are aimed toward individuals or groups close to the participants (Denzin & Lincoln, 1994). Qualitative research tests the laws of behaviors, a theory, or

phenomenon, and a qualitative study's purpose is to understand how the study participants experience the phenomenon (Merriam & Tisdell, 2016).

A case study was not appropriate because there was not a single unit of study, nor was a narrative-based design because I interviewed participants. In this study, I reviewed teachers' use of ePortfolios in their early childhood education and the training and support given to teachers during and prior to implementation.

I sought to explore teachers' perspectives through interviews of 10 to 15 early childhood educators within preschool through second grade who had been trained in the use of ePortfolios. A basic qualitative design was best for this study, as it aligned with the purpose statement, problem, and research questions of this study.

Role of the Researcher

For this study, I was the interviewer seeking to gather information about teacher perceptions. I was currently employed as a kindergarten teacher in the participating school district, but I conducted the study outside the school where I taught. The participants only included teachers whom I did not have working relationships with outside of this study. I was not responsible for distributing the technology within the district.

As the researcher, I had the important role of providing an understanding of the information, approach, and the methodology in this study. I received permission to contact participants.

Methodology

In this section, I provide specifics on the methodology of the research. This section addresses the selection logic, interview guide, recruitment, participation, and data collection and analysis plans. Also included within this section are the ethical considerations and issues of trustworthiness such as credibility, transferability, dependability, and confirmability.

A basic qualitative approach was used to investigate the training and support of teachers related to ePortfolio implementation as a tool for assessment within the early childhood classroom. Qualitative research is rooted in the methodology of seeking how people understand and interpret the world around them (Ravitch & Carl, 2016). According to Merriam and Tisdell (2016), basic qualitative studies are used to understand how people interpret experiences, construct their worlds, and develop meaning behind their experiences. This basic qualitative approach was used in this study to gain an understanding of the training and support needed for teachers' implementation of ePortfolios in the classroom as a tool for assessment and instruction, their perceptions, and what, if any, trainings had been provided to them prior to their integration of ePortfolios.

Participant Selection

To choose participants for this study, I used purposeful sampling. According to Merriam and Tisdell (2016), purposeful sampling is a method for identifying participants who have experience that aligns with the purpose and research questions being explored in a study. The participants were chosen from early childhood education teachers from

two different schools in the same school district in the southeastern United States. This selection strategy supported this study because it ensured that participants were aligned to the purpose and research questions being explored. Potential participants had experience using ePortfolios as an assessment tool within their classrooms. Finalizing the sampling size of a research study is based on the depth, the number of interviews being conducted, and the purpose of the study (Merriam & Tisdell, 2016). I contacted a sample of 45 teachers to participate in the study. I limited my contact to teachers within early childhood education in prekindergarten through second grade, as those grades are considered early childhood. Once the sampling of teachers was contacted, I gained consent of willing participants and then realized that I was having trouble gathering participants. I sent the email invitation again at a different time of day on a different day of the week. I had several participants email to ask me for the consent form and volunteer, but then they did not respond after I emailed the consent form. I was able to gather two more participants. I tried one final time to send the invitations in hopes of gathering a few more; I then was able to reach the final number of seven participants.

Instrumentation

Interviews were the main source of data in this qualitative research study. Interviews are the most regularly used technique for gathering information during qualitative research. Semistructured interviews using Zoom were conducted, allowing for conversational methods of collecting data. The questions within the interview were open ended, enabling the teachers to share their experiences without restrictions (Morse, 2015). This form of questioning gives the researcher more in-depth analysis (Morse, 2015). The

interview questions within this study were derived from the two research questions in this study.

RQ1: How do early childhood teachers perceive ePortfolio training as it relates to their use of ePortfolios as an assessment tool in the classroom?

RQ2: How do early childhood teachers perceive the ePortfolio support they receive after training and implementation of the ePortfolio as it is used as an assessment tool in the classroom?

The semistructured interview questions appear in Table 1.

Table 1

Interview Questions for K–5 Teachers

Interview questions	RQ1	RQ2
What ePortfolio software do you use within your classroom? (Ex. Seesaw, Google Classroom, etc.)	x	
How long have you used those ePortfolios in your classroom?		x
How have you been provided training and support on ePortfolio use as an assessment tool by your school or fellow colleagues?	x	
Explain how or what ePortfolio training you have taken as it relates to your use of ePortfolios as an assessment tool in the classroom.	x	
When do you use digital portfolios or ePortfolios for assessment of student knowledge?		x

Procedures for Recruitment, Participation, and Data Collection

I received district school board approval to begin my research and contact teachers/schools (Appendix B). The interviews were conducted outside of teacher

working hours based on teachers' availability and willingness to participate on a volunteer basis. The interviews were conducted virtually through a digital conferencing program such as Zoom or over the phone, based on participant preference and availability. I emailed teachers an invitation to participate (Appendix D) and then provided them with a letter of informed consent, explained the research process, and asked for their voluntary participation. The participants were able to sign the consent form digitally and email it directly back to me, or they were able to print the document, sign it, and return via email or the district courier service. Once participants returned their signed informed consent, they were sent instructions to join the Zoom link at the agreed-upon time. The interview was recorded in Zoom for audio only and then transcribed. The transcription and notes were shared with the participants via email, following the completion of all transcription to allow for member checks and any necessary changes. Participants were sent a follow-up email thanking them for their participation; the email included a digital $5 Amazon gift card.

The data source for this research was one round of semistructured interviews. Interviews took place virtually using Zoom. The interviews were expected to last about 25 minutes each and were recorded for audio; however, the average interview lasted 5 minutes. Interviews were transcribed using the Otter.ai program with Zoom and then checked for any changes through member checks with the participants.

Data Collection

I requested authorization from the superintendent of the school district and received permission from the school district office of academics and innovation

following the district procedure for permission. Upon Institutional Review Board (IRB) approval #12-23-21-0350600, I contacted teachers via email and informed potential participants about the study. Participants were informed that their participation would include a 20- to 25-minute virtual interview via Zoom followed by a member check to ensure that the information was being represented accurately. A letter of consent was also included in the invitation email. Once the participants returned their signed informed consent, they were sent instructions to join the Zoom link at the agreed-upon interview time. The participants were able to sign the consent form digitally and email it directly back to me. The interview was recorded in Zoom for audio only and then transcribed using the Otter.ai program. The transcription and notes were shared with the participants following their interview to allow for member checking and any necessary changes. Participants were sent a follow-up email thanking them for their participation and giving them their gift card.

Data Analysis Plan

For this qualitative study, I conducted thematic data analysis first using the data reduction method. I used a basic qualitative approach to my data analysis, which involved a thematic analysis of the data (Ravitch & Carl, 2016). Thematic analysis is used when analysis of data such as interviews to determine themes is used (Ravitch & Carl, 2016). According to Saldana (2016), in the first coding cycle, open-ended coding is used for qualitative studies utilizing interview transcripts. After pulling out key phrases in the first coding cycle, I used pattern coding in the second cycle. According to Saldana, in pattern coding, the data from the first cycle are grouped together into smaller categories or

concepts. I removed irrelevant statements and categorized or coded all of the commonalities, differences, and specific items within the interview transcripts. I compared the codes and found themes, which were my preliminary findings. I used hand coding in Dedoose for the coding process.

Alternative explanations for data should be used to increase credibility and trustworthiness of a study; any data that do not match what is expected by the researcher should be included within the analysis (Merriam & Tisdell, 2016). Discrepant case analysis and searching for data that went against the emerging data were used to ensure that a deep analysis and description of the data were completed. I did not have any discrepancy in the cases by including this data, or their common themes, to build trustworthiness of the study and provide the entire picture of the study.

Interviews were conducted and recorded using Zoom; I then transcribed the interviews into typed documents and stored all the data in the same location for easy analysis. My transcripts were not cleaned up; they were left verbatim. However, they were edited to remove irrelevant language such as “um”s. I used this method to maintain the fidelity of the interview. Following the transcribing of interviews, I precoded all data. I read, highlighted, took notes, and became familiar with the data before I began to code the data.

I first used open coding, which is the process of exploring and comparing data. This process allows a researcher to become more acquainted with the data (Saldana, 2009). During this process, I identified key words, phrases, and sentences. Following this, for the second phase of coding, I used axial coding by continuously going over the

information and redesigning themes to compose the information in a meaningful way, giving a clear understanding of the research.

Issues of Trustworthiness

Trustworthiness depends on the reliability and validity of qualitative research studies. Researchers use dependability, credibility, transferability, and confirmability to evaluate the quality of research (Kornbluh, 2015). Testing the trustworthiness of research brings out the credibility and the dependability of the results in research (King et al., 2018). Validity in qualitative research is when findings in a study are participants' true experiences; trustworthiness is validity in research (Ravitch & Carl, 2016).

During a research study, it is important to increase trustworthiness by being clear on the process of finding participants, the findings, and all personal and professional connections that the researcher has to the study. According to Merriam and Tisdell (2016), trustworthiness is acquired when ethical practices are used throughout the entire research process.

Credibility

Credibility comes from trustworthiness in results, and the credibility of a study is based on the truthfulness in the findings of the study. According to Merriam and Tisdell (2016), credibility of qualitative research can be improved by using specific strategies. The strategies used to strengthen this study were member checks and peer review. The confidence of the truthfulness and findings of a study are the credibility of the study and are essential in qualitative research. By making my findings plausible to my participants, I sought to make my qualitative research study credible. Researchers can use credibility

to evaluate truth value (Hammarberg et al., 2016). In this study, I allowed participants to review the interview transcripts and comment on any adjustments needed. I then made adjustments based on the participants' feedback, establishing credibility.

Credibility can be established through member checking (Burkholder et al., 2016). I had another EdD candidate that has no connections with the study to review my data and findings to reduce bias. I also used a second member check, the participants examined their data during the study. According to Merriam and Tisdell (2016), a credible qualitative study is given with adequate descriptions, and is recognized by people who shared the experiences.

Transferability

In qualitative research, transferability is when the findings from the study can be applied to other settings, and can be associated with readers experiences (Cope, 2014). The research in this study provided transferability for early childhood educators in districts where technology is provided to them and expected to be integrated within the classroom with similar demographics.

This research study provided a description of the participants, and their settings to help support future researchers in finding the transferability of my findings I provided information on the content so that the reader can make the results fit into their setting as well (Appendix C). In qualitative research transferability can be achieved when detailed descriptions of data and context are provided, this way researchers can compare the information to other contexts (Ravitch & Carl, 2016).

Dependability

Dependability in qualitative research shows that there is consistency through the evidence, data collections, analysis, and reporting in the study (Burkholder et al., 2016). In this research study I defended why I chose a basic qualitative research design, and why it is aligned to the purpose of this study. Dependability in a qualitative studies is shown when the collection of data makes sense and answers the research questions, having a strong research design is the key to achieving dependability in qualitative research (Ravitch & Carl, 2016). In my findings I have shown the alignment of my interview questions, and the research findings in this study. When I shared the findings of the study below, I was consistent and intentional about presenting the information found during the interviews.

Confirmability

The objectivity of a study and the corroborate of the results presented is the confirmability of a study (Cutcliffe & McKenna, 2004). Confirmation in qualitative data is when the researcher has explored ways to remove biases and prejudices into the interpretations of data through researcher reflexivity (Ravitch & Carl, 2016). Audit trails are one of the key techniques in gaining confirmability in qualitative research (Cutcliffe & McKenna, 2004). I used a documentation journal during the process of data collection and coding, this journal also used during interviews for note taking. To have confirmability in the study I provided detailed descriptions of the process, and analysis of data collection. I used the coding process with all of the data gathered during the interview transcripts.

Ethical Procedures

Ethical procedures in a research study determine the trustworthiness of a study. One ethical procedure to be considered in this study was the relationship that participants have with the researcher. In this study the researcher served as the data collector and analyzer, and it is going to be important that the researcher follows procedure. For this study I followed ethical procedures by applying to the IRB at Walden University. I did not complete the study within my own work environment, choosing other schools that I do not have a working relationship with the participants. Prior to conducting research, I completed my school district request to conduct research permission form (Appendix C). My request was then received by a team at the district office, I conducted a phone call with the office of the academics and innovation in regard to the request, and then gained approval from the Chief Academic and Innovation Officer of the school district (appendix B), and finally I received IRB approval #12-23-21-0350600.

According to Ravitch and Carl (2016) ethical guidelines state that I must receive informed consent from all participants in the study, the consent included their signature in willingness to participate, but also outline the purpose of the study. In my consent I informed my participants that they will remain anonymous throughout the study. No names or identifying factors will be used, instead pseudonyms will be used. Informed consent gives the participants an outline of the purpose, and goal of the study while also requesting their consent and signature to participate (Ravitch & Carl, 2016).

Participation in this study was voluntary and all participants were able to withdraw from the study at any time if they want to. The informed consent email to the

participants told them that their identify would remain anonymous throughout the study, no names or identifying factors would be used, instead pseudonyms were be used. Informed consent gave my participants an outline of the purpose and goal of the study while also requesting their consent and signature to participate (Ravitch & Carl, 2016). If participants chose not to participate they were disrespected and no information on their choice not to participate was not be shared with anyone. Participants who choose to participate were ask to answer two demographic questions prior to interviewing. This information did not contribute to my results when comparing the results and the length of teaching experiences among the participants, educational experiences of the participants.

Another ethical concern being addressed during this study in various ways is confidentiality. According to Creswell (Creswell, 2008) confidentiality is of high importance in qualitive studies. The interviews were completed through Zoom audio recorded calls based on the participants availability. The Zooms calls were only be stored for only the length of time needed to have them transcribed, while they were being stored they were stored on a password protected google drive as well as password protected computer with only myself having access to both items. Once the transcripts were completed the Zoom interviews were deleted for privacy of the participants.

According to Ravitch (2016) in order to maintain positive relationships with participants discussing that pseudonyms were used but facts will not be changed or disclosed, explaining that this means there is no way that anyone will be able to identify individuals participating. In addition, when transcribing interviews instead of names I used pseudonyms. My information, and all data collected will remain in a confidential

place and secured in a location in which only myself can access it, and I will store it for at least five years after the study then I will destroy the data including interview recordings, consents' etc.

The final ethical procedure taken into consideration in this research study was incentives for my participants. When the study was completed the participants who choose to participate were given a five-dollar Amazon gift card digitally for their time, and willingness to participants. The consent forms my participants received specifically states their participation was voluntary, they were free to choose not to participate, without mention of the gift card on the consent form, the gift card inventive cannot be seen as a bribe for their participation

Summary

The sections reviewed in Chapter 3 are the research design, role of the researcher, methodology, and trustworthiness. This basic qualitative study explored how early education teachers perceive the training and support they receive regarding the implementation of ePortfolios used as an assessment tool in their classrooms. The research design for this study was a basic qualitative design. In the role of the researcher piece, I identified my role in the research study as the recruiter, conducting of all interviews, and data analyzer for the study. This chapter gave the methodology, where I outlined the process used to find my participants, and the interview guide that will be used during the semi structed interviews and procedures that will be used in my research. This study used semistructured interview questions and the TPACK framework to gather

the participants perspectives. I also outlined the ethical procedures for participants and data reporting.

Chapter 4 presents the results of this study. It includes the data collection procedures, the demographics, data analysis process, the evidence of trustworthiness and the results of the study.

Chapter 4: Reflections and Conclusions

The research problem was that in early childhood classrooms, there is a lack of consistency in training and support in the implementation of ePortfolios, which may lead to frustration, lack of implementation, and improper use of portfolios as an assessment tool. The investigation explored how early education teachers perceived the training and support that they received regarding the implementation of ePortfolios used as an assessment tool in their classrooms. Issues surrounding training and support for ePortfolio use in the elementary classroom include equity of access for teachers and a disconnect with ePortfolios and the curriculum (Brown et al., 2018). According to Nagle et al. (2019), teachers integrating ePortfolios have experienced issues with receiving little training and support in order to integrate this technology for assessment.

The purpose of this basic qualitative study was to explore how early education teachers perceive the training and support they receive regarding the implementation of ePortfolios used as an assessment tool in their classrooms. The findings in the study helped address the gap noted between the literature and what really occurs in the local setting in training and support for teachers using ePortfolios in the early childhood classroom. Accurate assessment using ePortfolios gives students as learners a sense of ownership by allowing the students to select their own work for submission rather than relying on teacher selection and put their work on display or showcase their best efforts in explaining their understanding and knowledge, and acknowledging their potential (Renwick, 2017).

The first research question for this study was developed to explore how early childhood teachers perceive ePortfolio training as it relates to their use of ePortfolios as an assessment tool in the classroom. Research Question 1 was the following: How do early childhood teachers perceive ePortfolio training as it relates to their use of ePortfolios as an assessment tool in the classroom? The second research question in this study addressed how early childhood teachers perceive the ePortfolio support they receive after training and implementation of the ePortfolio as it is used as an assessment tool in the classroom. Research Question 2 was as follows: How do early childhood teachers perceive the ePortfolio support they receive after training and implementation of the ePortfolio as it is used as an assessment tool in the classroom?

Chapter 4 includes a brief description of data collection, general demographics, the data collection process, and the procedures for data analysis. I also include the results of the data collection organized by theme. After providing evidence of trustworthiness, I include a summary of the findings.

Setting

The study was conducted in the Southeast region of the United States. The region is relevant because all participants were located in the same geographic area, including suburban and rural locations, near one another. The region is significant because the district and schools included in this study are diverse, including suburban and rural locations all located in the same district area. The diversity of the region and school leads to a diverse population of teachers, experience levels, and backgrounds. The participants for this study volunteered from various schools within one school district in the same

county and state within the southeastern region. The schools were selected based on similar demographics, and participants were invited based on the grade levels taught.

The data were collected virtually through Zoom interviews outside of the school environment during the participants' personal time. I kept the participants' information confidential. The screen was not recorded; therefore, email addresses were not recorded, only voice, and all participants kept their cameras off. Only audio was recorded. I originally planned to interview 10 to 15 participants; however, after several weeks of attempting to gather participants, I moved the study forward with the seven completed interviews. The COVID-19 global pandemic impacted participants and forced changes in educators and workloads. Two teachers volunteered and then later declined to participate due to limited scheduling availability. In an effort to continue to gather my goal of 10 to 15 participants, I emailed the invitation to potential participants on a weekend day and on two different weekdays. Each email was sent at a different time of day, and day of the week (i.e., early morning, late evening, and midday on a weekend) in an attempt to ensure that the email was not overlooked. Table 2 includes demographic information for the participants, such as role and years of experience.

Demographics

The participants in this study included local district educators who were currently teaching and had taught within prekindergarten through grade 3. The teachers were limited to the approved locations within the same district. Each of the teachers who participated had at least 2 school years of experience, and each of teachers taught in a one-to-one device environment.

Pseudonyms were given to the participants to protect their real identities. Communication with the participants happened through email. Participation in this study was voluntary. Each participant responded with their consent via email prior to our Zoom interview. In total, I had 7 participants in the study. A total of 52 teachers were contacted, and 9 of those volunteered, with 2 then deciding to decline and 7 total completed the study interview. Table 2 represents the demographic data for the participants in the study.

Table 2

Participant Demographics

Participant	Role	0–8 years of experience	8 + years of experience
P1	First grade teacher	x	
P2	Third grade teacher, former second grade teacher		x
P3	First grade teacher		x
P4	Kindergarten teacher		x
P5	Kindergarten teacher		x
P6	First and second grade teacher	x	
P7	First grade teacher		x

Data Collection

The data collection method used during this study was semistructured virtual interviews using Zoom. Individual interviews were conducted with six classroom

teachers. The interviews varied in length, with approximately 5 minutes for each interview. Interviews were scheduled at times convenient for the participants.

Interviews were the only source of data for this study. The conceptual framework and the nature of this study guided the development of the interview protocol. In the interviews, I was focused on the research problem and consistently gathered information to help answer the research questions.

The virtual interviews were scheduled to take 20 minutes, but the average interview lasted 5 minutes. All interviews were recorded and saved in Google Drive on my password-protected computer and account. The audio was also recorded using Zoom and then transcribed using Otter.ai. Due to recording the interviews, I was able to focus on the interview and did not need to take notes during the process. I listened to each interview as it was transcribed to ensure accuracy.

Data Analysis

Analysis of Interview Data

The data analysis for this study was developed based on my basic qualitative research approach for this study. The steps used for data analysis included transcribing the data, reviewing the coded data to look for themes, and then finally interpreting the data, as Creswell (2008) explained. A combined inductive and deductive approach was used (Ravitch & Carl, 2016). The data analysis process began with having the seven interviews and then hand coding the data. Hand coding was used to get the most accurate perceptions of the participants in this study.

The first step in the preparation was transcribing the interviews. The audio files were transcribed by Otter.ai and were downloaded into text documents. Then the Zoom recordings were played while I read and reviewed the transcripts. I performed the necessary edits, making sure that the transcripts directly aligned with the audio recordings. I used Microsoft Word for this process. I set transcripts side by side and used highlighting and the comment tool to code and find similarities in the transcripts.

The text documents were then uploaded to Dedoose for a second round of coding. The next step was to deductive code; some of the predetermined code words used were *Google Classroom*, *Seesaw*, *training*, *assessment support*, and so forth. Next, I reviewed the transcripts by hand and grouped data based on the predetermined codes while looking for common words and phrases that were found in each interview. Dedoose was used to code the data; the comment feature was used to identify codes within each transcript.

While I was reviewing transcripts, some of the codes that I found were *professional development*, *mainly other colleagues or teachers*, *training, sessions*, *try it out ourselves*, and *formative assessment*. A total of 52 codes were identified during the first round of coding. Dedoose was used to organize the codes. They were then color coded. In the next cycle of analyzing the data, categories were created by overlapping or common phrases. Of the codes founded the remaining text not highlighted or coded was placed into one its own codes based on my understanding of the context of the code or placed in its own category if it did not fit. The next step was to develop themes in which patterns could be found (Saldana, n.d.). The themes were determined based on the categories and responded to the research questions. The research questions for this study

involved how the teachers perceived ePortfolio training as it related to their use of ePortfolios as an assessment tool and how the teachers perceived the ePortfolio support that they received after training and implementation of the ePortfolios.

Development of Themes

The codes within this study were developed based on the two research questions and the experiences of the participants. Coding allows a researcher to be emergent with data-driven essence (Saldana, n.d.). For this study, thematic analysis was used; the initial codes were derived from the data. Then axial codes were identified as categories for the initial codes. After this, the axial codes were analyzed for patterns or ideas related to the research questions, and themes were written as they emerged. Categories with the most codes emerged as themes first. According to Williams and Moser (2019), the finding of themes gives a researcher time to organize the data by category to tell a story.

The next phase was to finalize the themes and determine how each theme told a piece of the study as it related to the research questions. During this phase, I had to decide if the themes were connected to the data and how. This was done by creating concept maps to show the relationship among the codes and themes. Once the themes were found and the analysis and report were written, the themes and quotes were used to show the findings of the topic. To ensure credibility, member checking was done to ensure consistency and my interpretations (Nowell et al., 2017).

Four themes were developed based on the research questions and their relationship to the responses: training, experiences not training, support available, and perceptions. Verbatim quotes were used as descriptions and to add credibility to the

results of my study. The quotes are listed below under the results based on their relationship to the theme. In relation to Theme 1 (training), I asked the question, “Can you explain how or what training you have taken as it relates to your use of ePortfolios as an assessment tool in the classroom?” P6 responded,

> We haven't really taken it specifically as an assessment tool. Definitely. When we had the PD day they gave us some ideas of how to use it as an assessment. But it wasn't the entire PD session was not based on assessment. Okay, so it's been indirect.

Verbatim quotes such as the one above give a deeper understanding of each of my participants’ points of view.

Table 3

Codes and Themes Identified: Overview

RQ1: How do early childhood teachers perceive ePortfolio training as it relates to their use of ePortfolios as an assessment tool in the classroom?		
Codes	Categories	Theme
Professional development Training Workshops Session	Training provided Professional development sessions	Formal training provided or taken
Trying it out self Nothing official Colleague/fellow teachers On our own Practice Workshops Experimentation	Training Trying it out self Colleagues/fellow teachers On our own	Experiences or fellow colleague conversations, not formal training
RQ2: How do early childhood teachers perceive the ePortfolio support they receive after training and implementation of the ePortfolio as it is used as an assessment tool in the classroom?		
Resources Technology coach Workshops Indirect Session	Support Training resources	Support available as needed
Required Necessary Overwhelming Too late Backpedaling	Teacher opinions Feelings Perceptions of teachers	Perceptions on the training/support

Findings

The results for this qualitative study are based on a thematic analysis of the data collected from the interviews of educators. Participants were asked questions related to their use of ePortfolios and assessments to learn about their perceptions of the training and support they received. Teachers in this study were from one district that had one-to-one devices for their students and s ePortfolio subscriptions for their educators.

The following research questions guided this study and were asked of all participants during interviews.

RQ1: How do early childhood teachers perceive ePortfolio training as it relates to their use of ePortfolios as an assessment tool in the classroom?

RQ2: How do early childhood teachers perceive the ePortfolio support they receive after training and implementation of the ePortfolio as it is used as an assessment tool in the classroom?

Seven educators were interviewed using semistructured interviews. The interviews in this format allowed for data collection but also left availability for flexibility as needed (Ravitch & Carl, 2016). The responses were recorded audio only. The data were then transcribed using Otter.ai. The transcribed data were then manually reviewed based on the audio recordings, and changes were made by hand as needed. I then used Dedoose and analyzed the responses, looking for patterns of words or phrases. Then I looked at those patterns for codes. I then began to have themes emerge that were directly related to the research questions.

I asked interview questions that helped me get an understanding to this question in several ways. The interview began with how long they have been using ePortfolios to get an understanding of their experience levels. I then began asking questions in regard to the training they received.

Teachers explained whether their training was formal, direct, indirect or just learning as they go from google or from fellow teachers and speaking with colleagues. Most colleagues noted that they received or took training at district PD (professional development) days on some of the software's or were enrolled in course provided by the district. However, all teachers noted that they learned from colleagues, or fellow teachers as they used the ePortfolios with their classes. P7 responded, "Mainly by fellow colleagues. think we have had a few professional development sessions on Google Classroom, but mainly has been other teachers in my school."

Other participants described PD they have taken in the form of courses, or sessions that the district provided. For example, P1 responded,

> before school started, there were some professional development sessions that were offered. That were live sessions and then there were I guess more like help videos you know, you if have a specific problem technology have like a database of questions and answers that are like How To videos that you can refer to as needed. Schoology we are currently being trained and we are in a course that we are required to take. We have to watch videos, do reading and complete various steps along the way to prepare us before we have to use it.

P3 responded,

> We're doing training with Schoology now. It is a course we are required to take on our own time, or during our planning periods, originally, we were told we would do it together but that's not what is really happening. The other two pretty much is the only Class Dojo I learned on my own get that little pretty much Google Classroom. We did together. I kind of learned as I went from my Kindergarten group, and then Schoology we are being required to complete a class on it now. What, which will go through April or May.

The themes emerged after thematic analysis of the data as noted above. The four themes are listed below:

- Theme 1: Formal training provided or taken
- Theme 2: Experiences or fellow colleague conversations not formal training
- Theme 3: Support available as needed
- Theme 4: Perceptions on the training/support

Evidence of Trustworthiness

Trustworthiness is critical for the validity of a study. According to Ravitch and Carl (2016), the rigor of a study is based on the trustworthiness of the study, there are four indicators of trustworthiness; credibility, transferability, dependability, and confirmability.

Credibility

Participants were informed of their right to participate, and cease their participation at any time during the collection proves. I provided disclosures, and did not manipulate my participants in anyway. Disclosures were sent in email to each participate

to read, and agree to prior to the interview taking place. I accurately represented by participants responses by recording the audio from all interviews. Member checking was sent out via email to the participants giving them the opportunity to review their responses, and ensure they were accurately represented in the data.

Transferability

Transferability allows the reader to determine if my research design can be applied or transferred to other contexts or to a new site or similar problem. To ensure transferability in a study the researcher must use careful attention to details. I made sure that all pieces of my study were in alignment, and that the study was replicable. I used evaluation tools such as checklists to align all elements of this study. I also wrote a detailed description above of my study so that others can easily replicate it as desired. In chapter 3, I described the setting of the study, the participant demographics, so that this study might be able to be applied to other contexts.

Dependability

Dependability in qualitative research shows that there is consistence through the evidence, data collections, analysis, and reporting in the study (Burkholder et al., 2016). All data in this study was collected through virtual interviews using Zoom. I used Zoom to record the interviews while they were taking place. After the interview was complete the Zoom recording was then played again and Otter.ai was used to transcribe the audio recording. Dependability is the stability of the data which means that steps were taken to ensure the data was reliable (Ravitch & Carl, 2016). Following the transcription of the interviews, they were reviewed by hand, and read while the audio recording played to

ensure accuracy in the transcripts. The data was checked against each other to ensure consistency in the results. I did not change the implementation of the consistency strategies in chapter 3, and did not find as discrepant data in this study.

Confirmability

Confirmation in qualitative data is when the researcher has explored ways to remove biases, and prejudices into the interpretations of data through researcher reflexivity (Ravitch & Carl, 2016). It is not possible to eliminate bias entirely, I followed the methods, and procedures detailed in my proposal and practices of inquiry. I sent the participants the transcripts of their interview. Member checking was used to give an oversight of data collection, recording, and analysis. They were given the opportunity to suggest changes or clear up any misinterpretations. This increases credibility but also confirmability. By letting my participants make sure they are accurately captured during the interview and it helps decrease bias which is essential for trustworthiness (Creswell, 2008). I did not change any of the consistency that I listed in Chapter three.

Summary

I examined teachers' perceptions of ePortfolios and their training and support received. I found that all participants received both formal and informal training and support on ePortfolios as used as an assessment tool in their classroom. All teachers noted that most of their training was as they went from fellow colleagues or figuring it out as they worked with the software's but that they did attend sessions or were offered training as well. The data suggested that training was provided as a brief overview or was provided after implementation had begun. Several teachers noted that COVID-19

influenced their usage of ePortfolios in the classroom as an assessment tool. Teachers noted that they learned as they went and that resources were made available, or points of contact were available for questions as they needed.

In chapter 5 I provided a more detailed discussion, and interpretation of the data as well as implications for future. I also discussed my findings, and knowledge of the field and recommendations for future study.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this basic qualitative study was to explore how early childhood teachers perceive the training and support that they receive regarding the implementation of ePortfolios used as an assessment tool in their classrooms. Technology is a tool within education, and the training and support that teachers receive regarding technology integration was a topic researched in this study, because technology is continuing to expand in education, and there may be a lack of consistency in training and support in the implementation of ePortfolios.

This study had a basic qualitative design. A basic qualitative approach was used to gain an understanding of how early education teachers perceive the training and support that they receive regarding the implementation of ePortfolios used as an assessment tool in their classrooms. A qualitative methodology was appropriate to the problem, purpose, and research questions and was to address this problem and research questions of the study. Qualitative designs are best for a study when there is a body of information available and the researcher seeks to describe the understanding of a problem or topic (Percy et al., 2015). The findings from this study are significant to early childhood teachers because this could lead to more effective and widespread training and support, which may lead to more effective and useful implementation of ePortfolios.

The data suggested that training was provided as a brief overview or was provided after implementation had begun. Several teachers noted that COVID-19 influenced their usage of ePortfolios in the classroom as an assessment tool. Teachers noted that they

learned as they went and that resources were made available or points of contact were available for questions as they were needed.

Interpretation of the Findings

The results of this study contribute to the early childhood education field by sharing teachers' perspectives on the training and support that they receive regarding the implementation of ePortfolios used as an assessment tool in their classrooms. The findings of this study represent the responses of educators within one district in the southeastern United States to the interview questions related to the research questions driving this study. A basic qualitative approach to research was used in this study as it best aligned to the research design. The findings in this study explain teachers' perspectives on the use of ePortfolios in their classrooms.

Key Finding 1

In this study, I first gathered information on how long educators had been using ePortfolios in their classrooms and which software was being used. Digital documentation tools or platforms can be websites or applications that let educators and students keep records of their students' learning (White et al., 2021). All participants in this study reported that they had been using ePortfolios in their classrooms for at least 4 years. Educators noted several different software applications that they had been using, with one common software among all but one participant. Table 4 shows the findings of this information.

Table 4

Software Used

Participant	Seesaw	Google Classroom	Schoology	Class Dojo
P1		x	x	
P2		x		
P3		x	x	x
P4	x	x		
P5	x	x		x
P6	x			x
P7	x	x		

Key Finding 2

Next, I asked educators to explain the training and support that they had taken or been provided by their school or by their fellow colleagues. All participants stated that their district offered optional PD sessions at district staff development days that they could take. All participants mentioned that learning from colleagues as they used the software was where most of their support came from. Some of the educators mentioned that there were contacts available if they had challenges or questions and that they could reach out to after the training sessions.

A few of the educators interviewed mentioned that often the training came too late, after implementation and after they were required or expected to be using the software with their students, so they had to figure it out on their own or with colleagues.

One educator mentioned a technology coach being sent to a technology education convention and providing training within her school on early release days throughout the school year. This same educator noted that her instructional coach asked her to provide video recorded trainings for their educators to reference as needed for support. As discussed in chapter 2, the literature indicates that in order to support educators in their implementation of technology, the educators' needs must be identified (Hilaire & Gallagher, 2020).

Key Finding 3

The third piece of information collected pertained to when the educators use digital portfolios or ePortfolios for assessment of student knowledge. Most of the educators interviewed noted that they used ePortfolios once they were confident that their students had enough practice with the content and with the technology. One teacher noted that they had some students who were not as comfortable or fluent with the technology as others. Most of the educators noted that during the pandemic, their use of ePortfolios as an assessment tool increased with students who were learning virtually. One of the educators noted that they did not use ePortfolios for assessment of student knowledge. Some of the educators noted that they used this technology for assessment often, but this was not their only assessment tool; they used it as a check along the way for student understanding.

Limitations of the Study

This qualitative study had limitations. One of the limitations within this study was the design. This basic qualitative design was the most appropriate design for this study. I

limited my contact to teachers within early childhood education in prekindergarten through second grade, as that range is considered early childhood. In some settings, educators may find it difficult to apply the findings to their specific environment (e.g., middle school, high school, higher education, etc.). Despite these limitations, the findings of this study are transferable.

Another limitation of this study was the number of willing participants. The pandemic had impacted educators and education workloads. I did not achieve the original desired number of participants, which may have been limited due to the willingness of participants to take on another item during the global pandemic and the challenges that educators were still facing. I was limited to educators not within my own school setting; due to the potential for conflict, educators in my school setting were not eligible to participate in the study.

Recommendations

In this study, I explored the perceptions of educators and the training and support received in relation to their use of ePortfolios as an assessment tool. The participants of this study were from general education public school classrooms. The grade levels were limited to educators within early childhood or prekindergarten through grade 3. All participants were located in the southeastern region of the United States. Recommendations for further research include going beyond the boundaries of this study; for example, researchers might study students and elementary education teachers in Grades 4 through 6 or middle school educators.

First, this study did not include the experiences or perceptions of students within the classrooms of these educators. Further research might also focus on their perceptions. Conducting a similar study regarding this age range with the students could be very beneficial. Further analysis could reveal the extent, and perceptions of the students within these classrooms and being affected and using the technology. Doing this could also lead to a more generalized findings.

Another recommendation would be to conduct a similar study at a public school within the same southeastern school district with educators in Grades 4 through 8 and then again within high school (Grades 9 through 12). Such a study could provide a district-wide analysis on technology use within classrooms.

Implications

This study has implications for positive social change, in that it makes information about teachers' training needs and knowledge more widespread and available to administration and district officials prior to use and implementation of ePortfolios as an assessment tool within the classroom. The findings of this study focused on early childhood educators in general education public school classrooms in a southeastern school district only and their perceptions. These findings could help others increase the training and support provided to educators in their use of ePortfolios in the classroom. An increase in the training and support provided could lead to more effective use of these digital tools within classrooms, which may then enhance the learning experiences for students within classrooms. The changes in technology within education mean that educators need to learn and prepare on all the digital tools available. One of those digital

skills necessary for teachers to equip themselves with is the creation of digital portfolios through tools such as Seesaw, Class Dojo, Schoology, and Google Classroom.

Conclusion

This study was conducted to explore how early education teachers perceive the training and support that they receive regarding the implementation of ePortfolios used as an assessment tool in their classroom. The findings of this study represent the responses of educators within one district in the southeastern United States to the interview questions related to the research questions driving this study. A basic qualitative approach to research was used in this study as it best aligned to the research design. The findings in this study explain teacher perspectives on the use of ePortfolios in their classrooms. Most of the educators interviewed noted that they use ePortfolios once they are confident that their students have had enough practice with the content and with the technology. All participants stated that their district offered optional PD sessions at district staff development days that they could take. All participants mentioned that learning from colleagues as they used the software was where most of their support came from. Some of the educators mentioned that there were contacts available if they had challenges or questions and that they could reach out to after the training sessions. All participants in this study reported that they had been using ePortfolios in their classrooms for at least 4 years. Educators noted several different software that they were using, with one common software among all but one participant. Training that educators receive can positively impact their shift in use of technology in the classroom.

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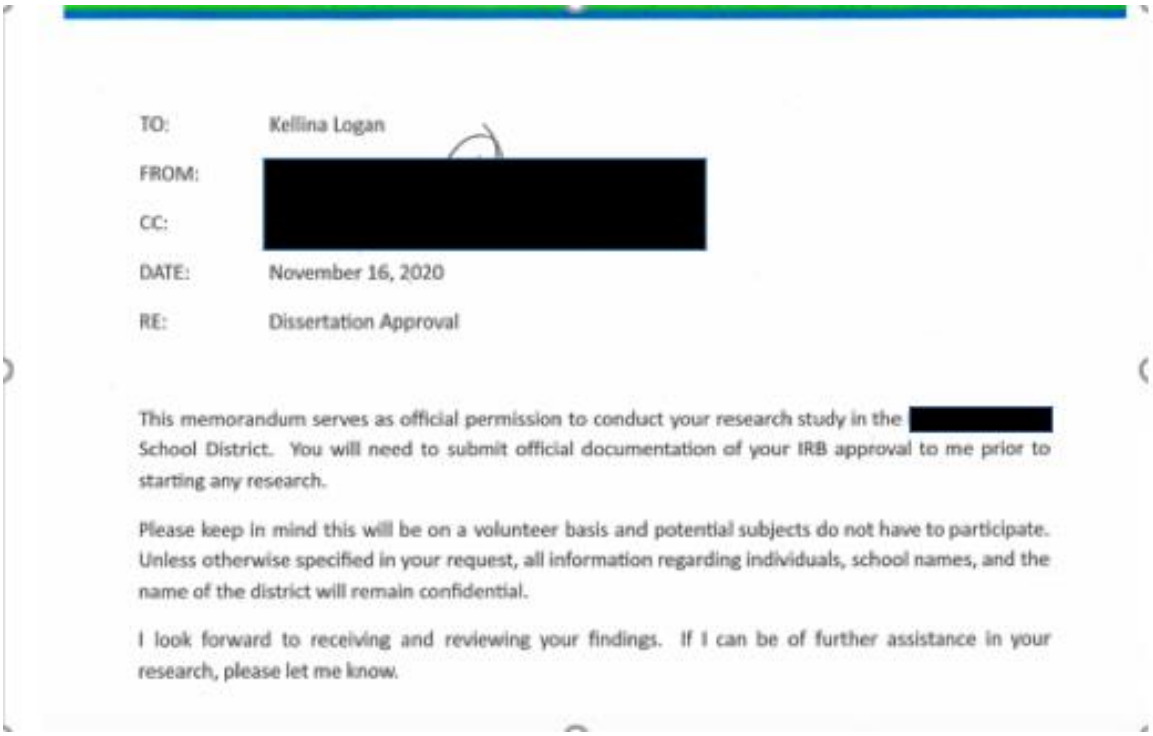
Appendix A: Research and Interview Questions Alignment

Research Question	Interview Question?
Questions about the specific teacher	What content area do you teach? How long have you been teaching that content area? Have you always taught that content?
	What ePortfolios software's do you use within your classroom? Ex. Seesaw, google classroom etc.
Technology Training	Have you been provided training and support on ePortfolios use within your classroom?
Assessment	Are you using digital portfolios or ePortfolios for assessment of student knowledge? Which digital portfolios are you using for assessment?
	How have you been provided training on assessments through digital portfolios?

Appendix B: Approval From District for Research



TO: Kellina Logan

FROM: [redacted]

CC:

DATE: November 16, 2020

RE: Dissertation Approval

This memorandum serves as official permission to conduct your research study in the [redacted] School District. You will need to submit official documentation of your IRB approval to me prior to starting any research.

Please keep in mind this will be on a volunteer basis and potential subjects do not have to participate. Unless otherwise specified in your request, all information regarding individuals, school names, and the name of the district will remain confidential.

I look forward to receiving and reviewing your findings. If I can be of further assistance in your research, please let me know.

Appendix C: Request to Conduct Research

Request to Conduct Research

1. I am Kellina Logan, kindergarten teacher at ABC Elementary. I am a current doctoral student with Walden University working to complete my dissertation. I am writing in request to conduct my research study. The purpose of this basic qualitative study is to explore how Early Childhood teachers perceive the training and support they receive regarding the implementation of ePortfolios used as an assessment tool in their classrooms. I would like to contact at least three DEF county schools, to collect a sample of 45 teachers to participate in the study. I limited my contact to teachers within early childhood education grades pre-kindergarten through second grade, and any further limitation may hinder the number of participants in the study. Interviews will the main source of information in this qualitative research. Interviews are the most regularly used technique for gathering information during qualitative research. The findings in the study could help address the gap noted between the literature and what really occurs in the local setting regarding training and support with ePortfolio use in the Early Childhood classroom.

2. The purpose of this basic qualitative study is to explore how early education teachers perceive the training and support they receive regarding the implementation of ePortfolios used as an assessment tool in their classrooms. The findings in the study could help address the gap noted between the literature and what really occurs in the local setting in training and support for teachers using ePortfolios in the Early Childhood classroom.

The following research questions will guide this basic qualitative study.

RQ 1: How do Early Childhood teachers perceive ePortfolio training as it relates to their use of ePortfolios as an assessment tool in the classroom?

RQ2**:** How do Early Childhood teachers perceive the ePortfolio support they receive after training and implementation of the ePortfolio as it is used as an assessment tool in the classroom?

3. The findings in the study could help address the gap noted between the literature and what really occurs in the local setting regarding training and support with ePortfolio use in the Early Childhood classroom. Understanding how Early Childhood teachers are trained and supported to use ePortfolios is important because according to Alanko (2018) barriers must first be overcome before successful implementation of new digital practices.

4. This study is of no cost to the researcher or ABC school district.

5. I would like to contact at least DEF Elementary, GHI Elementary, JKL Elementary, MNO Elementary, PQR Elementary, STU Elementary. I would like to contact at least the above Berkeley county schools, to collect a sample of at least 45 early childhood education within grades pre-kindergarten through second grade to participate in the study.

6. The interviews are the main source of information in this qualitative research. Interviews are the most regularly used technique for gathering information during qualitative research. Qualitative interviews give us the opportunity to analyze often look at but rarely see. The interviews will be conducted outside of teacher working hours based on their availability and willingness to participate on a volunteer basis. The

interviews will be conducted virtually, over the phone, or in person based on participate availability.

7. I will first transcribe the interviews and then annotate the transcripts to find significant statements identified. I then will use coding to recognize connections within the interviews.

8. and 12. . I am currently a doctoral candidate with Walden University and have their support to conduct the research of this study. I am not able to receive IRB approval until after I have received district approval. I have attached my board approved prospectus document in support of my research.

10.

I _____ voluntarily agree to participate in this research study.

I understand that even if I agree to participate now, I can withdraw at any time or refuse to answer any question without any consequences of any kind.

I understand that I can withdraw permission to use data from my interview within two weeks after the interview, in which case the material will be deleted.

I have had the purpose and nature of the study explained to me in writing and I have had the opportunity to ask questions about the study.

I understand that participation involves interviews conducted with the researcher either one on one or in a group format.

I understand that I will not benefit directly from participating in this research. I agree to my interview being audio-recorded for purpose of transcription.

I understand that all information I provide for this study will be treated confidentially.

I understand that in any report on the results of this research my identity will remain anonymous. This will be done by changing my name and disguising any details of my interview which may reveal my identity or the identity of people I speak about.

I understand that disguised extracts from my interview may be quoted in the researcher's dissertation publication.

I understand that if I inform the researcher that myself or someone else is at risk of harm they may have to report this to the relevant authorities - they will discuss this with me first but may be required to report with or without my permission.

I understand that under freedom of information legalization I am entitled to access the information I have provided at any time while it is in storage as specified above.

I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

_____Signature of participant _____Date

Signature of researcher _____ I believe the participant is giving informed consent to participate in this study

_____Signature of researcher _____ Date

11.

Research Question	Interview Question?
Questions about the specific teacher	What content area do you teach? How long have you been teaching that content area? Have you always taught that content?
	Do you have a paraprofessional in the classroom? What is their role/how are they used within your classroom?
Questions about class demographics	What is your average class size? Average class make up, learning abilities, backgrounds, demographics? How would you describe your class make up?
Questions on technology provided by district	What technology do you have within your classroom? Is the technology district provided or personal purchase? How long have you had student technology available within your classroom?

	What ePortfolios software's do you use within your classroom? Ex. Seesaw, google classroom etc.
Technology Training	Do you have q technology support person available within your school community? Do you utilize the technology support offered?
	Have you been provided training and support on ePortfolios use within your classroom? Are you required by your school or district to use ePortfolios or similar software's in your classroom?
	What support is offered to students for technology support with using ePortfolios?
Assessment	Are you using digital portfolios or ePortfolios for assessment of student knowledge? Which digital portfolios are you using for assessment?
	Have you been provided training on assessments through digital portfolios? Have you been provided ongoing support through the implementation of digital portfolios?

Appendix D: Invitation to Participate

Dear Educator,

I am a doctoral student with Walden University and I am a current *** school district teacher. I am conducting research as a part of my doctoral degree requirements. My study is titled, *Training and Support on ePortfolio Implementation in Early Childhood Education.* This email is an invitation to participate in the research study. The purpose of this study is to explore how Early Childhood teachers perceive the training and support they receive regarding the implementation of ePortfolios used as an assessment tool in their classrooms.

By agreeing to participate in this study you would give consent for myself to use your responses in my data analysis. Your participation in this study is voluntary and anonymous, there is not a penalty or consequence for choosing not to participate. I will not use any names or identifying characteristics, I will use pseudonyms. You will be asked to participate in a phone or Zoom interview that will take approximately fifteen to twenty minutes to complete.

If you have questions or would like more information on this study please respond to this email, to gather more information. If you choose to participate please simply reply to this email with, I consent.

Thank you for your time and consideration,

Kellina Logan