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Second- and Third-Grade Educators' Perspectives on Technology Integration and Implementation in Early Childhood Literacy Classrooms

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
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Walden University
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Abstract

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Ed.S., Walden University, 2016

MA, Walden University, 2012

BS, Alcorn State University, 1986

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Researchers have indicated that educators integrate technology based on their perspectives. Despite the increased expectation for educators to integrate technology into the daily academic environment, there has not been a significant improvement in outcomes in the critical area of literacy. In this basic qualitative study, the research questions were designed to explore second- and third-grade educators' perspectives on the challenges they face when integrating technology and how technology implementation influences literacy outcomes. A total of eight purposefully selected participants, educators who had taught second or third grade within the last 3 years with 2 to 3 years of experience teaching literacy and who are responsible for actively integrating technology, were interviewed. The conceptual framework for the study was grounded in social constructivism and Vygotsky's more knowledgeable other learning environment. Thematic coding was used to analyze collected data. Educators' perspectives revealed that external barriers hinder academic progress. Educator confidence plays a deciding role in integration and implementation. Using interview questions rooted within the constructs of the chosen framework, the insight gained from educators may promote enhanced student achievement outcomes through greater understanding based on educators' perspectives on technology integration, and implementation in the literacy classroom promoting positive social change. As positive influences are noted in the early years, the noted improvements may increase learning and earning potential for youth locally, nationally, and globally. The findings garnered from this study may influence populations beyond the foundational years.

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Dedication

I first give thanks and honor to God as I dedicate the completion of this process to His goodness towards me. I dedicate this dissertation to my mom, Louise Cameron, who listened tirelessly to me every step of the way. She always knew the right things to say, even when the right thing to say was just to remain silent. My sister Wanda Fleming, who has always been my mentor and role model. She can be proud that I took great notes from all that she said and did. I dedicate this work to my children, Tavares, Jarvis, and Kristen. I always tell them to never give up. I am happy to show them that the results of consistency and persistence make challenges worthwhile.

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First and foremost, I acknowledge and give thanks to God for the grace given to me to complete this doctoral journey. His guiding hand kept me along this path. I want to thank my sister and my mom for their incredible patience and unwavering support throughout this process. I am thankful for my committee chair, Dr. Donna Brackin who continually told me to “keep pushing” and provided a consistent source of guidance and support. I also want to thank my second committee member, Dr. Rebecca Curtis for the patience and thoroughness demonstrated in reviewing my work. Lastly, I’m grateful to my husband, Arnold Kenny, and the rest of my family for their support, help when called upon for technical assistance, and patience.

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Chapter 1: Introduction to the Study

Over the past several years, there has been an increased demand for technology integration in the literacy classroom (Griol et al., 2017; O'Neal et al., 2017). It is the expectation and responsibility of the classroom educator to integrate and facilitate technology across the curriculum in a manner that prepares students for future success (Varghese et al., 2019). The development of technological skills is a process that must start in the elementary years (O'Neal et al., 2017). Utilizing the vast array of digital tools available requires a wide range of traditional and digital literacy skills (Kim et al., 2017). Martin-Beltrán et al. (2017) reported that the use of digital text, for example, provides students with enhanced opportunities to engage in high-quality text talk, which is essential for linguistically diverse learners. The process of preparing and equipping students with the ability to effectively utilize technological skills considered beneficial across the curriculum begins in early childhood (O'Neal et al., 2017).

Because of vast technological applications available in the classroom requiring educators to implement resources into the teaching and learning environment, insight into educators' reasoning is needed regarding how technologies are utilized in the classroom (Taylor et al., 2020). Educators are the control center of the classroom. Accordingly, educators determine the integration, implementation, and usage of technology in the classroom (Vongkulluksn et al., 2018). It is helpful to understand educators' perspectives about the influence of technology as researchers have indicated that educators' perspectives influence classroom usage (Francom, 2020).

Locally, and from a global perspective, reading or literacy is a field of study that is considered a high-quality/high-stakes area. Likewise, technology skills are valuable on a worldwide spectrum to prepare youth for the future (O'Neal et al., 2017). Children who encounter literacy challenges in the early years are likely to struggle in subsequent years (Rasinski et al., 2017). The problem is, despite the increased expectation for educators to integrate technology into the daily academic environment (O'Neal et al., 2017), there has not been a significant improvement in outcomes in the critical areas of literacy (McFarland et al., 2018; Rasinski et al., 2017). Positive social change may be promoted through enhanced student achievement outcomes as we gain greater understanding through exploring educators' perspectives on technology integration and implementation in the literacy classroom. Literacy skills include accuracy, comprehension, and fluency in reading (Morris et al., 2017). Since achievement outcomes can be associated with literacy, understanding integration barriers and implementation concerns has the potential to enhance current and future generations (Rasinski et al., 2017).

In this study, I explored educators' perspectives on the challenges they face when integrating technology and how technology implementation influences literacy outcomes. I identified two research questions as essential to the study, which are introduced in this chapter. I also present the conceptual framework, which is grounded in the seminal work of Vygotsky's ideas of sociocultural advancement and constructivism's ideas. Additionally, I explain the nature of the study along with limitations, delimitations, and biases I acknowledged as the researcher of the study. Key terms or concepts that are specific to this study are included. I conclude the chapter with the significance of the

study on exploring educators' perspectives on the challenges they face when integrating technology and the influence of technology implementation on literacy outcomes.

Background

Alberta Education (2017) defined literacy as the ability, confidence, and willingness to engage with language to acquire, construct, and communicate all aspects of daily living. Twenty-first-century students are expected to engage in multidimensional literacy formats. Literacy development begins in the early years and the skills continue to emerge. McFarland et al. (2018) reported that literacy outcomes are stagnant or measurably indifferent. The acquisition of literacy skills needs to be established in the early years as a foundational anchor for literacy development and academic success later (Sutter et al., 2019; Vernon-Feagans et al., 2019). Researchers also indicated that literacy scores in the early years often serve as a predictor for future outcomes (Rasinski et al., 2017; Sutter et al., 2019), and technology has the potential to transform teaching and learning environments (Regan et al., 2019). Educators in the classroom are the primary distributors of educational technology usage in the early years.

It is believed that the integration of technology into the classroom will ultimately increase student academic outcomes (Cheng & Xie, 2018). The number of laptops and tablets in K–12 classrooms in the United States grew by 363% from approximately 3 million to 14 million devices between 2010 and 2017 (Branch et al., 2019). Literacy achievement continues to be an area of struggle for many students (Rasinski et al., 2017) despite the investments in early childhood software and technology. Rasinski et al. (2017) explained that although there has been a significant increase in technological demand and

availability in classrooms, educators' response to the implementation and integration has been met with reluctance and skepticism.

Literacy includes the skill subfields of reading, writing, and verbal language, and corresponding interactions (Cetin et al., 2018). Reading is an essential skill (Lin et al., (2019), yet reading achievement has remained salient in state- and district-wide evaluations of schools, educators, and children's assessments (McFarland et al., 2018). According to the International Society for Technology in Education (International Society for Technology in Education, 2018) Standard 2.4c, educators are required to use collaborative tools to expand students' authentic, real-world learning experiences. Schools have an array of technological tools. Competency in demand for literacy skills that align with 21st century standards and expectations continue to increase. Children who are not literate cannot succeed in school, society, or societal democratic practices (Ejikeme & Okpala, 2017) because of our growing digitized global world.

Literacy on a local, state, and national level remains stagnant across racial, ethnic, and socioeconomic lines (McFarland et al., 2018) despite scientific and public attempts to bring about positive change. There have been a variety of studies on the influence of technology in the classroom. Less has been discussed about educators' perspectives on its influence (Lawrence & Tar, 2018). Researchers also showed that educators' perspectives, skills, and attitudes often lack the competencies considered most effective for their required responsibilities (Carpenter et al., 2020) despite their role in the classroom. Wang and Xing (2018) indicated that self-efficacy among educators played a vital role in the integration process. Because educators influence the academic environment and influence

educational outcomes, Taimalu and Luik (2019) indicated that the insufficient attention given to educators' perspectives is problematic. Tondeur, Van Braak, et al. (2017) have indicated that the gap in practice is that educators integrate technology based on their personal perspectives. This study was needed to explore and gain insight into the challenges with technology integration and implementation from the perspectives of educators who work with students in the early grades.

Problem Statement

The problem is, despite the increased expectation for educators to integrate technology into the daily academic environment (O'Neal et al., 2017), there has not been a significant improvement in outcomes in the critical area of literacy (McFarland et al., 2018; Rasinski et al., 2017). Even though there have been increased investments in early childhood software and technology, many students in the United States continue to struggle in literacy at the local, state, and national levels (Rasinski et al., 2017). Carver (2016) and Vidal-Hall et al. (2020) both found that technology may not automatically have a positive influence on achievement outcomes. Admiraal et al. (2017) stated that the classroom educator determined the integration and implementation of technology into the literacy classroom. Educators' perspectives significantly influence their teaching practices and ultimately impact student learning achievement outcomes (Admiraal et al., 2017; Vidal-Hall et al., 2020). Regan et al. (2019) concurred that educators' perspectives regarding the implementation, integration, and use of technology in the classroom determined achievement outcomes based on when and how educators use technology in the classroom.

The divide between exploring educators' perspectives and active changes in the classroom based on their perspectives are troubling. According to research presented by Sutter et al. (2019) and Taylor et al. (2020), there are multiple barriers that influence perspectives. The gap in practice indicated that educators integrate technology based on their personal perspectives (Tondeur, Van Braak, et al., 2017). This gap strengthens the need to explore the problem that despite the increased expectation for educators to integrate technology into the daily academic environment (O'Neal et al., 2017), there has not been a significant increase in outcomes in the critical areas of literacy (McFarland et al., 2018; Rasinski et al., 2017). The stated gap and problem were indicators that this study was needed to enhance the literacy community from the early years based on the perspectives of educators who influence outcomes during the foundational years. Researchers have reported that there are barriers to integration and implementation to effective technology integration (Christensen & Knezek, 2017; Ottenbreit-Leftwich et al., 2018), and educators' perspectives have not been reviewed effectively enough as an essential resource to bring about change. The findings garnered from this study may influence populations beyond the foundational years.

National assessments reflected that approximately two thirds of U.S. fourth graders failed to meet reading proficiency standards (Taylor et al., 2020), increasing the scrutiny of literacy instruction. Researchers have connected third grade reading proficiency rates with later outcomes such as high school graduation rates and college enrollments, which amplifies the emphasis on literacy outcomes (Taylor et al., 2020). Educators have the task of meeting the demands to keep pace with ever-increasing

technologies and enhancements of literacy outcomes to meet 21st-century demands and student proficiency standards.

In a southeastern school district located in southern state, according to the governor's achievement report, no significant changes in literacy scores have been noted over the past several years. This aligned with the above-stated research findings. Many of today's second- and third-grade students are required to develop essential literacy skills and develop a technology knowledge base for classroom instruction and enhanced literacy outcomes. Hutchison et al. (2016) explained that students are required to learn to use traditional and digital tools simultaneously and effectively. Third-grade students also enter high-stakes testing grades.

Educators determine the value and usage of technology based on their belief system or personal perspectives. Vongkulluksn et al. (2018) also explained that educators' perspectives have the potential to influence their ability to overcome technological barriers, which influence achievement outcomes. Although technology use in the classroom has significantly increased, a gap exists between educators' knowledge and self-efficacy with these technologies and classroom implementation (Kim et al., 2017). Exploring educator perspectives regarding the integration and implementation of technology in the literacy classroom may influence both integration and achievement outcomes.

Purpose of the Study

The purpose of this basic qualitative study was to explore second- and third-grade educators' perspectives on the challenges they face when integrating technology and how

technology implementation influences literacy outcomes. Orzebas and Erdogan (2016) explained that the primary purpose for technology integration into the learning environment is to enhance educational achievement outcomes. Researchers have indicated that the use of technologies could enhance the social, emotional, physical, and cognitive developmental domains (Carver, 2016; Mourgela & Pacurar, 2018). Taimalu and Luik (2019) indicated that classroom integration and implementation efforts in the classroom have failed because educators' perspectives (beliefs), skills, and attitudes are not evaluated in the integration processes. More focus or emphasis is placed on students' concerns rather than on educators' perspectives.

Tondeur, Van Braak, et al. (2017) have indicated that educators integrate technology based on their personal perspectives. There is a difference between integrating technology and achievement outcomes. Francom (2020) reported that educators who have student-centered and constructivist beliefs are more likely to integrate technology into their classrooms. Personal experiences influence the constructs of educators' perspectives and how its meaning is assigned to those perspectives (Hsu, 2016; Merriam & Tisdell, 2015). These perspectives can have a dominant effect in the classroom in determining technology integration.

The essence of literacy continues to change as new technologies emerge (Singer & Alexander, 2017). Researchers have indicated that there are positive influences associated with mobile or digital technologies (Carver, 2016; Domingo & Gargante, 2016; Singer & Alexander, 2017). Likewise, there have been negative implications associated with the use of mobile/digital technologies (Singer & Alexander, 2017). With

the expansion of technology into the classroom at earlier ages, it is essential to address students in the foundational stages.

Liu et al. (2018) indicated that educators are responsible for or will determine the implementation and integration of technology into the curriculum based on their perspectives regarding its influence and usefulness. By exploring educators' perspectives, understanding will be increased in the areas that educators reveal as areas of need for assistance and the acknowledgment of strong points from the viewpoint of those in the field. Exploring the perspectives of those on the front lines (elementary school educators) may aid in integration and improve literacy outcomes. These findings may have an influence beyond the study population based on previously stated indications that the foundational or early years provide the essential groundwork as children move from grade to grade. In addition to findings previously reported, data statistics from the Annie E. Casey Foundation (2017) indicated that the likelihood of increased high-school dropout rates increased with each child who fails to read proficiently by the end of the third grade. Sutter et al. (2019) indicated there is a higher risk of high-school failure for children who demonstrate the inability to successfully develop age-appropriate literacy skills by the end of third grade. Likewise, earning potential and long-term success is reduced (Annie E. Casey Foundation, 2017). Based on findings by the Annie E. Casey Foundation, as well as Snow and Matthews (2016), the problem addressed in this study can have a positive long-term influence by exploring educators' perspectives of the challenges and influence of technology in the early years.

Research Questions

RQ1: What are second- and third-grade educators' perspectives of the challenges they face when integrating technology in their classrooms?

RQ2: What are second- and third-grade educators' perspectives on how technology implementation influences literacy outcomes?

Conceptual Framework

The conceptual framework for this qualitative study, which was based on the educational constructs of social constructivism, the theoretical ideals of peer collaboration, and the ideas associated with the "more knowledgeable other" (MKO) presented by Vygotsky (1987), is reviewed in greater detail in Chapter 2. Vygotsky's sociocultural theory indicates that there is a relationship between cognition, task, and environment regarding student achievement outcomes (De Lisi, 2002; Lourenço, 2012). This is important because educators' perspectives were explored. Learning is a social activity according to Vygotsky, requiring participant collaboration and consisting of what Vygotsky referred to as the inclusion of a "more knowledgeable other" (MKO; Cicconi, 2014, p. 58). Within the framework of this study, the MKO was equated to the classroom educator. Educators are expected to integrate technology into their literacy classrooms (Christ et al., 2019). In Vygotsky's theory, the MKO (e.g., a classroom educator) facilitates the learning environment, determines tasks, and is responsible for scaffolding instruction in a manner that enhances cognitive development. With the guidance of the MKO providing discourse and experiences within the zone of proximal development (ZPD), Vygotsky's position was that collaborative engagement enables independent

ability. Several researchers (Cheng & Xie, 2018; Makki et al., 2018) indicated that technology could have a positive influence in the construction of thought which is fundamental in literacy and technology usage. Integration and implementation are based on educators' perspectives (Khlaif, 2017; Tondeur, Van Braak, et al., 2017; Vongkulluksn et al., 2018). For example, based on Martin-Beltrán et al.'s (2017) findings, digital text has the potential to provide essential high-quality text-talk for diverse learners; however, the educator is the essential facilitator needed in the process.

I chose the constructivist theory for this study because it identified learning as a social process and called for the construction of thought in the learning environment (Vygotsky, 1978). The constructivist approach uses collaborative technology-integrated teaching in the teaching and learning process. Educators with constructivist beliefs often use technology to actively develop and support higher order thinking skills and engage in student-centered activities (Tondeur, Van Braak, et al., 2017). In contrast, educators with more teacher-centered beliefs do not engage as much with technology in the classroom. The research questions for this study were designed to explore second- and third-grade educators' perspectives on the challenges they face when integrating technology and how technology implementation influences literacy outcomes. In-depth questions were explored to understand technology usage during the interview process.

Vygotsky's theory indicated that an MKO plays an essential role in the learning process. Cicconi (2014) stated that technology adds an additional MKO by providing students with the potential to drive their own instruction with educator directives. According to the constructivists and sociocultural ideas that the study is grounded in,

learning is a social process (Vygotsky, 1978). I provide more extensive detail on the MKO (Vygotsky, 1978) and constructivist ideas in Chapter 2. I used interviews as my primary data source to explore educators' perspectives to gain a greater understanding of how educators integrate technology into the learning process. Interview questions explored how educators perceive the integration of technology and how their own perspectives and experiences influence integration. The interview process supported the conceptual framework for exploring RQ1 and RQ2.

Nature of the Study

The nature of this study was a basic qualitative study design. The study aimed to explore educators' perspectives on the challenges they face when integrating technology and how technology implementation influences literacy outcomes. Qualitative research is grounded in the idea that knowledge is constructed in an ongoing or continuous process as researchers uncover the significance or essence of an activity, experience, or phenomenon through engagement (Merriam & Tisdell, 2015). Qualitative researchers want to understand how the participants interpret their experiences, construct their world, and assign meaning to those experiences (Merriam & Tisdell, 2015). These factors may be revealed in the interview process as educators share their perspectives of technology integration and implementation in the second- and third-grade literacy classroom. According to Yin (2014), qualitative researchers can amass understanding of the studied phenomenon by compiling descriptions of participant experiences through interviews. A qualitative research approach continued to develop through the investigative processes consisting of interviews and reflexivity journaling as a part of the data collection process

to assist in exploring educators' perspectives on the influence of technology integration and implementation in the second- and third-grade literacy classroom.

I invited educators by email to participate in the study in the original plan. I received 13 consents accepting my invitation, with eight participants following through with the interview process. I solicited participation from educators from both second and third grade. Those invited to participate were educators who had taught in these grade bands within the last 3 years with 2–3 years of experience teaching literacy and who were responsible for actively integrating technology. Malterud et al. (2016) stated that the number of participants in qualitative interview studies is best determined by saturation. According to Patton (2015), there are no rules for sample size in qualitative inquiry. As indicated by Patton, the amount of usable information obtained in each interview could increase or decrease the number of participants required to provide rich data. It was advised to use a larger number of participants when engaging in semistructured interviews if small amounts of information would be garnered from each question presented to the participant (Patton, 2015). Lincoln and Guba (1985) described saturation as the point where redundancy in data presentation is reached. Patton pointed out that there can be flaws in relying totally on redundancy. Flaws include having a sampling frame that is too narrow; a skewed analytical perspective; and researcher inability to go beyond the surface with participants. I chose to use interviews for personal connections with participants. According to Merriam and Tisdell (2015), saturation will be achieved when I recognize a pattern in responses to interview questions and observe identical behavioral patterns. A key indicator of saturation is the lack of new insights (Merriam &

Tisdell, 2015) from the research data. Participants had a range of experience to ensure that responses are received from a diverse community of perspectives.

Study participants consented to interviews in accordance with the Institutional Review Board (IRB) and Walden's ethical guidelines, as detailed in Chapter 3. Invited participants included current and previous second- and third-grade literacy educators. All interview participants had a minimum of 2 years of teaching experience. I implemented other qualitative approaches using interviews and a systematic coding system on information collected from educators to explore second- and third-grade educators' perspectives. Alphanumeric indicators or pseudonyms (P1, P2, P3, and so on), were assigned to each participant to assist in protecting their identities throughout the study.

Creswell and Creswell (2017) explained that coding by hand is both laborious and time-consuming and suggested the use of computer software to assist. Even with software, it was recommended that the researcher carefully review transcripts line by line and assign coded or text segments to recognize similarities and differences in participant responses (Creswell & Creswell, 2017). After I transcribed the data that I collected from interview data, I organized the descriptions garnered from educator responses into codes and imported responses into HyperResearch (https://www.researchware.com/products/hyperresearch.html) for coding analysis. My original plan included NVivo, but my software choice was adjusted to a more cost-effective resource. The codes generated became a part of an emerging process and as I continued to add information and review the data. These codes included keywords and phrases that eventually emerged into the identification of common themes. I also used

data collected from educators to support their perspectives and my research findings. Descriptive details on coding are outlined in Chapter 3. I used notes from interviews conducted with diverse research participants to strengthen the saturation of data and support research findings. I also used member checking. Creswell and Creswell described member checking as a process where the researcher presents parts of the polished or semipolished product with research components such as major findings and themes for participant review. I emailed a summary of my findings to participants as a part of the interview finalization process.

Definitions

I have provided the following definitions, which were common terms used in my research process.

Constructivist: Pedagogical practices that provide opportunities for the learner to engage in discussion, collaboration, inquiry, and reflection to support the development of more enhanced and reasoned knowledge (Prestridge & de Aldama, 2016).

Digital divide: Term used to describe the social inequality or gap between those with equitable access, usage, and empowerment to technology (Mouza & Barrett-Greenly, 2015).

Digital literacy: Includes reading, writing, information sharing, and multimodal meaning through digital technology (Ozturk & Ohi, 2018).

Digital natives: The generation of contemporary young children enveloped by digital technologies (Hsin et al., 2014).

Sociocultural: Perspective identified by Vygotsky indicating that learning is defined by interpersonal, institutional, and sociopolitical circumstances (Flewitt et al., 2015).

Technology implementation: The process by which individuals' responses and dispositions towards a phenomenon or situation is influenced (Palaiologou, 2016).

Technology integration: Using technology in the classroom and applying technology across the curriculum in a manner that effectively facilitates collaboration and cooperation among students (Heitink et al., 2016).

Assumptions

In this basic qualitative research study, I explored educator perspectives on the challenges they faced when integrating technology and how technology implementation influenced literacy outcomes. In this section, I outline the assumptions underlying my study. Simon and Goes (2013) explained that assumptions are an essential component of the study. Assumptions pertain to the belief in aspects of the phenomenon within the study population that the researcher has not yet proven. Through assumptions Creswell and Creswell (2017) explained deductive engagement through the inquiry process allows the qualitative researcher to build protections against biases, control for counterfactual explanations, and transfer and duplicate findings.

I assumed that students at the study sites received both mandated and educator chosen technology options on a consistent basis. Because the school district used technology to perform benchmark tests to assess second- and third-grade student performance, I assumed that preparing students using similar or related resources and

materials would be similar across classrooms. It was my assumption that educators were expected to implement effective strategies to prepare students to use the mandated technology appropriately. Saeki et al. (2018) explained that benchmark and other high-stakes tests may influence school climate. Further, it was noted that due to educational policies, student outcomes on these assessments influenced educator evaluations, school effectiveness, and measured student progress (Saeki et al., 2018). Also, grade-level software programs that correspond with the adopted textbooks were purchased through the district. Other programs, such as i-Ready and IXL, for example, were district purchases. I assumed if the district invested money into these programs to enhance reading outcomes, it was expected that educators employ these programs in their daily routines. Likewise, the district invested money in the purchase of laptops, chrome books, computers, and Mimeo Board and Mimeo pads; therefore, I assumed these forms of technology were integrated into the literacy lessons.

I also assumed that educators have their own developmentally appropriate technology integration strategies in addition to those mandated by the district that may provide the needed differentiation in the classroom. It is essential that the instructional tools selected enhance student technology and literacy skills and competencies. I assumed these developmentally appropriate technologies were integrated within the daily constructs of the academic environment, and educators were using them per district mandates.

I assumed the educators were diverse, having varied backgrounds, teaching experiences, and a technology knowledge base. Lastly, I assumed that educators'

responses would be honest during all interview sessions. Honesty was essential to credible research outcomes. Trustworthy and transferable findings are dependent on the reliability of information communicated from the participants. Educators entered the study voluntarily and had the option to exit at any point.

Scope and Delimitations

The scope of the study included educators' perspectives on the influence of technology integration and implementation in the literacy classroom. During the process of this research, I interviewed educators about how they integrate and implement technology into their instructional practices. It is believed by some (Khlaif, 2018; Regan et al., 2019) that technology can positively influence academic outcomes. On the other hand, critics pointed out several challenges or barriers (Christensen & Knezek, 2017; Ottenbreit-Leftwich et al., 2018) associated with its use.

Delimitations are characteristics that arise from limitations within the scope of the study and define the known boundaries that were considered in the developmental stages of the study planning (Simon & Goes, 2013). The parameters of the research study are further defined by the associated delimitations (Creswell & Creswell, 2017). The delimitations in this study include the Title I schools that I selected as research locations. I have also chosen a select group of participants (second- and third-grade educators). Also included are the research questions designed for the problem and purpose of this study.

This study was restricted to a suburban school district in the Southeast United States. Due to county economics, the district receives a grant that allows all students to

receive free lunch. Socioeconomics can influence academic outcomes. Musti-Rao et al. (2015) wrote that the National Center for Education's 2011 statistical report revealed that 51% of African American and 53% of Hispanic American students continued to read below grade level by the time they reached fourth grade. Transferring findings from this study to a more diverse population may not be applicable due to the student body of the proposed study site.

Transferring findings from this study to populations that are more socioeconomically viable may not be applicable due to the demographic associated with the study. The study was conducted in a suburban school district that has been identified as Title I, which indicates that the school receives supplemental funding via the federal government. Based on this classification, the findings may not be well suited for students in more diverse or economically advantaged school districts. Transferability must be established by the reader (Korstjens & Moser, 2018). My role as the researcher was to provide sufficient descriptive data to supply the reader with enough evidence to apply findings from the study elsewhere (Lincoln & Guba, 1985). Lastly, careful scheduling and time management in the conducting of interviews, analysis, coding, and required follow-up in the COVID era was a delimitation.

Limitations

Limitations are identified as potential weaknesses or problems within the study (Creswell, 2015). The first limitation I identified in this study was that there were a limited number of participants based in the study range (second and third grade). Considering the number of students and educators at the proposed research sites, the

findings may not be transferred to a larger, metropolitan, or urban school setting. Patton (2015) indicated that truly in-depth small sample studies have provided vital breakthroughs in our understanding of phenomena. Also, the study was conducted within a specified demographic. The proposed research sites were based in a Title I school district where the socioeconomic environment had the potential to influence the social and academic infrastructure. Despite the school district being one of the largest districts in the state, comprised of 38 elementary schools, it was designated as a Title I school district. Therefore, there may be limitations on transferring findings to a more economically advantaged demographic. Lastly, I found that a larger percentage of studies that have been conducted on the influence of technology have been focused in middle and high school students. I used an expert panel made up of elementary educators with a minimum of 10 years of experience in early childhood education to review my interview questions to establish sufficiency to the interview questions. The elementary years are foundational and critical to future outcomes (Sutter et al., 2019). This study was designed to explore second- and third-grade educators' perspectives on the challenges they face when integrating technology and how technology implementation influences literacy outcomes. I invited educators from each grade level. I received 13 emails from educators indicating "I consent." Eight educators scheduled interviews.

As the researcher, I had the responsibility to remain unbiased in the presentation of all findings. I am an educator in the district where the study took place. As I embarked on this project, I was not an educator in one of the grades included in the research. However, grade-level needs and assignments changed, and I was assigned to third grade

for the upcoming school year. I do not have a position of authority over any of the participants in the study. All participants in the study had the liberty to speak without the fear of negative consequences. As an educator within the district, I was also required to integrate technology into my instruction. I believed the hands-on awareness within my classroom would provide me with a greater understanding of potential technology integration barriers as well as opportunities for growth. I was very cognizant of my task as the researcher and unbiased reporter of transferable findings. I understood that it was essential that I implemented protocols to safeguard against any personal biases or beliefs that could influence the research outcomes. A variety of measures (e.g., audit trails, member checking, audiotaping, reflexivity journal, and expert reviewer) were utilized to promote creditable and reliable findings, and to ensure my personal biases or beliefs did not influence research outcomes. Lastly, interviews were conducted at three schools where I was not actively employed to avoid potential ethical conflicts and in alignment with the district's guidelines.

Significance

This study is important because it has the potential to create positive social change within the literacy community. According to the Annie E. Casey Foundation (2017), more than 50% of the kids in every state are not proficient readers by the time they enter fourth grade. Holder et al. (2017) shared findings that children who fail to read proficiently by the end of third grade are linked to higher dropout rates. Likewise, researchers found a correlation between low literacy skills, school dropout rates, and adult occupational outcomes overtime (Connor, 2017; Sutter et al., 2019). Dogan et al.

(2015) also reported a link between literacy proficiency in K-5 and student outcomes by Grade 8. Putman (2017) noted that 98% of elementary classrooms were equipped with at least one computer. Many classrooms have an abundance of additional technological resources. Nevertheless, Carver (2016) stated that literacy outcomes had not shown significant improvement.

Vidal-Hall et al. (2020) found that technology itself could not improve learning based on educator perspectives. Educators potentially shape the student's view and use of technology (Pittman & Gaines, 2015). Orzebas and Erdogan (2016) found that some educators believed the use of various technological devices in randomized environments, rather than well-planned classrooms with specified features, are not effective methods for improving achievement outcomes. Yamac and Ulusoy (2016) suggested providing children with opportunities from the earlier stages of childhood to be appropriately trained in new literacy, considering the significant influence of the internet on new literacy. This study explored educators' perspectives on the influence of technology integration and implementation in the second- and third-grade literacy classroom based on interviews with educators. Positive social change may be promoted through enhanced student achievement outcomes as we gain greater understanding through exploring educators' perspectives. Rasinski et al. (2017) indicated that early literacy influences later outcomes. Oghenekohwo and Frank-Oputu (2017) explained literacy is the driving force that empowers sustainable economic development, social development, and environment protection. With a reported 800 million illiterate adults (Oghenekohwo & Frank-Oputu, 2017), social change can be promoted through enhanced student outcomes in fluency and

comprehension instruction based on educator recommendations regarding the integration on technology in the early (foundational) years through exploring educators' perspectives. As positive influences are noted in the early years, the noted improvements will potentially increase learning and earning potential for our youth locally, nationally, and globally.

Summary

Chapter 1 is an introduction to the central points of the study. In this chapter, I provided an overview of a qualitative study in which I explore educators' perspectives on the influence of technology integration and implementation in the second- and third-grade literacy classroom. The background for the study was presented, indicating that the integration of technology into the classroom will ultimately increase student academic outcomes (Cheng & Xie, 2018). The prevalence of technology in the classrooms has not significantly influenced technology usage (Jung et al., 2019). The foundational years are essential in the formation of literary and technology skills (Sutter et al., 2019; Vernon-Feagans et al., 2019). Educators in the classroom play a significant role.

The research problem, purpose, and questions address the influence of technology with an emphasis placed on educators' perspectives in addressing the issues of both literacy and technology in the literacy classroom. Through my exploration, I sought to answer the following questions:

- What are second- and third-grade educators' perspectives on the challenges they face when integrating technology in their classrooms?

- What are second- and third-grade educators' perspectives on how technology implementation influences literacy outcomes?

These are vital questions because both literacy and technology are important across the curriculum. Also, the foundational years have been noted as being essential in preparing students for successful outcomes, with digital text and mobile technology being introduced in the early years. Literacy scores have not significantly increased despite the increase in technology investments in academic environments (Rasinski et al., 2017).

In Chapter 1, I identified the research problem. The problem is that despite the increased expectation for educators to integrate technology into the daily academic environment (O'Neal et al., 2017), there has not been a significant improvement in outcomes in the critical area of literacy (McFarland et al., 2018; Rasinski et al., 2017). Despite the digital revolution and demand for increased technology integration and implementation in the second- and third-grade literacy classroom, educators determine the value and use of technology based on their belief system and ability to overcome technological barriers that influence outcomes (Vongkullulksn et al., 2018). With technology being at the forefront of education and educators serving as the control center, educator perspectives may hold valuable insight to enhancing student outcomes.

In Chapter 1, I also identified the conceptual framework in which the study grounded. The study was based on the educational constructs of social constructivism and the theoretical ideals of peer collaboration and educator scaffolding presented by Vygotsky. The nature of the study provided a brief synopsis of the research design and methodology. Definitions that are essential to the study were identified. Assumptions,

delimitations, limitations, and the significance of the study were also presented. In Chapter 2, I provide a greater analysis of the conceptual framework on which the study is grounded and discuss the research that supports the research problem.

Chapter 2: Literature Review

Literacy learning has become more technology-driven in today's classrooms (Vongkulluksn et al., 2018), with skills and instruction increasingly shifting from the printed page to digital technologies (Mangen, 2016). In this chapter, I reviewed relevant research to support the research problem, purpose, and questions. Tondeur, Van Braak, et al. (2017) indicated that the gap in practice is that educators integrate technology based on their personal perspectives. The problem I explored is, despite the increased expectation for educators to integrate technology into the daily academic environment (O'Neal et al., 2017), there has not been a significant improvement in outcomes in the critical areas of literacy (McFarland et al., 2018; Rasinski et al., 2017). The purpose of this qualitative study was to explore second- and third-grade educators' perspectives on the challenges they face when integrating technology and how implementing technology influences literacy outcomes.

Ottenbreit-Leftwich et al. (2018) noted barriers that educators face indicating a reluctance to embrace technology, yet educators determine technology usage in the classroom despite the reluctance. Alenezi (2017) stated that educators are the gatekeepers in the classroom, which makes their role in integrating technology critical. Alenezi (2017) further asserted that the success of technology integration is dependent upon its classroom application. Also, Kayalar (2016) found that it is essential that educators accept technology if its use in the classroom is going to be effective. This study explored educators' perspectives on the challenges they face when integrating technology and how technology implementation influences literacy outcomes.

In the first section of this chapter, I provide the literature search strategy. The selected articles in the literature review have been categorized into subsections. Some of the findings appropriately met the discussion of more than one category. Details on the conceptual framework for the study are then provided, including discussion of the theory pioneered by Vygotsky. Lastly, I present the literature review.

Literature Search Strategy

The purpose of the literature review was to identify and analyze research studies that explored the proposed research problem; gather insight based on previous research regarding the digital revolution, educators' roles, and perspectives; and provide the potential to contribute to social change in the literacy environment. I conducted a literature review using research databases through the Walden University Library and Google Scholar. The materials I examined included peer-reviewed journal articles, books, and dissertations. The search engines and databases included Academic Search Complete, Education Research Complete, Education Source, ERIC, Google Scholar, ProQuest Dissertations and Theses, and SAGE Journals.

The keywords and phrases I used to search for these resources included *digital learning, digital literacy, digital text, early literacy, elementary, educator perceptions, teacher perceptions, literacy, literacy instruction, literacy learning, professional development, technology, technology integration, reading,* and *reading comprehension.* Some of these terms were used in combination to locate the desired material. These terms and combinations were used because they were central to the study's core. All the terms

chosen were grounded in early childhood and central to the research questions, purpose, and problem.

Conceptual Framework

The conceptual framework for this qualitative study was structured around the ideas that children thrive better in environments that provide structure, opportunities for children to work both collaboratively and independently, and guidance that provides a scaffolded progression in the learning environment. The ideas are grounded in the educational constructs found in social constructivism. The social constructivist educational perspective holds that learning occurs in social contexts providing children with active and collaborative involvement in making meaning from text (Peterson, 2019), which promotes understanding and comprehension.

Vygotsky (1987) explained that the MKO is responsible for providing guided instruction, and through experiences within the child's ZPD (Vygotsky, 1978), the child will progress from collaborative success to independent success. Vygotsky (1978) defined the ZPD as the space between the analytical and problem-solving abilities a child possesses independently versus that ability with adult guidance or peer collaboration. It is suggested that collaborative learning promoted critical thinking and helped students retain information longer, engage in discussions, take responsibility for their learning, and become critical thinkers (Vygotsky, 1978).

According to Yang et al. (2018), cooperative learning is beneficial in advancing student achievement because it promotes group incentives and individualistic competitiveness within the learning environment. Active participation allows the group to

achieve more than would be achieved individually (Vygotsky, 1978). Within the constructivist framework, the teacher or educator serves as the MKO to facilitate and scaffold tasks appropriately to enhance the student's cognitive development. With MKO guidance in discourse and ZPD experiences (Vygotsky, 1978), it is believed that positive outcomes will occur.

Anderson et al. (2019) explained the value of constrained literacy skills in the foundational years. Constrained skills include phonetic awareness (i.e., the ability to recognize sounds) and decoding (i.e., the ability to map sounds or letter sequences called graphemes) to read unfamiliar words (Anderson et al., 2019; Snow & Matthews, 2016). Unconstrained skills (Snow & Matthews, 2016) include vocabulary, grammar, discourse skills, or the ability to effectively communicate with peers and society. Snow and Matthews (2016) explained that both constrained and unconstrained skills call for children to hear and recognize the letter and word sounds and meanings. These lessons involve an MKO; however, scaffolded lessons can be shared between peers or assigned via developmentally appropriate technology integrated assignments (Daniel et al., 2016). Moving from teacher-led to student-led or student-shared to independent assignments promotes student confidence (Sofkova Hashemi & Cederlund, 2017). Cicconi (2014) reported the American Psychological Association's alignment with sociocultural ideals stating that social interactions, communicative experiences with others, and interpersonal relationships impact learning.

Many researchers have argued that technology could have a positive influence (Bull et al., 2016; Cheng & Xie, 2018; Regan et al., 2019; Xie et al., 2019). Rybakova et

al. (2019) stated that the educator's digital resources implementation determined instructional effectiveness. Educators have the task of determining the best proximal developmental ranges for effective student collaboration and achievement outcomes (Kosnik et al., 2018; Tomlinson, 2015). McKnight et al. (2016) described individualized differentiation, enhanced student access, the ability to match students' interests to the assigned task, and peer collaboration as some of the ways that technology could enhance the academic environment.

Educators' perspectives are valuable, as Vongkulluksn et al. (2018) pointed out that the classroom educator determines the integration and implementation of technology into the literacy classroom according to their perspectives. Regan et al. (2019) indicated that educators are tasked with preparing students for jobs that have not yet been created. This task involves attending to the meta-level learning and cognitive skills as well as curriculum-based learning. It is further indicated that collaborative learning, as presented by Vygotsky's sociocultural theory, may benefit. Chou and He (2017) found some consensus that self-directed learning can be achieved through scaffolding provided by educator interaction (MKO) or technology support.

Interviews were conducted based on the sociocultural theory using a basic qualitative study. I asked interview questions to uncover educators' perspectives as defined in the Purpose of the Study section in Chapter 1. Interview questions were used to explore the research purpose and problem. The interview process also supported the conceptual framework in exploring RQ1 and RQ2. The objective was to gain insight from educators through the qualitative research process. When the researcher is unable to

observe the participant's behaviors and feelings or how the interpretations of the people and the world around them, interviewing is essential (Merriam & Tisdell, 2015).

Literature Review Related to Key Concepts and Variable

The articles selected for inclusion in this review were relevant to the conceptual framework and study methodology. The problem I addressed in this study is that despite the increased expectation for educators to integrate technology into the daily academic environment (O'Neal et al., 2017), there has not been a significant increase in outcomes in the critical area of literacy (McFarland et al., 2018; Rasinski et al., 2017). Despite the digital revolution and the demand for increased technology integration and implementation in the second- and third-grade literacy classroom, educators determine the value and usage of technology based on their perspectives and ability to overcome technological barriers that influence literacy outcomes (Vongkulluksn et al., 2018). Since literacy outcomes remain stagnant and technology continues to evolve and increase in the classroom (Francom, 2020; McFarland et al., 2018), this study is valuable. The purpose of the study was to explore educators' perspectives on the challenges second- and third-grade educators face when integrating technology and how technology implementation influences literacy outcomes.

Digital Versus Print

Literacy skills are critical because the ability to read is vital in the acquisition of knowledge (Linder et al., 2018). Reading practices and methods have evolved with technology (Lin et al., 2019). Literacy development within the academic environment can present challenges that require diverse methods and scaffolding by educators in the

classroom (Daniel et al., 2016). By scaffolding, educators provide diversity in the classroom, enabling students at all levels to participate in academic activities (Daniel et al., 2016). With technology advancements, the literacy classroom is transitioning from paper-based text to digital text, which affects all educational practices (Lin et al., 2019). Martin-Beltran et al. (2017) found that some educators find it beneficial to use digital text to support language and literacy development with linguistically diverse students. Literacy in the digital environment required digital readers to understand context, vocabulary, and norms that are not associated with traditional print (Hutchison et al., 2016). Both forms of reading and writing are essential for students' future success, indicating that adaptation in today's professional and societal life requires both skills (Pardede, 2019). Piper et al. (2016) further stated that there is a greater economic value to using mobile text. Although researchers' findings supported the assertion that the early years are critical for literacy skills development, findings reported that traditional or print reading skills alone are insufficient for online reading and comprehension (Salmeron et al., 2018).

Martin-Beltran et al. (2017) conducted a study comparing the use of print and digital reading with the use of a Big Buddy. The Big Buddy in the study equates to the constructivist and sociocultural ideas of the MKO by Vygotsky (1978). A brief summation of the findings on the comparative analysis of print and digital text reading with an MKO revealed the following: print text interactions allowed students to have more involved or engaging episodes with the MKO, resulting in deeper textual and vocabulary understanding; digital text provided more mediational guidance and

vocabulary review; the likelihood of rereading was greater for print text over digital to answer questions; students were more likely to talk with the MKO with reading print text rather than digital; and finally, students were engaged with the animations in digital text, but did not engage in dialogue with the MKO.

Researchers have documented that using digital texts in the literacy classroom has been shown to help engage reluctant readers and readers with diverse learning needs, increase students' motivation and self-efficacy in reading, and connect with students' out-of-multimodal, hybrid literacy practices (Martin-Baltran et al., 2017; Singer & Alexander, 2017). Digital text also offered readers additional information (Wang & Xing, 2018) within the text using features such as hyperlinks (Salmeron et al., 2018; Sullivan & Puntambekar, 2015), and notes to expand the educational experience. These features provide in-text support such as audible pronunciations, vocabulary, and definitions, allowing the reader to switch back and forth within the text, taking on the MKO's role in facilitating additional knowledge and providing the student with the information to construct additional knowledge. Singer and Alexander (2017) pointed out that hyperlinked texts could also increase cognitive demands.

Digital texts have functions that provide children with opportunities to explore independently while engaging with a text (Singer & Alexander, 2017). There are additional unique demands associated with digital text that involve strategic skills (Singer & Alexander, 2017). Reading digital text requires tracking horizontally back and forth and scrolling up and down (Harvey & Walker, 2018). These requirements reduce working memory availability (Harvey & Walker, 2018) because of the attention required

to perform these tasks to stay on track within the text. Singer and Alexander (2017) asserted that it is improbable to expect readers to engage in deep thought while continuing to switch from screen to screen in the reading process.

On average, twice as many books are read by people who own ereaders than those who read traditional print only, with such motivational benefits as speedier access and greater engagement (Singer & Alexander, 2017); Zickuhr et al., 2012). Reading digital text was more difficult than print, resulting in reduced recall and performance (Edmondson & Ward, 2017). Researchers have identified other factors as probable issues with digital text included visual fatigue, sequential versus continual reading, and digital multitasking (Singer & Alexander, 2017). On the other hand, Singer and Alexander found that comprehension and recall assessments yielded higher results from print text over digital text.

Bando et al. (2017) indicated that instructional delivery via print or digital requires effective educator support, which is the MKO's role. Researchers have shown that students need to hear, and use spoken language in many different contexts and engage in discussions where they use language with peers and educators for meaningful, communicative purposes (Martin-Baltran et al., 2017). Digital text may offer high-quality text-talk opportunities. These findings aligned with constructivists' beliefs that learning is a social activity (Vygotsky, 1978). Cooc and Kim (2017) found that empowerment may be produced in struggling readers when instructional models included collaborative reading partners within classroom organizational structure.

Freund et al. (2016) found that textual environment influenced comprehension outcomes. A study conducted to assess environmental associations with outcomes, plain text presentations yielded the highest text comprehension indicating that simpler textual environments are more conducive to comprehension gains (Freund et al., 2016). Studies indicated that comprehension is a precursor to learning and additional complex systems are also involved (Bigozzi et al., 2017; Freud et al., 2016). Memory-based processes, prior knowledge, and experience play a role in text comprehension (Sullivan & Puntambekar, 2015; Chang et al., 2019). Hutchison et al. (2016) and O'Toole and Kannass (2018) explained that users are required to engage in traditional and digital literacy skills while combining print and digital tools as the digital revolution advances.

Educator Roles and Technology Uses

The role of educators is to unlock and expand student knowledge (O'Neal et al., 2017). Technology is intended to enhance students' ability to operate successfully now, and in the future (O'Neal et al., 2017). Several challenges in the learning process may be addressed using educational technologies (Kormos, 2018) in the literacy classroom. The excitement of emergent technology, along with the technology standards and expectations, could serve as a catalyst for educators adopting technology in the classroom without adequate knowledge for effective educational usage (Ditzler et al., 2016). Jenson and Droumeva (2017) stated there is no specific curriculum regarding what 21st-century learning should comprise or how K–12 curricula should be informed by it. In either case, excitement or uncertainty, the digital demand continues to grow. Ejikeme and Okpala (2017) explained that literacy includes media, electronic text, and alphabetic and number

systems. Educators have the task of implementing technology into the curriculum in a manner that will effectively achieve expected roles and responsibilities (Carver, 2016; O'Neal et al., 2017).

One of the classroom educators' roles is to implement appropriate technology in the academic environment for students (Kosnik et al., 2018; O'Neal et al., 2017). Tondeur, Van Braak, et al. (2017) explained that the successful implementation and integration of technology into the classroom depend on educator decisions and actions. Educators determine technology usage in the classroom based on several factors (O'Neal et al., 2017). These factors included educators' perspectives regarding student achievement abilities, learning styles, mandated curriculum requirements, professional development, equipment availability, perceived ease of use, and usefulness (Francom, 2020). Educators' perspectives influence integration and implementation processes (Vongkulluksn et al., 2018).

Classroom educators are expected to integrate technology into daily lessons in a manner that will enhance student outcomes (Khlaif, 2018). Despite several researchers and educators (Francom, 2020; Yang et al., 2018) advocating the use of technology as an essential component of young children's learning, Hsin et al. (2014) noted that the influence of using technologies in the classroom remains controversial. Findings reported by Rybakova et al. (2019) indicated that technology integration's effectiveness is highly dependent upon the program being implemented. This finding aligned with Vidal-Hall et al. (2020) that indicated technology integration alone could not assure success, but rather well-prepared educators. McFarland et al. (2018) and Rasinski et al. (2017) informed that

an increase in technology access and usage has not significantly increased achievement outcomes. Jere-Folotiya et al. (2014) found that when there was focused and trained support for students, researchers reported improvements in outcomes. Jere-Folotiya et al. (2014) indicated that much of the technology usage was determined by student preference (games, music, and other non-pedagogical or curricular functions).

Some researchers (Nousiainen et al., 2018; Rybakova et al., 2019) agreed that success in the classroom is linked to an appropriate application via appropriately trained educators. Despite the academic objectives and expectations for technology usage in the classroom, O'Neal et al. (2017) found that educators often use technology in the classroom for tasks such as calculating grades, creating lesson plans and newsletters, communicating with parents, and researching new ideas. Hohlfeld et al. (2017) found that 96% of educators used technology for administrative purposes. DeCoito and Richardson (2018) found that 71% of the educators used technology for simulations and emails. In one technology integration survey study consisting of approximately 3000 K–12 participants, Russell et al. (2003) found educators commonly used technology to prepare for work-related activities and email. A study conducted with a group of educators in Florida yielded similar results (Hohlfeld et al., 2017).

Many educators use technology consistently in the classroom as a part of their instructional routine (Fenton, 2017). Various resources (such as smartboards, laptops, iPads, chrome books) are used in many classrooms regularly, yet literacy remains academically stagnant locally and nationally (Connor & Morrison, 2016; McFarland et al., 2018). Hutchison et al. (2016) and Hsu (2016) described the most common uses of

technology as low-level, or task limited to remedial skills. Other examples of digital technology used to provide academic and literacy engagement in the classroom include tablets, computers, chrome books, iPads, and iPods. Some educators rely heavily on the interactive whiteboard or smartboard (Bicak, 2019) and iMM Pads. Some researchers indicated that the classroom's educational practices remained the same with the implementation of these resources, yielding minimal impacts on learning (Ditzler et al., 2016).

McDermott and Gormley (2016) indicated that the influence of technology in young children's learning environments is valuable for enhancing students' communicative skills. Fenton (2017) explained that with the shifts in education gravitating to mobile learning, success depends on the educator's ability to maximize the use of technology devices. Support needs to be provided to schools and educators to fully understand how to effectively integrate digital technology into literacy instruction (Fenton, 2017; Hutchison et al., 2016). Alenezi (2017) found that support was needed that extended further than a technician being available for quick answers.

Ebooks are tools that are widely used in the elementary school setting (Lin et al., 2019; Swanson et al., 2020). Ebooks are one example of a resource believed by many to have positive influences in the elementary literacy classroom (Lin et al., 2019). Findings between motivation and comprehension using ereaders in the literacy classroom were presented, and educators' roles in the learning processes with and without ereaders were reviewed (Long & Szabo, 2016). Ereaders allowed students to read text on a handheld device (Long & Szabo, 2016) while selecting various text functions with the button's

touch. Foundational reading years are essential, and the Ereader is one technological resource many educators rely on for critical reading skills and motivation (Hamilton et al., 2016; Lin et al., 2019). If motivation to read declines during these years due to comprehension, phonics, vocabulary, or any self-beliefs about the insufficiency to read well, it can have a long-lasting effect (Ozturk & Ohi, 2018) Once a student reaches fourth grade, this negative view will be their self-view through high school (Vygotsky & Luria, 1993).

Often, the success of technological devices is dependent on software choices. The software used in the proposed district includes Accelerated Reader (AR), STAR, IXL, i-Ready, and several programs associated with Google and the Google Classroom (F. Givens, Personal Communications, August 10, 2020). Many educators believed that the AR program effectively motivates student reading (Smith et al., 2017). It was also noted by Smith et al. (2017) that many educators view it as an accountability measure for recall comprehension. Based on Smith et al.'s. (2017) findings, many educators use AR in the classroom to measure and monitor students' independent reading. IXL is structured to offer consistent progression and increase in difficulty as students reach the challenge mode in each activity (Learning, 2016). Instant detailed feedback is provided as students work independently to improve comprehension of challenging concepts (Learning, 2016). i-Ready provides adaptive skills and comprehension lessons in mathematics and reading (Curriculum Associates, n.d.).

Rila et al. (2019) found that providing students with opportunities to respond (OTR) increased academic engagement, which is a gateway to improved performance

outcomes. OTR can be implemented in traditional formats and via technology integration (Rila et al., 2019). Gage et al. (2018) reported that OTR is one evidence-based practice that had a direct impact on probable student success. According to Gage et al. (2018), active engagement is a predictor of student success. Additional findings aligned with constructivist ideas that indicated when educators provided opportunities for interactive and collaborative communications among students (McKnight et al., 2016), positive outcomes were generated. Hall (2019) conducted a study with a digital reading engagement application and found that participants reported excitement, textual connectiveness, and reading enjoyment.

Despite findings indicating that there has not been a significant increase in literacy outcomes (McFarland et al., 2018), Musti-Rao et al. (2015) reported the successful use of digital resources delivering positive outcomes in several subjects, including reading and mathematics. It is noted in their findings that technology served as a vehicle for the delivery of instruction. Students need time and instruction related to task for the productive and effective use of technology (Brugar & Roberts, 2017). Piper et al. (2016) also indicated that evidence existed that children with more developed or stronger literacy skills often do better with mobile or digital literacy applications. The educator remained the essential element making sure pedagogically sound instructional practices were enforced (Brugar & Roberts, 2017).

Technology as a Learning Tool

Literacy outcomes remained stagnant (McFarland et al., 2018) at a time when technology is in high demand in the classroom (Vongkulluksn et al., 2018) and on a

competitive global market for future success. It is believed that the integration of technology into the classroom as a learning tool will ultimately increase student academic outcomes (Cheng & Xie, 2018; Khlaif, 2018) and enhance global competitiveness for our youth. Rasinski et al., 2017 indicated that acquiring literacy skills in the early years established a foundation for literacy development and academic success later. Literacy achievement remained an area of challenge for many students (Rasinski et al., 2017), despite early childhood software and technology investments.

Carver (2016) reported the student to computer ratio in 1983 to be approximately 168:1. After a 5.3 to 1 ratio being reported several years later (Institute of Educational Sciences, 2010), The National Center for Educational Statics reported that only 40% of interviewed educators utilized computers during instruction (Institute of Educational Sciences, 2010). Hutchison et al. (2016) indicated less frequent usage of technology implemented in the literacy classroom. Hutchison et al. (2016) stated that culturally and linguistically diverse students engage in digital activities that promote literacy in the home environment.

Hsu et al. (2017) and Hall (2019) revealed varying opinions about the influence of technology. The International Reading Association and the National Council of Teachers of English are examples of professional organizations that highly recommended integrating technology into teaching and learning to ensure students are prepared to meet the 21st-century demands (McDermott & Gormley, 2016). Hsin et al. (2014) supported the idea that the use of technologies enhanced critical developmental domains. In contrast, others argued that the use of technologies impeded critical developmental

domains (McDermott & Gormley, 2016). According to Cheng and Xie (2018), integrating technology into the classroom will ultimately increase student academic outcomes. It is believed that through technology integration, students' learning experiences will be enriched cross-curricular rather than in isolated skills lessons (Hsu, 2016).

Due to technological advancements, drastic changes in the conceptualization and teaching practices in literacy have been prompted (Yang et al., 2018). Due to literacy dynamics today, more than the construction of the meaning from printed text is required. Yang et al. (2018) described reading, writing, and learning with multimodal text as a requirement to be literate today. Graphic design, audio, video, gesture, and continuous interaction are multimodal elements (Yang et al., 2018) are all components of digital literacy. The complexities of literacy, in addition to the ability to decode and comprehend text in a variety of orthographic formats, but also to encode information and communicate ideas, are a necessity (Yang et al., 2018).

Swanson et al. (2020) identified the electronic book or ebook as one commonly used tool. The ebook was identified as particularly beneficial for children with reading challenges (Barnyak & McNelly (2016). O'Toole and Kannass (2018), indicated that younger children's learning was significantly enhanced by using print books rather than ebooks. O'Toole and Kannass explained that the cause of learning differentiation with text formats has not been isolated. Harvey and Walker (2018) indicated that tracking requirements and multitasking opportunities are believed to be significant positive contributing factors for younger children.

In addition to using ereaders, the implementation of iPads in many schools has been the response to the demand for technology integration (Frazier & Trekles, 2018; Liu et al., 2018). Oliemat et al., 2018) explained that using iPads in the literacy classroom promotes collaboration and has positive influences on differentiation. IPads provide students with both personal expression and collaboration opportunities as well as independent and personalized learning (Oliemat et al., 2018). Meeting students' needs and providing opportunities for students to engage in 21st-century technology in the process (Hutchison et al., 2012) is a responsibility of the classroom educator, and integrating iPads provided potentially useful opportunities for the literacy classroom. IPads increased students' potential for collaborative and asynchronous learning (Wang & Xing, 2018), which supports Vygotsky's view that children thrive through collaborative associations in the academic setting.

The implementation and integration of laptops have been adopted in many classrooms to incorporate technology into the literacy classroom. In one mix-method case study, Frazier and Trekles (2018) followed focus groups through the adoption, implementation, and follow-up process of the 1:1 iPad program. Researchers found struggles and success. The primary takeaways were educators' need for increased professional development, rushed administrative decision making, technical issues, and insufficient planning (Frazier & Trekles, 2018). On the other hand, Frazier and Trekles (2018) also reported successful differentiation and improvements as the program progressed. McKnight et al. (2016) reported from several findings that for technology to effectively make a positive influence on leadership or educators, frequent technology

usage and effective instructional models must be a part of the academic environment. Frazier and Trekles (2018) indicated that insufficient professional development hindered educators in providing students with the ability to take advantage of all that technology has to offer due to the "digital-use divide" (Herold & Doran, 2016).

Laptop programs have also been instituted as a method to incorporate technology and enhance student outcomes (Frazier & Trekles, 2018; Harper & Milman, 2016). A small increase after the second year of the 1:1 laptop implementation was noted in literacy achievement (Harper & Milman, 2016). The effect size of the study was limited, and the results aligned with current findings. Harper and Milman (2016) found that constructivist instructional practices enhanced the1:1 laptop program.

With the various mobile technology resources available, Mourgela and Pacurar (2018) and Hsin et al. (2014) reported that greater technology levels contributed to negative socialization. Proponents of technology in the classroom contended that usage enhanced students' skills with information and communicative technologies (McDermott & Gormley, 2016). Computers and laptops may help an educator provide students with individualized instructional support (Bando et al., 2017) both inside and outside the classroom. Mourgela and Pacurar (2018) found that computer usage one or two hours per day about two to three days per week can positively influence academic, cognitive, and social outcomes. On the other hand, the opposite results can be evident if there is a displacement of computer usage, which can hinder the development of social skills (Mourgela & Pacurar, 2018).

Parental Perspectives

Constructivists' ideals support the belief that learning is a social process and calls for the construction of thought in the learning environment (Vygotsky, 1978). The development of emergent literacy skills is shaped via at-home literacy experiences (Neumann, 2016). Parental and family engagement is pivotal because research states children use technology much more at home than at school (Juhanak et al., 2019). The variation in skills and formal reading instruction children take to school are influenced by the home literacy environment (Hamilton et al., 2016; Juhanak et al., 2019). A social context for children's earliest encounters with the printed word occurs within the home-based literacy environment (Hamilton et al., 2016). Most often by parents (Hamilton et al., 2016), who take on the MKO role. These encounters provide the foundation for literacy development.

Vygotsky's sociocultural theory supports the belief that the interaction between parents or educators (i.e., MKOs) and children may influence the resulting outcome (O'Toole & Kannass, 2018). In a mixed-method, grounded research study, Barnyak and McNelly (2016) explained findings rooted in Vygotsky's sociocultural theory examining children's independent use of non-fiction reading on ebooks versus trade book reading with an MKO during a summer reading program. Results revealed enhancement in vocabulary identification for both groups. No significant improvement was noted in vocabulary or reading motivation for either group. The MKO group provided the most accurate retell story depictions, with ebooks readers following and independent readers being last.

Processing literacy skills via traditional print or digital formats require students to engage in the construction of thought to analyze and synthesize text (Singer & Alexander, 2017). Based on the constructionist view, children's attitudes and reading motivations develop in the sociocognitive processes that are experienced in the social construction of meaning (Ozturk & Ohi, 2018). The home environment is an essential contributor to the educational process (Ozturk & Ohi, 2018). The home environment influences technology usage and literacy development and outcomes because researchers indicated that children's attitudes towards reading are often grounded in their digital literacy activities (DLA) at home (Ozturk & Ohi, 2018).

Vittrup et al. (2016) found in one study almost that 98% of the children had educational technology toys, 4% under as young as 3 years old had their own cell phone, and 3% had a computer in their room at home. Despite these children being referred to as digital natives, Vittrup et al. (2016) explained that these children did not possess the mental capacity to appropriately understand and practice effectively with these varied technologies available. Many parents overestimated their children's technological knowledge and abilities (Vittrup et al., 2016). Elementary students were most familiar with cell phones (92%), digital cameras (86%), video game consoles (85%), handheld video games (64%), LeapPads (62%), and laptop computers (52%) as reported by Vittrup et al. (2016). Laptops were identified by many as a tool for playing games or for doing work or typing. Vittrup et al. (2016) pointed out benefits that have been found, such as that of video games that included enhanced spatial skills, visuals attentions, computer literacy, and fine motor skills.

Rideout and Katz (2016) presented findings from a national telephone survey consisting of 1,191 lower-income parents concerning digital connectivity. Ninety-one percent of children between the ages of 6-13 own a mobile device. Rideout and Katz (2016) found that many lower-income families were under-connected and had mobile-only Internet access. It is also believed that technology could be an effective learning tool to enhance reading and academic skills (Rideout & Katz, 2016). Eutsler (2018) found that many parents are reluctant to embrace technology at home due to concerns about inappropriate content online.

Technology Use by Students

Researchers concurred that educators' perspectives and teaching styles often influence technology implementation and integration (Kim et al., 2017; Vongkullusksn et al., 2018). It is the position of The National Association of Young Children and the Fred Rodgers Center for Early Learning and Children's Media (Fred Rodgers Center, 2012) that early childhood educators purposefully use technology and interactive media to support individual learning goals that are developmentally appropriate in the classroom. Increasing achievement outcomes is the ultimate objective for educators to implement and integrate technology in the classroom. Students often have a different primary objective for technology in the classroom.

As a result, Baron (2017) and Ditzler et al. (2016) stated that students spent a lot of time multitasking while engaged in learning activities. This multitasking use divided the capacity needed for learning purposes (Kirschner & van Merriënboer, 2013; Singer & Alexander, 2017). Baron (2017) further informed that 85% of U.S. students reported

multitasking using digital technologies compared to 26% when reading traditional print. Students differentiated goals and expectations between print and digital text (Hutchison et al., 2016). Researchers indicated that students perceived digital resources as a medium for research and print as a source for pleasure or leisure-based reading (Hutchison et al., 2016). Touch-screen tablets are an example of a digital resource that is widely used and continues to grow in popularity with the potential to be a powerful learning tool (Oliemat et al. (2018). Like the Ereader, many students view touch-screen tablets as an entertainment tool rather than an educational tool (Oliemat et al. (2018).

In a study conducted by McDermott and Gormley (2016), findings were presented that supported proponents and critics of technology usage in the technology classroom. According to observational findings, primary grade students utilized multimodal features and participated in learning through interactive songs, visuals, movements, and touch screens. These students were able to listen and engage in game-like learning tasks. Conversely, according to McDermott and Gormley's (2016) findings, an increase in isolated skills practice was observed in the online games as the grade level increased. McDermott and Gormley (2016) stated the participatory elements of technology in the early years were positive; however, as the student progressed, low-level skills and video games replaced the literacy elements that included understanding, analysis, and critical thinking.

Savelsbergh et al. (2016) explained that many studies reported positive components of students' comfort in the academic environment using computers and other mobile devices. Many of these positive outcomes were related to inquiry-based activities

(Savelsbergh et al., 2016). Cooperative environments are believed to enhance outcomes (Vygotsky, 1978). De Lisi (2002) found the MKO is essential, which aligns with Vygotsky's ideas (Vygotsky, 1978). The MKO provides an environment where both educators and students have mutual respect, which will have a higher level of comfort, exchange, understanding, and individual appreciation (Vygotsky & Luria, 1993). These elements elevate the child's self-view. A child's self-view is an integral part of the learning process, according to Vygotsky and Luria (1993).

Educators' perspectives about the validity of learning outcomes as the complexity of the associated tasks determined the implementation and integration of digital resources in the classroom (Prestridge, 2017). Nousiainen et al., (2018) indicated that the effectiveness of technology integration highly depends on the program that is implemented. Technology in the 21st-century is expanding, as evidenced by Apples' educational applications being accessed going from 20,000 to more than 1.5 million in schools around the world between 2008 and 2012 (Nelson et al., 2016). With the number of available applications and the amount of software increasing, educators face decisions that are perspective-based (Nelson et al., 2016), unless regulated by strict school district mandates.

Digital games, according to Prestridge and Aldama (2016), are chosen based on the educators' perspectives of student engagement and learning. With the abundance of technology in many academic environments, there is also an increasing number of educational games and applications available (Nelson et al., 2016). Many of these games and applications have not been officially evaluated to determine if the criteria have been

met for academic standards approval (Nelson et al., 2016). Furthermore, Nelson et al. (2016) reported that the studies that have been conducted had not proven conclusively that the use of educational games and apps significantly enhanced outcomes. On the other hand, De Freitas (2018), indicated that using educational games and apps in the classroom could potentially motivate and engage students. It has been found that students faced with academic challenges or who are disengaged may be motivated through the integration of educational games and apps (Nelson et al., 2016).

Common Integration Barriers and Educator Perspectives

Technology has become a common tool in many educational settings. Using technology demands detailed planning and deep consideration of social, educational, pedagogical, economic, political, cultural, and environmental issues (Hatzigianni, 2018). Digital natives often are more knowledgeable due to what educators perceive as a lack of sufficient professional development (Hatzigianni, 2018). According to Liu et al., (2018), professional development is key to assisting educators in maximizing educational advantages that technology can provide. Educators who had positive perspectives regarding technology integration in the classroom used technology more frequently (Ottenbreit-Leftwich et al., 2018; Vongkulluksn et al., 2018). Makki et al. (2018) explained that early childhood technology integration and implementation are important. Educators' perspectives on the role of technology are also important. Vongkullusksn et al. (2018) believed that educators' perspectives influence how technology is used in the classroom. Regan et al. (2019) reported that 10% of educators never used computers during instruction, and 19 % rarely used technology. Nikolopoulou and Gialamas (2015)

indicated that technology is meaningless if educators are unable or unwilling to use the resources. Liu et al. (2018) explained educator perspectives about the value of new technologies determined their willingness or ability to make meaningful use of these resources in the classroom for teaching and learning purposes. Educators often indicated they frequently felt unprepared or did not have the necessary experience to appropriately provide successful technology integrated lessons (Zipke, 2018).

Educators' perspectives regarding the value of technology are believed to influence how it is utilized in the classroom (Vongkullusksn et al., 2018). It is believed that introducing technology into the early childhood education experience is increasingly important (Nikolopoulou & Gialamas, 2015; Rasinski et al., 2017). Researchers' findings (Francom, 2020; Hsu et al., 2017; O'Neal et al., 2017; Tondeur, Van Braak, et al., 2017; Vongkullusksn et al., 2018) also identify several barriers the hinder technology processes. Zipke (2018) indicated that educators needed to feel comfortable with the resources they were implementing in the academic environment. Educator perceived barriers have the potential to create the exclusion of technology in early childhood settings due to various uncertainties or availabilities associated with usage (Francom, 2020).

Self-efficacy and learning strategies were contributing factors in the decision making to determine technology integration based on perceived usefulness and the anticipated ease of use (Wang & Xing, 2018). Educators who have less confidence with the use of technology or its influence in the classroom contributed these feelings to decreased self-efficacy about their personal ability to effectively use technology (Hsu et al., 2017) and difficulty determining how to integrate technology into classroom

instruction (Carver, 2016). Twenty-first-century students have been identified as “digital natives,” and in many cases, the educators responsible for providing instructions have been labeled digital immigrants (Kesharwani (2020). As a result, there is a digital divide between the student and the educator. Herold and Doran (2016) described the digital-use divide occurring due to educators not possessing the ability to fully take advantage of the technology options in the classrooms due to inadequate curriculum integration training, classroom management, and technology protocols for students. In second- and third-grade classrooms, the digital divide with the use of instructional resources may not be significant as Kesharwani stated there is insufficient evidence to indicate digital usage patterns between digital natives and digital immigrants is pervasive.

Ottenbreit-Leftwich et al. (2018) stated six primary educators’ perceived barrier-factors that negatively influenced technology integration in the early childhood classroom. Ottenbreit-Leftwich et al. listed lack of support, confidence, equipment, and class conditions, knowledge, and skills. In one study created to better understand educators’ attitudes and perspectives with technology in writing instruction, it was discovered that despite the educators’ perspectives of their ability to use technology, they had other concerns that hindered technology integration (Regan et al., 2019). Educators stated that integrating technology was too time-consuming, some voiced concerns regarding limited access, and some perceived access as a competition (Regan et al., 2019). Also, there are instances where educators have access to the Internet, but the number of computers to students may vary (Nikolopoulou & Gialamas, 2015).

Regan et al. (2019) reported findings that indicated that Internet access in public schools has continued to drastically increase over the years. O'Neal et al. (2017) indicated the two primary categories that technology integration falls into are internal and external barriers. Vongkullusksn et al. (2018) referred to barriers as first and second order. First-order barriers are those external factors that educators encounter that are perceived as lack of support (technical or administrative), insufficient time to prepare for technology-integrated instruction, and access to computers (O'Neal et al., 2017; Vongkullusksn et al., 2018). These perceived barriers can hinder the implementation, integration, or efficient use of technology. The availability of resources or lack of equipment or resources was also identified as a barrier (Carver, 2016; O'Neal et al., 2017).

According to O'Neal et al. (2017), educators' confidence directly and significantly affected the classroom's support and conditions. The use of technology in the classroom was often viewed as a diversion to occupy students' time and attention, or as a reward for good behavior (O'Neal et al., 2017). This belief often served as a barrier to integrating technology (O'Neal et al., 2017). Some educators felt deficient in the proficiency of their technology skills (Ottenbreit-Leftwich et al., 2018) compared to their students' skill level. This feeling can lead to a reluctance to integrate technology into the classroom. This lack of confidence corresponds with aspects of the digital divide and the need for on-going professional development. The classroom educator is expected to be the primary MKO (Vygotsky, 1978).

Multitasking options are presented to students when using technology (Bando et al., 2017; Ditzler et al., 2016). Educators have the challenge of maintaining academic focus on the assigned task. In addition to classroom management, educators must also surveil the academic environment to ensure students remain on task (Bando et al., 2017). This constant monitoring and potential redirection may create an integration barrier (Ditzler et al., 2016; Mei et al., 2018). Bando et al. (2017) indicated that multitasking hinders reading comprehension. Cho et al. (2015) indicated that low-level tasks might not be impacted when students indulge in multitasking activities. The study's findings also confirmed that tasks with higher cognitive load requirements is negatively affected when students are engaged in multitasking activities (Cho et al., 2015).

Educator Support

Educators' perspectives have been found to serve as a barrier to technology use for pedagogical purposes (Taimalu & Luik, 2019). Cheok et al. (2016) informed that it is crucial for educators to believe that the use of technology will support excellent teaching and expected learning outcomes. It has also been indicated that the degree of self-efficacy in technology student educators was a predictor of their planned usage of technology in the classroom (Taimalu & Luik, 2019; Tondeur, Pareja Roblin, et al., 2017), which is supported by Vygotsky's (1978) ideas indicating that what one can do with guidance and support will be reflected in independent practice. Self-efficacy plays an essential role in the integration process, appearing to be the most critical factor (Mei et al., 2018) in educators' minds. Taimalu and Luik (2019) explained that it represents confidence rather than competence. As Vygotsky's (1978) ideals express that learning is a social activity,

educators (MKOs) seek preparedness through apps, peers, family members, and other social methods.

Educators are expected to be the MKO in the classroom, indicating preparedness. Preparedness required the barrier of insufficient time that many researchers reported (Carver, 2016; Francom, 2020; Vongkulluksn et al., 2018) to be a significant integration obstacle to be addressed. Vidal-Hall et al. (2020) stated that educators need the firsthand opportunity to see and experience methods by which technology can be used to support child-led learning and develop their personal, professional roles in extending that learning. Liu et al. (2018) presented findings that educators constantly sought and welcomed learning opportunities. Educators gained insight from other educators, family members, students, and parents. Christensen and Knezek (2017) verified this sentiment, stating that supportive training and strategic pedagogical implementation are critical to building educators' confidence in their instructional environment as the MKO in the technology integrated classroom. Further, well-planned, continuous, professional development and support are essential to the success of effective integration and implementation (Fenton, 2017).

Summary and Conclusions

The research articles presented in the literature review were varied to include qualitative, quantitative, and mixed-method studies. Most of the studies I reviewed were with students. Studies included elementary and middle school students; however, the focus most often focused on functionality, ease of use, and student performance. Educators were used in those studies to collect data through the implementation of the

digital resource being studied or integrated in the study. Other studies were conducted with adults (educators) that also considered ease of use as well as perceived barriers. There were not many studies dedicated to the problem and purpose assigned to this study.

According to McDermott and Gormley (2016), the effectiveness of technology integration remains a topic of debate. According to Common Core State Standards, reading fluency is a foundational reading skill (Common Core State Standards Initiative, 2016), and failure to address deficits early can cause problems with comprehension (Rasinski et al., 2017). Literacy standards are clear about student expected outcomes; however, they are not as clear about technology integration in achieving these expectations (Jenson & Droumeva, 2017).

Technology should be used to strengthen both pedagogy and subject matter, with pedagogy being a primary component that cannot be separated from content (Zipke, 2018). Researchers also indicated that educators' perspectives play a vital role; however, the research literature is abundant on the barriers that influence technology integration (Carver, 2016; Francom, 2020; Vongkulluksn et al., 2018). Conversely, educators' views regarding their role, knowledge, or skill to ensure student success is not as abundantly discussed (O'Toole & Kannass, 2018). Knowledge (self-efficacy) and perspectives both influence technology integration (Taimalu & Luik, 2019).

In Chapter 2, I first reviewed the problem and purpose of this qualitative study. I identified search methods that assisted in my literature review. My literature review was comprised of books and peer-reviewed articles that discussed technology and integration in the classroom topics. I identified the study's conceptual framework and explained that

it is rooted in constructivism and social-cultural ideas. This chapter was divided into subsections to discuss various technology components to include integration challenges and implementation practices in literacy classrooms. The research questions served as the foundation for the chapter. In the chapter, I shared findings indicating the benefits associated with both print and digital text. It has been indicated that print text yields higher comprehension outcomes; whereas digital text yields greater motivation and engagement levels for elementary students (O'Toole & Kannass, 2018; Singer & Alexander, 2017). Both forms of text allow opportunities for scaffolding and differentiation (Bando et al., 2017).

In Chapter 2, in addition to exploring the ereader or ebook, I also identified other technological resources that have been integrated into the elementary classroom. Ditzler et al. (2016) explained that due to classroom practices remaining the same, it yields minimal impacts on academic outcomes. Barnyak and McNelly (2016) indicated that technology provides motivation and engagement, which are essential elements of the foundational reading years. Constructivist ideas also assert the motivation and engagement are essential (Kosnik et al., 2018). I also shared some parental perspectives of technology and perceived barriers and benefits based on research studies and educators' perspectives. Parents can be viewed as the MKO in the home environment. Educators serve as the MKO or facilitator in the classroom and control technology integration.

I also reviewed educator roles and technology uses since educators have the responsibility of integrating technology into the classroom. Hsu (2016) indicated that

despite the array of technology resources available, educators often engage in integrating low-level tasks or technology uses that include communicating with parents or involving grade calculating or non-academic student tasks. Researchers found that integration challenges such as educators' self-efficacy, perceived lack of professional development, and time (O'Neal et al., 2017; Vongkullusksn et al., 2018), and lack of resources or equipment (Carver, 2016). The challenges have been identified as first and second-order barriers (Vongkullusksn et al. (2018). Since Xie et al. (2019) stated that educators' perspectives are the best predictors of their classroom practice, this study helps address the gap between practice and technology integration.

This study amplified the need to engage educators in the process of advancing technology integration from a front-line perspective. This study focused on foundational years as researchers (Bull et al., 2016; Korucu-Kis & Ozmen, 2019; O'Neal et al., 2017) indicated they believed technology to be a critical component for our youth's future success. This study indicated that the disparity between educator efficacy and technology integration could be reduced by providing educator support and collaboration. This point was reviewed via participant interviews. In Chapter 3, I provide details on the research methodology and participant selection. I elaborate on my role as the researcher. My detailed plan for data collection and analysis for the study to minimize personal bias and provide creditable and reliable research outcomes are presented. Trustworthiness and ethical procedures are also be discussed.

Chapter 3: Research Method

The purpose of this qualitative study was to explore second- and third-grade educators' perspectives on the challenges they face when integrating technology and how technology implementation influences literacy outcomes. The specific focus of this study was the second- and third-grade educators because these are foundational grades. It has been indicated that students' academic progress in these grades remains stagnant (About the Standards, n.d.; McFarland et al., 2018). Educators are the gateway for technology integration and success in the literacy classroom (Alenezi, 2017). Researchers (Carver, 2016; Hsu, 2016; Tondeur, Van Braak, et al., 2017) expressed that educators' perspectives potentially influence the effectiveness of technology integration and literacy outcomes.

In this chapter, I identify the research design and rationale for the study by stating the primary phenomenon in which the study was grounded. I also elaborate on my role as the primary researcher to include personal, professional, and ethical relationships or concerns. I discuss how each of these components was managed in the study to maintain trustworthiness. Participant selection and data collection methods are included in this chapter to ensure transparency in all phases of the research process. I also discuss the data analysis plan and process to ensure the highest possible level of trustworthiness in the research and reporting process. Lastly, a review of the ethical procedures is presented.

Research Design and Rationale

Educators' perspectives were the key concept I explored using a basic qualitative study design through educator interviews. The research questions were as follows:

- What are second- and third-grade educators' perspectives on the challenges they face when integrating technology in their classrooms?
- What are second- and third-grade educators' perspectives on how technology implementation influences literacy outcomes?

These research questions were based on research findings indicating that educators' perspectives and technology are essential in today's classrooms (Zipke, 2018). Literacy outcomes have not significantly increased despite the significant increase in digital technology (Rasinski et al., 2017). Educators' perspectives influence the integration of technology in the classroom, which required a careful analysis of the responses to the research questions.

Quantitative and qualitative research methods are the tools of inquiry used to research and present trustworthy findings. Quantitative researchers test objectives, theories, or hypotheses by exploring various methods of examination to determine the correlation between variables in each problem or scenario (Creswell & Creswell, 2017). Quantitative researchers also explain phenomena by collecting and evaluating numerical data (McCusker & Gunaydin, 2015.) The quantitative research method did not apply to my study because I did not test a hypothesis and numerical data was not used to substantiate findings.

The qualitative study method offers a variety of approaches. The case study is one example that Yin (2014) described as an empirical inquiry that thoroughly investigates a contemporary phenomenon or "case" within its real-world context. Yin (2014) further stated that the boundaries between phenomenon and context may not be clear. In case

studies, multiple sources of evidence with triangulating data are gathered (Yin, 2014). Case studies rely on the triangulation of data to enhance the validity (Merriam & Tisdell, 2015). Due to COVID restrictions, participants were provided virtual interview options and opportunities to engage in the study that did not require face-to-face contact or handling of artifacts and materials. This study is a basic qualitative study. I used interviews based on educators' perspectives and did not use triangulation sources.

The phenomenological design was considered for the study because conscious experiences of a person's real-life experiences and social activities (Schram, 2003) is observed. Marshall and Rossman (2016) stated that exploration, descriptions, and analysis of meaning are components of the phenomenological approach. Yin (2014) stated that phenomenological studies are used to clarify meaning and individual lived experiences, and to gain knowledge of the phenomenon. This study was not explicitly focused on individual experiences. I reviewed, analyzed, and compared educators' perspectives as a part of my exploration of the research questions and problem. Based on these factors, the phenomenological design was not chosen.

I considered ethnography as the design because ethnographic research data sources and collection processes include interviews, documents, and artifacts (Lodico et al., 2010), which are most of the data sources included in my study. The purpose of this study was to understand educators' perspectives. Creswell and Creswell (2017) and Yin (2014) stated that the primary purpose of ethnography is to address an issue or concern relating to human society and culture and require detailed observational and interview skills. This was a small subgroup of educators and students to analyze in a manner that

may be transferable to a larger population. It was not restricted to a specific societal or cultural perspective but to an identified phenomenon in the academic community. I therefore determined that the ethnography design was not the most appropriate for my study.

I also considered the narrative research design because I explored educators' perspectives through the interview process. Narratives require collaboration between the researcher and participants as the researcher seeks to analyze, interpret, and write a story detailing the participants' personal experiences (Lodico et al., 2010). As with the phenomenological design, the narrative design limits the study to the experiences of the participants. This study is focused on the perspectives that may influence the experiences educators provide in the classroom.

After careful review of the various study methods and the aspects of each, I chose a basic qualitative study using educators' perspectives as the most appropriate for the stated research questions. I chose a basic qualitative study method to allow me to obtain in-depth information through face-to-face interaction with educators to learn firsthand accounts and experiences of their perspectives. Due to COVID restrictions, face-to-face interactions were conducted virtually. By using the basic qualitative research design, I engaged in a research approach designed to explore and understand the meaning attributed to a specified problem or phenomenon (Creswell & Creswell, 2017). This study explored second- and third-grade educators' perspectives on the challenges they face when integrating technology and how technology implementation influences literacy outcomes. The phenomenon I explored is that despite the digital revolution and the

demand for increased technology integration, and implementation in the literacy classroom, outcomes remain stagnant (Connor & Morrison, 2016; McFarland et al., 2018). Educators determined technology integration usage and value based on their perspectives.

Role of the Researcher

The researcher is both the primary instrument for data collection and data analysis (Merriam & Tisdell, 2015) in a qualitative study. The qualitative researcher plays an interpretive role in the data analysis and reports writing (Lodico et al., 2010) by accurately describing all the contextual components of the research findings. The qualitative researcher is concerned with ensuring that perspectives are accurately captured (Bogdan & Biklen, 2007). As the researcher in this study, my role was to collect and analyze data to gain insight that could further assist the academic community with the implementation and integration of technology in the literacy classroom. Yin (2014) described the researcher's role as challenging with responsibilities, including the designer of the study, collector of data, analyst, and presenter of information.

The research sites were within the school district where I am currently employed. I have been an educator in this district for 11 years. The research district has 38 elementary schools. The district required potential candidates to view a mandated webinar as a first step in the approval process to conduct research. The webinar was only presented at designated times during each school year. Also, permission to conduct research was only granted once potential candidates submitted confirmation of an approved proposal from the university. I completed the proposal and received approval

from Walden's IRB (Approval no. 05-19-21-0297147) before contacting potential participants. I also discussed my research goals with my principal to ensure that there would be no conflicts of interest or on-site violations as I proceeded. I arranged to meet with principals at the proposed research study sites after IRB approval and school site superintendents for the proposed study sites approvals have been received.

I have served as the English/Language Arts contact and fourth-grade chairperson. I currently serve as the social studies contact and the third-grade chairperson at the school where I am currently employed. As the chairperson, I serve as a liaison between the members of the third-grade team and the administration at the school. As the social studies contact, I attend professional monthly development seminars and redeliver information to the educators at my location. None of the educators at my school were asked to participate in the study. However, some of the educators who attended the district seminars that I have attended may have qualified to participate in the study.

Maxwell (2012) described bias as something brought from one's own background. He further stated that the influence needed to be eliminated. As the researcher, it was essential that I identified personal biases. Yin (2014) informed that the qualitative researcher often faced biases prior to conducting the study because they must have a thorough understanding of the topic beforehand. I recognized that I had preconceived ideas about the roles of technology and literacy in children's lives. As an educator, I had an interest in the findings of the study, and I was cognizant that my personal interest could lead to bias if I failed to follow specific research protocols. Research protocols or safety measures were installed to safeguard against personal biases

impeding the credibility and reliability of the study. Safety measures included a reflexivity journal that I used to record my personal reactions and bias before, during, and after each interview and when analyzing data. The journal was also used to take notes during interviews and document any noted nonverbal clues and participant reactions without hindering the interview's flow with personal responses or reactions. Another safety measure I used was an expert reviewer who had a minimum of 10 years of experience in elementary education, who holds a BA in Early Childhood, an MA in Foundational Education, and a Ph.D. in Curriculum and Instruction. The expert reviewer provided a review of the research based on the data presented to enhance the validity of my findings. The reviewer reviewed, analyzed, and certified that the study was well conducted, and the research was well reported (Marshall & Rossman, 2016). The data collection resources for the study also included following an interview protocol (see Appendix A) and ensured that participants had a clear understanding of the purpose of the study identified in the written consent. The use of member checking also helped ensure the avoidance of personal biases that could hinder trustworthy findings.

Methodology

I conducted a basic qualitative study to explore second- and third-grade educators' perspectives on the challenges they face when integrating technology and how technology implementation influences literacy outcomes. My primary data source was interviews conducted with educators actively responsible for integrating technology. I used purposeful sampling in the participant selection process. In the subsequent sections,

I also discuss instrumentation, data collection and analysis, research trustworthiness, and ethical procedures.

Participant Selection

My qualitative study focused on second- and third-grade educators' perspectives on the challenges they face when integrating technology and how technology implementation influences literacy outcomes. The specific focus in the interview stage was with second- and third-grade educators who had taught in these grade bands within the last 3 years with 2–3 years of experience teaching literacy and who were responsible for actively integrating technology. Second- and third-grade educators were chosen because they are instrumental in the foundational grades in preparing and influencing literacy outcomes. My doctorate will be in early childhood education, and this population fits within the parameters of the program. The sites for my research were Title I elementary schools in a suburban school district in the southeast. I chose second and third grade because the elementary grades are among the years that are considered foundational. Foundational and technological applications are being implemented more at this level.

Selecting participants for the study was an essential component of the research process. Creswell (2015) explained there are instances where unfamiliarity with the study or complexities that it involves may hinder the ability of the research to ideally select the study participants. In such instances, snowball sampling may be used (Creswell, 2015). I used the snowball method in recruiting participants due to COVID-related safety precautions and potential complexities in the recruitment process.

Random sampling provides equality in the selection process for each member within the selection population (Creswell & Creswell, 2017). However, to ensure that each potential participant met the requirements needed to sufficiently meet the needs of the study, I did not choose to use random sampling. The option of convenience sampling was also considered. Convenience sampling allows the researcher the select participants based on their convenience and availability (Creswell & Creswell, 2017).

I chose to use the purposeful sampling process to identify ideal participants. This method also helped ensure that participants were qualified to effectively respond to interview questions. According to Creswell (2015), this form of sampling is used to intentionally select individuals and sites to further discover or gain insight into the central phenomenon. Purposeful sampling assumes that the investigator wants to gain in-depth understanding and insight, as well as make new discoveries, which makes it necessary to select from a specifically qualified group (Merriam & Tisdell, 2015). This definition precisely described my intent based on the specific criteria that have been identified for the participants in this study. Purposeful sampling allowed me to select educators with the early-grades background in second and third grade that fits within the parameters of my study.

I verified each potential participant met the required criteria by asking them upon my initial contact with them. Eight educators participated in the study. The intended number of participants was 12. In qualitative studies, sampling sizes are usually too small for findings to be used for the purposes of transferring (Creswell, 1998; Lodico et al., 2010), but are sufficient for informing understanding. Lodico et al. (2010) suggested

seeking additional participants until saturation has been reached. It is important to have data to support findings and data saturation. Data saturation refers to the point in the data collection and analysis process where no additional information, codes, categories, or themes emerge, and replication is possible with the information obtained from the existing data (Fusch & Ness, 2015). According to Merriam and Tisdell (2015), the question of a sufficient number of interview subjects always arises and the best answer is data saturation, meaning that the researcher should interview until no new information is forthcoming. If the proposed number of participants failed to yield data saturation, I included additional participants to ensure credible findings by contacting educators that consented to participate at the onset of the study for possible inclusion. In the event that more than 12 potential participants consented to the study, my original plan included placing them on a waiting list that I could draw from if needed as the study progressed.

I contacted the principal at the proposed schools for permission to study after I obtained IRB and district approval. I reached out to colleagues and acquaintances to open the recruitment process afterwards by contacting email or telephone to introduce myself and the study. I used snowball sampling to recruit additional participants due to COVID-related restrictions. Potential participants were informed of the purposeful sampling criteria. I used participant consent forms to request and verify voluntary agreement to participate in my research study. I asked that all participants indicate their consent to participate via email indicating, “I consent.”

Instrumentation

Patton (2015) described the researcher as an effective data collection instrument. Merriam and Tisdell (2015) further stated that the primary instrument for data collection and analysis in qualitative research is the researcher. I served as the primary research and data collection instrument for this study. In qualitative research, the eyes and ears of the primary researcher ultimately serve as the filter for all data (Lodico et al., 2010). To ensure the collection of meaningful data in this qualitative study, interviews were an essential data source.

Creswell and Creswell (2017) suggested the development and design of an interview protocol (see Appendix A) to be used when interviewing participants. The protocol was used to guide the interview and end each session. I developed questions driven by the problem and purpose of the study. Interviews are a type of qualitative data collection tool that can reveal participants' given perceptions of their views, feelings, or experiences (Lodico et al., 2010). In the study, I asked semistructured, open-ended questions. I chose this interview format because I believed it offered participants the freedom to express their perspectives and provided a stress-free atmosphere. Open-ended questions produce in-depth responses about participant's perspectives and experiences (Patton, 2015). Also, engaging in the semistructured format allowed me to respond to each situation as it arises as well as to the emerging world view of the participant and new ideas on the topic (Merriam & Tisdell, 2015). The questions outlined in the interview protocol (see Appendix A) serve as an organized guideline to remind the researcher of the information that needs to be gathered and its purpose (Yin, 2014). I used

open-ended questions which were included in the interview protocol. Yin (2014) indicated a standardized open-ended interview minimizes question variations presented to participants creating a higher degree of consistency in the interview process. I chose interviews as the most sufficient means to explore educators' perspectives and answer the research questions for this study by not restricting participant responses through open-ended questions. The questions were developed based on the literature and the research problem.

I used a digital voice recorder to capture interview sessions. Audio recording ensures that details are accurately preserved for analysis (Merriam & Tisdell, 2015). Equipment malfunction is a potential drawback to audio recording, as Merriam and Tisdell (2015) pointed out. I had my iPhone as a backup recording device. Due to COVID-19, participants chose to participate by telephone, via Google Meet or Zoom. Marshall and Rossman (2016) stated that audio recording is a method of creating a permanent record of interactions. Interview sessions that were conducted through Google Meet or Zoom were recorded through those platforms, with participant approval. I took notes in my reflexivity journal during interviews and documented any noted nonverbal clues and reactions without hindering the interview's flow with personal responses or reactions. Validity was established during the interview process through open-ended questions in semistructured interview sessions. The interview questions were reviewed by an expert panel made up of elementary educators to establish sufficiency to answer research questions and support content validity in the study.

Data collected from participants was entered into HyperResearch software (https://www.researchware.com/products/hyperresearch.html) for coding analysis and processing. Coding (Lodico et al., 2010; Marshall & Rossman, 2016) identified specific parts of the data that describe related phenomena or experience and labeling those parts using broad category names. Coding for semistructured interview data is a useful tool (Creswell, 2015). I used a qualitative data analysis computer software package designed to assist in identifying common word frequencies and related themes that emerge from interview responses. I used HyperResearch software, which allowed me to identify emerging themes from interview responses. Examining the data from interviews and transcribed notes assisted in identifying themes and patterns in study findings. Interview data and transcribed notes were securely maintained and stored on an external hard drive and thumb drive that was dedicated to this project for 5 years after the publication date of the study. I maintained the data in a locked file cabinet in my home office and I will permanently delete electronic data and shed paper data and the end of the five-year time frame.

Procedures for Recruitment, Participation, and Data Collection

Maxwell (2012) described purposeful sampling as deliberate. The participants must possess the qualification to address the questions associated with the study. It is also essential to have a mixture of experiences. Yin (2014) informed that researchers could gain access to participants via verbal, written, or electronic invitation.

Recruitment

The assistant superintendent and the principal of each school were my first contact with each school, after receiving approval from Walden's IRB and the proposed school district to conduct the study. I sought permission to conduct research by introducing myself and the study to the principal of the proposed schools. I received permission from the assistant superintendent and each principal. I also received permission from the District's RBB. After receiving permission from Walden University's IRB, I reached out to colleagues and acquaintances to open the recruitment process. I contacted each by email or telephone to introduce myself and the study. I also used snowball sampling to recruit additional participants due to COVID-related restrictions and slow response to invitations sent out to educators over the summer. Potential participants were informed of the purposeful sampling criteria. I used participant consent forms to request and verify voluntary agreement to participate in my research study. Invited participants included current and previous second- and third-grade literacy educators. All interview participants had a minimum of 2 years of teaching experience. I asked that all participants indicate their consent to participate via email. I also prepared to get a signature on a file copy from participants who choose to engage in a face-to-face interview. Due to COVID regulations, this option was not activated.

Each selected participant was contacted via email or telephone to schedule convenient interview dates, times, and locations. I allowed participants to determine the interview location and method to ensure convenience, comfort, and privacy. Participants were provided several alternative interview options due to COVID-19 precautions. If

participants choice not to schedule face-to-face interview times, I provided opportunities to participate by telephone, via Google Meet, or Zoom. My interview format consisted of semistructured, open-ended questions. All information obtained from participants remained confidential.

Saturation is an essential component of the research process. Creswell and Creswell (2017) stated in qualitative studies the type of qualitative design that is implemented influences the effective sample sizes. In phenomenological studies, samples of three to 10 participants may be sufficient; narratives may consist of one to two people; and grounded theory may consist of 20–30. I was conducting a basic qualitative study where I used in-depth semistructured interviews to explore my research questions and problem, so smaller sample sizes are appropriate (Creswell & Creswell, 2017). If data saturation or redundancy in my data presentation (Lincoln & Guba, 1985) was not met with the initial participants, I would seek out additional participation among potential participants who consented to the study at the onset of the research project.

Participation

I invited participants via email. I explained the study was voluntary, provided potential participants with the purpose of the study, and an informed consent. The informed consent identified benefits and risks. I accepted the first participants to accept my invitation. The invitation to the study explained the intent or purpose of the study. The explanation aligned with the informed consent. I informed potential participants that I was accepting respondents in the order in which responses were received. The informed consent introduced me and explained the study. Researchers are required to use informed

consent forms to protect both the participants and the researcher. Informed consents (Lodico et al., 2010) protect participants from harm and ensure confidentiality. The consent form explicitly provided pertinent information about the study and informed the participants of all procedures and risks associated with the study. Potential participants notified me by email of their interest and consented to the study.

Data Collection

After Walden University's IRB approval, I contacted participants via email or telephone to schedule convenient interview dates, times, and locations. Interview data and all collected documentation was maintained on an external hard drive and a thumb drive dedicated to this project and kept in my home office. Paper documents were filed separately and locked in a file cabinet in my home office. Interview data and transcribed notes were securely maintained and stored on an external hard drive and thumb drive that was dedicated to this project for 5 years after the publication date of the study. This process was designed to protect participants during the study and after its completion.

Interviews were conducted in the location chosen as the most convenient and appropriate by the participant. Due to COVID-19 precautions, participants were given the option to be interviewed via telephone, in person, Google Meet, or Zoom. Semistructured interviews were conducted for 45–60 minutes as part of the data collection process. Participant responses were recorded using a digital voice recorder or through of Google Meet or Zoom platforms as applicable and with participants approval. Collected data was transcribed and imported into, a qualitative data analysis software (QDAS) for coding and analysis.

I emailed a one- to two-page summary of my findings to each participant at the conclusion of the study for their member check, as indicated in the interview protocol (see Appendix A). Creswell (2015) stated that the member checking process involves providing participants with the final copy or summary of the finding for their review and can involve conducting a follow-up interview. I did not plan on follow up interviews unless required based on feedback from participants. Once participants received the summary findings, they had 3 days to respond if there are any discrepancies in the representation of their responses. There were no requests for follow-up interviews and no participant discrepancies were received.

Data Analysis Plan

Accurate data analysis is essential for outcomes that is beneficial to the academic community. Merriam and Tisdell (2015) informed that data analysis is a complex process that entails consolidating, reducing, and interpreting the data the researcher has heard, seen, and read into a sensible report. The process requires an accurate exchange between pieces of concrete and data and applying both inductive and deductive skills (Merriam & Tisdell, 2015). I used participant interviews to answer the research study questions. I used an audit trail to document a chronological record of my interactions and activities in my reflexivity journal. I planned to use the interview process to explore educators' perspectives. Two primary research questions drove the interview sessions and focused on educators' perspectives in connection with the purpose of the study. Questions 1–6 on the interview protocol (see Appendix A) were focused on RQ1, whereas Questions 7–9 were for RQ2. Question 10 allowed the participant to provide additional perspectives that

may be relevant and could be reviewed with the perspectives of other participants in the study.

Creswell (2013) stated qualitative research consists of preparing and organizing data for analysis, reducing the data into a system of thematic codes (and condensing), and creating a representation of the data in codes, tables, or a discussion. It is essential to protect the identities of the participants (Creswell, 2015) throughout the research process. Participants had alphanumeric indicators or pseudonyms assigned to assist in protecting their identities. The pseudonyms were assigned as P1, P2, P3, and so on with a total of eight participants selected through the process of purposeful sampling. In the event more than 12 potential participants consent to the study, they were be placed on a waiting list that I would draw from, if needed, as the study progresses. Data saturation was essential in this process. If data saturation was not reached, I would contact educators who consented to participate at the onset of the study for possible inclusion.

Interview responses via telephone, in person, were be tape-recorded, using a digital voice recorder, based on the ethical guidelines set forth by IRB standards. Interviews conducted via Google Meet or Zoom were recorded through those platforms, with participant approval. Notes were taken and properly transcribed into text data (Creswell, 2015). Qualitative data analysis software (QDAS) facilitates saving data in multiple digital locations (Patton, 2015). The participant responses from the recorded sessions were be transcribed and imported into HyperResearch for coding and analysis. HyperResearch offered thematic coding, data management and analysis systems, and the ability the create and compare matrices and mapping categories (Creswell, 2015). These

features assisted in coding and theme identification. Creswell (2015) stated that using coding for semistructured interview data was a useful tool.

The process of creating or developing codes, categories, and themes was deliberate and meticulously taken from interviews. This step required transcribing and becoming familiar with the data. Coding was an ongoing process throughout the data analysis process. Coding is the process of separating and identifying text to establish descriptions and broad themes in the data (Creswell, 2015). This step was essential in narrowing down and making sense of the data. I organized interview data (responses) into groups that displayed a commonality by identifying codes (repeated or common words or phrases) that emerged. Saldana (2016) explained that coding is the qualitative researcher's symbolic assignment of a word or short phrase to capture an attribute gathered from data. The process includes formulating codes (words or short phrases), which lead to categories (Saldana, 2016). I used descriptive words to clearly define and reduce the number of categories as I created themes. These categories then provided an overarching thematic commonality which yielded themes. I carefully followed this process. I used HyperResearch software to assist with the organization and maintenance of codes or categories and themes during this phase of the data analysis process. Discrepant cases in the interview process were also be reviewed. Creswell and Creswell (2017) explained that themes that do not align with the most common perspective represent real life and presents a more realistic and valid view of findings. After a careful analysis of the data to ensure saturation had been obtained through interview responses, I

also determined there were no significant outliers or discrepant cases. There were varying perspectives on the question regarding personal confidence.

Trustworthiness

Trustworthiness in the study's findings and conclusions is essential. Creswell (2013) explained it is not enough to gain perspective and expound on terminology since the transformation in practice will ultimately come from the ideas presented, trustworthiness in research practice and the result are paramount (Merriam & Tisdell, 2015). Trustworthiness includes ethically conducting a study based on research rather than personal opinions while ensuring validity and reliability (Merriam & Tisdell, 2015). To avoid bias and ensure reliability and validity, Creswell (2015) suggested strategies that establish trustworthiness for the qualitative researcher. Credibility (internal validity), transferability (external validity), dependability (reliability), and confirmability (objectivity) need to be established by the researcher to present trustworthy findings to the intended audience.

Credibility

Creswell (2015) explained that credibility is obtained by establishing sufficient internal validity. Korstjens and Moser (2018) described credibility as the equivalent of internal validity. Marshall and Rossman (2016) defined validity as how accurate findings and conclusions are analyzed and expressed. Data analysis methods, including the development of codes and themes, assisted in creating credibility through consistency in interpreting data. I used a reflexivity journal to document thoughts, notes, and personal biases throughout the study to minimize my biases. Identifying any biases, I had or

developed, was essential in providing credible findings. By using a reflexivity journal, I immediately noted and addressed any bias (favorable or unfavorable) that could potentially have influenced my research before, during, and after, interviews and while analyzing data. If I identified personal bias or interpretation, I relied on the compilation of codes and themes gathered during the data analysis process and assessment of educators' perspectives rather than my personal interpretations. Also, I used an expert reviewer with a minimum of 10 years of experience in elementary education, who holds a BA in Early Childhood, a MA in Foundational Education, and a Ph.D. in Curriculum and Instruction to provide an unbiased assessment of the research at the conclusion of my study as a final check.

Member checking allows the researcher to verify or confirm accuracy with participants in written form; this was another research practice I employed to assist with trustworthy or credible research findings. Birt et al. (2016) referred to member checking as a validation of findings opportunity given the participant because the process provides the participant the opportunity to review or check data for validation of facts. By providing participants this opportunity, transparency and credibility was increased. Through member checking as described by Creswell (2015), the process in which the researcher has findings reviewed, checked, and verified by the participant to ensured accuracy.

In this basic qualitative study, interviews were essential data. Thomas (2017) explained that member checks are often recognized as useful validation techniques to ensure that participants and researchers reported findings align. Cho and Trent (2006)

referred to this alignment as transactional validity, which is carried out through the process of playing data back to the participant for accuracy and reactions. Clarification and the verification of data, findings, and researcher interpretations (Patton, 2015) engage the participants through member checking findings and enriched the credibility of findings. At the conclusion of the study, I emailed a one-to-two-page summary of findings to the participant for review which assisted with the avoidance of misinterpretations. I informed the participant that a brief five to10 minute follow-up call to finalize the interview process would be arranged if requested.

Transferability

The research findings are only as good as the ability to apply the outcomes meaningfully. Vividly descriptive data (Yin, 2014) or thick description provides research transferability. I used thick, rich descriptions to help establish transferability. Patton (2015) defined thick descriptions as the foundation of the analysis. Merriam and Tisdell (2015) indicated that transferability is the use of thick descriptions, participants direct quotes, demographic information, and details of the setting and participants in a way that the evidence from data conveyed similarities between differing locations or context among differing audiences. I included this information to provide the reader with vivid descriptions providing as much detail as possible. I gave careful attention to the descriptive analysis to establish codes in the data analysis coding process. Lodico et al. (2010) further explained that transferability is determined by the reader's ability to decide if similar processes conducted in the study would result in similar outcomes in an environment that is personal or relatable to them. Korstjens and Moser, (2018) concurred

stating transferability involved the aspect of applicability of research findings to other settings. Research outcomes are not restricted to the setting where the study was conducted, nor is the transferability solely determined by the researcher, but other readers (Lodico et al., 2010).

An audit trail was used to document a chronological record of my interactions and activities in my reflexivity journal and I used a detailed account of interview reflections collected in a reflexivity journal. Descriptions included the interview setting and community characteristics. As I interviewed participants, I asked semistructured questions. I provided direct quotes of the responses. The interview protocol (see Appendix A) was instrumental in guiding me in obtaining thick descriptive responses.

Dependability

Merriam and Tisdell (2015) described reliability as the degree to which research findings can be replicated. Merriam and Tisdell also pointed out that it is imperative in qualitative research that the results presented are consistent with the data. According to Lodico et al. (2010), the researcher's ability to track the procedures and processes used in the data collection and interpretation process yields dependability. Lincoln and Guba (1985) described the efficient method of tracking these procedures and processes as establishing an audit trail.

Yin (2014) described maintaining an audit trail where the researcher or the external observer efficiently documents and can trace the steps taken in the research process from beginning to end (or in reverse). Yin equated the process to that of an auditor conducting a reliability review. I documented notes, data collection dates, times,

sources, and places in my reflexivity journal. I established an audit trail as another effective strategy to increase research dependability. I logged a step-by-step report of my interactions, communications, sequence of activities, and personal thoughts to track all facets of interactions and maintain transparency in my reflexivity journal.

Confirmability

Lincoln and Guba (1985) suggested that the qualitative researcher used reflexivity to establish confirmability. As the primary research instrument and data collection instrument, I was also a human instrument in the collection and synthesis processes. I used a reflexivity journal to assist with tracking and identifying personal biases as I proceeded in the research process. The reflexivity journal was used to document descriptive findings for transferability and support confirmability in the study. Since biases influence outcomes (Lincoln & Guba, 1985), the researcher needs to capture a variety of information about self and method for self-reflection. Lincoln and Guba suggested including the daily schedule of logistics, a journal containing personal values, interests, insights, and a methodological log. I also used an expert reviewer who has a minimum of 10 years of experience in elementary education, who holds a BA in Early Childhood, a MA in Foundational Education, and a Ph.D. in Curriculum and Instruction. Marshall and Rossman (2016) explained function of the reviewer is to review, analyze, and certify the study was well conducted and the research was well reported. The reviewer checked to ensure personal biases were not reflected in the study.

Ethical Procedures

Walden University's IRB for Ethical Standards in Research is committed to ensuring that research students conform to Walden's stated ethical standards and U.S. regulations (Walden Research Center, 2015). These standards ensure appropriate and protective processes from selecting and notifying participants, collecting, and analyzing data, to presenting findings. Upon IRB and District approval, I communicated details about this study to participants by explicitly introducing its purpose. I also asked for voluntary participation. In some research studies, some forms of reciprocity are provided to participants (Creswell, 2015). Due to the ethical guidelines set forth by the IRB, I deferred to Hussein (2015), who informed that no financial coercion or undue compulsion to participate in the study should be offered. Participation was entirely voluntary. I provided an explanation of the Walden University doctoral research process. Potential participants were informed of anticipated benefits and risks. Creswell (2013) suggested that the consent form participants signed prior to active participation explicitly detail ethical concerns. I provided each participant with a consent form prior to beginning interviews. Telephone, in person, Google Meet, and Zoom options were be offered as interview options to address COVID-19 precautions. I informed participants of their right to withdraw from the study, as advised by Marshall and Rossman (2016).

It was essential to maintain fairness, integrity, and honesty among participants. *Do no harm* was imperative in conducting and presenting research. I completed the National Institutes of Health "Protecting Human Research Participants" (NIH) training course (#2543244) to ensure I was fully aware of the appropriate guidelines and that I did

not violate ethical guidelines in any of my research processes. Trust between researcher and participant is vital in the research process. Conveying the purpose of the study and avoiding deception (Creswell, 2015) increases support.

To ensure and maintain the confidentiality of participants, I used a numbering system. I assigned a unique numerical code to each participant to differentiate between each and to ensure the confidentiality of participant identities. Creswell (2015) suggested using a protective measure to shield identities and to avert ethical mishaps. Participants had pseudonyms assigned to assist in protecting their identities. The pseudonyms were assigned as P1, P2, P3, and so on.

I planned to use NVivo, a qualitative data analysis software, to link interview responses to themes that emerge during the interview process. In chapter 4, I chose to use HyperResearch software as a more cost-effective resource. Interview data and transcribed notes were securely maintained and stored on an external hard drive and thumb drive that was dedicated to this project for 5 years after the publication date of the study. Paper documents will be shredded 5 years after publication, per IRB requirements. Data drives and documents were stored in a locked filed cabinet in my office.

Also, I conducted interviews at sites where I am not actively employed as an educator. Biases that could potentially hinder the creditability of research findings were be eliminated by avoiding personal daily contacts in the interview process. Additionally, the proposed district's ethical policies prohibit interviews by employees on their worksite. Lastly, I hold no supervisory role which, exempts me from any ethical violations regarding authority over potential participants.

Summary

In Chapters 1 and 2, I identified the problem, purpose, and research questions for the study. The purpose of the study was to explore second- and third-grade educators' perspectives on the challenges they face when integrating technology and how technology implementation influences literacy outcomes. O'Neal et al. (2017) has indicated that educators integrate technology based on their personal perspectives. The research questions that the study is rooted in are: (1) What are the challenges educators face when integrating technology in their classrooms? (2) How does technology implementation influence literacy outcomes? The conceptual framework was also identified and was grounded the ideals of social constructivism and the principals of Vygotsky's MKO learning environment.

In Chapter 3, I provided a rationale for selecting the qualitative study design for this research study. I presented information on design and linked the research questions in the interview protocol (see Appendix A). I also provided a detailed description of the role as the researcher for the study as the primary data agent. I presented a methodology that included my participant selection, instrumentation plan, participant recruitment, and data analysis plan. I chose to use purposeful sampling to ensure participants who met the criteria to appropriately provide feedback based on the target age-range. I also selected semistructured interviews to ensure structure while providing participants the liberty to express themselves. In Chapter 3, I also described the significance of providing transparency and reliability in research and provided my plan for ensuring trustworthy outcomes while maintaining ethical practices. I identified my plan for providing the

essential elements of credibility, transferability, dependability, and conformability in the study. Lastly, I provided details on how ethical procedures were addressed and followed. In Chapter 4, I provide my data analysis and the results of the study.

Chapter 4: Results

The purpose of this qualitative study was to explore second- and third-grade educators' perspectives on the challenges they face when integrating technology and how implementing technology influences literacy outcomes. There were two research questions that guided my study:

- RQ1: What are second- and third-grade educators' perspectives of the challenges they face when integrating technology in their classrooms?
- RQ2: What are second- and third-grade educators' perspectives on how technology implementation influences literacy outcomes?

Questions were developed that were driven by the problem and purpose of the study. I used 10 semistructured interview questions to collect data connected to the two central research questions.

In this chapter, I provide an overview of the design and summarize the findings for this qualitative study. First, I describe the setting for the study with relevant participant demographics. The data collection and analysis process with evidence of trustworthiness is presented next. I then present my research results. The chapter concludes with a summary of my findings.

Setting

The study was conducted with participants from three schools within one suburban school in the Southeast United States. Due to the socioeconomics of the county, the district qualified as a Title I District. Educators were purposefully selected to ensure they met the criteria to participate in the study. All educators were second- or third-grade

educators at one of the three approved schools for the study. The study was limited to three schools and two grade levels, making the participant pool narrow. The second and third grades were chosen for the study because those are foundational academic years.

During the proposal, COVID-19 precautions were integrated into the study to ensure safety for participants. Interview options included methods that did not require face-to-face communication. The setting for students and educators went through several changes between the proposal and study processes. Personal and organizational conditions that may have influenced the participants' experience during the study include the transition from face-to-face teaching and learning to 100% virtual due to the COVID-19 Pandemic. Educators had to turn their homes into their classrooms. Also, the interview portion of the study was conducted during the summer and the first few weeks of the return to face-to-face instruction. Educators were engaged in simultaneous teaching in the physical building after the virtual transition back to one physical location. After 100% virtual teaching from home, educators were returning to the school setting with the expectation of teaching students in the classroom in person and virtually, simultaneously or hybrid.

Demographics

The participants in this study were all elementary educators who had experience teaching in the literacy classroom. Participants met the study requirements to have taught in second- or third-grade bands within the last 3 years with 2–3 years of experience teaching literacy. The teaching experience of the participants ranged from 5 to 21 years. Six of the eight participants in the study were female. Educators in the study were also

responsible for actively integrating technology in the classroom. Table 1 shows the teaching experience and grade-level experience of each participant.

Table 1

Teacher Demographics

Teacher participants	Years teaching	Grades taught
P1	21	Second, fourth, ESOL
P2	5	Third
P3	15	Second
P4	12	Second, third
P5	5	Third
P6	6	Third
P7	16	Second, third
P8	7	Third

Note. ESOL = English for speakers of other languages.

Data Collection

I interviewed a total of eight participants over 12 weeks. After receiving approval from Walden University's IRB and the partner district's RRB to conduct research during the summer of 2021, I began reaching out to potential participants. IRB approval was received during the summer when educators were on a break from school. I sent email invitations in staggered groupings in which I introduced myself, stated the purpose of the study, and asked for informed consent to participate. I followed the recruitment process presented in Chapter 3. Responses were very slow, with a total of eight participants (see Table 1) following through with the interview process. I faced a significant challenge since my approval was granted during the summer when educators often may not review emails. After a few weeks with only three interviews, I sent out follow-up invitations. I sent out an additional set of staggered invitations 2 weeks before school reopened and the remaining follow-up invitations after school reopened. I sent a total of 30 original

invitations, and I also sent out follow-up requests. By staggering emails and invitations to participate in the study, some educators received two follow-up invite requests, and some received three. Snowballing was used to recruit additional participants due to COVID-related restrictions as indicated in Chapter 3. I received 13 emails responses from educators indicating "I consent." Eight of those followed through with the interview scheduling process. Two scheduled an interview but did not show up for their scheduled Zoom interview.

Once each potential participant reviewed the consent form and responded indicating "I consent," an interview was scheduled, and an alphanumeric indicator or pseudonym was assigned. Each participant was assigned a pseudonym to assist with confidentiality and protect their identities. I received 13 emails indicating "I consent;" however, three did not follow up to schedule an interview and were placed in my reserve file. Due to COVID-19 restrictions, I gave participants virtual or telephone options for interview sessions. Two educators did not show for their scheduled Zoom interviews. Emails were sent to those who did not show up stating that I was sorry that we missed our appointment and would be happy to reschedule at a time that was convenient for them. Interviews for all participants were scheduled based on participants' preferences and availability.

In the data collection process, I used an interview protocol (see Appendix A). The original plan indicated that each interview would last 45–60 minutes. I met with six participants via Zoom and two were telephone interviews. Each interview lasted approximately 30–40 minutes after the protocol information was shared. Seven

participants were interviewed at their place of residence to ensure privacy and comfort. Participants chose a room in their homes to connect with me for their meeting. P5 chose a location in the school building after school. I conducted all interviews from the privacy of my home office with my door closed. Before each interview, I contacted the participant to confirm the interview date and time. Once I confirmed the interview, I provided the participant with the Zoom link for our meeting.

Before starting the interview and data collection, I ensured that each participant met the research criteria for participation. Each participant was informed that the interview was being recorded and I gained approval to record. Participants' videos were not on during the interview recording. A digital voice recorder was used as a recording resource. Telephone interviews were audio recorded. I reaffirmed that participation was voluntary and outlined the steps taken to maintain their confidentiality. These steps included using alphanumeric indicators or pseudonyms and not legal names and securely storing data. After reviewing the volunteer and confidentiality information, I asked 10 open-ended semistructured interview questions. The questions required participants to give descriptive details when providing answers.

During the coding phase, I used thematic coding to analyze the collected data. I used both manual coding and HyperResearch software. The original plan for the study included the use of NVivo software. An alternate software was chosen as a more cost-effective resource. This variation from the original plan did not alter the results of the study. No unusual circumstances were encountered during the data collection phase of the study.

Data Analysis

The process used for data analysis consisted of reviewing and transcribing collected data and uploading transcripts into the coding analysis software chosen for this study. HyperResearch is the software I used to assist in the facilitation of identifying frequently used words and phrases individually and as a group of participants. I read and reviewed the data twice to become familiar with it. I also manually transcribed the data by hand, which further increased my familiarity. This process required several more rereads to ensure accurate transcriptions. I used eight digital voice recordings to transcribe the interview data and saved each interview using the educators' pseudonyms. Each transcript was saved on my personal computer using password protection as a safety measure.

After transcribing the data, I conducted a third review which included listening, reading, and rereading the data several more times. I reviewed each interview transcript line-by-line assigning codes to begin to categorize the data. Key phrases were underlined or highlighted, and notes were written in the margin. I used highlighters to identify common or connected codes in each transcript. I organized the data by identifying codes or responses that repeated or shared a commonality. The most common codes were collaboration, access, technology deficits, technology issues, engagement, confidence, accountability, pandemic pressure, resources, and MKO. I used HyperResearch software to assist with the organization and maintenance of codes or categories and themes during this phase of the data analysis process. For each interview transcript, I created categories corresponding to each interview question.

I carefully reviewed participant excerpts associated with common codes and formulated categories. This facilitated identifying frequently used words and phrases individually and as a group of participants. I created a Microsoft Excel spreadsheet to manually analyze the data and develop broad categories for each of the10 interview questions per participant (see Appendix A). The spreadsheet consisted of the following information: open codes, participant excerpts, cycle one descriptive codes, and quick memos or personal notes. I included a column for second cycle patterns. Additional steps in the process were identifying and developing the most prevalent themes.

The established categories provided overarching thematic commonalities. Through thematic analysis, patterns or themes are identified in qualitative data (Maguire & Delahunt, 2017). I again reviewed the coded transcripts, the spreadsheets, and common reports from the HyperResearch to establish themes associated with the two research questions for this qualitative study. I developed four themes for Research Question 1:

- Theme 1 – Technology issues beyond the educators' control hinder integration.
- Theme 2 – Elementary students need time and support with technology.
- Theme 3 – Educators (MKOs) had autonomy to choose supplemental resources from a multitude of options, to support student outcomes.
- Theme 4 – Educator efficacy with technology varied and influenced integration practices.

I developed two themes for Research Question 2:

- Theme 5 – Educators classified technology as a tool or resource.

- Theme 6 – Educators recognize the value of resource choices and invest personal finances to enhance outcomes.

An expert reviewer with 10 years of experience reviewed the final findings and checked for bias. Member checks were emailed to complete the process.

When discrepant or contrary cases or responses are discovered, the researcher is motivated to rethink codes, categories, and themes (Saldana, 2016). The categories and themes that emerged were consistent. I found no discrepant cases in my study. There were varying perspectives on the question regarding personal confidence.

Results

The research questions for this study were designed to explore second- and third-grade educators' perspectives on the challenges they face when integrating technology and how technology implementation influences literacy outcomes. Interview questions one through six on the interview protocol (see Appendix A) focused on educators' perspectives on integrating technology. Questions seven through nine focused on the influence of implementation. Question 10 allowed educators to share additional perspectives they believed to be pertinent to the study. The two research questions that guided my data collection, analysis, and interpretation were the following:

- RQ1: What are second- and third-grade educators' perspectives of the challenges they face when integrating technology in their classrooms?
- RQ2: What are second- and third-grade educators' perspectives on how technology implementation influences literacy outcomes?

Tables 2 and 3 show the themes and categories developed from the data.

Table 2

Themes and Categories Based on Research Question 1

Categories	Themes
Unpredictability of technology	Technology issues beyond educators' control
Wi-Fi and internet issues	
Technology beyond educators	
Control deficits	
Broken devices	
Teachers navigating education during a pandemic	
Logging on to the computer/ logging on to websites	Elementary students need time and support
Remembering passwords Elementary students need time and support	
Getting acclimated to using technology	
Decisions based on standards and performance	Educators (MKOs) had autonomy to choose supplemental resources from a multitude of options to support student outcomes
Insufficient training	Educator efficacy with technology varied and influenced integration practices.
Confidence	

Note. Table shows the categories and themes that were developed from participant interviews based on educators' perspectives. Data collected were from Interview Questions 1–6.

Theme 1: Technology Issues Beyond the Educators' Control Hinder Integration

Theme 1 emerged as eight educators expressed the challenges they faced while integrating technology in their early childhood classrooms. All educators expressed that technology issues often arose, posing challenges that created disruptions in the learning environment and the presentation of efficient academic skills and strategies. The challenges ranged from internet and Wi-Fi disruptions to broken devices and access. P2 indicated that access was sometimes a problem because students had to check out their laptop or Chromebook from a computer cart:

> My first couple of years, in order to use the laptop carts, we had to sign up, and then check them out from the library, and we didn't have as many laptop carts as we eventually received. So, it was a little harder to integrate technology where the students were continuously, actively engaging in technology simply because we didn't have the technology on a constant.

This process was time-consuming as well. P6 stated, "The first challenge that comes to mind is time management. It was always hard having students check out laptops and get started in a timely manner." There was also the concern and time lost when there were problems that needed to be fixed on the laptops or Chromebooks. When a device was broken, P4 referred to the challenge as one that may reflect on literacy outcomes, "if it takes too long for a student to get their device fixed."

The educators in the study experienced a transition to 100% virtual teaching from August to April of 2020–2021, and simultaneous teaching for the remainder of the year. They opened the 2021–2022 school year in a face-to-face, simultaneous environment.

Educators stated that teaching and learning in a face-to-face environment were easier to manage. P4 stated, “As for me, I felt the lack of time to consistently use it with my second graders posed a big challenge, especially when the pandemic started.” P6 shared educators’ perspectives regarding challenges with technology in the face-to-face environment versus virtual stating,

> When I think of consistency with some of the technology, it can cause a brief setback or delay instruction on any given day. It requires quick thinking and problem solving by the teacher. Quick alternatives can be managed in face-to-face situations. It can cause more problems in virtual situations.

The inability to monitor students’ activities when integrating and engaging with technology was a common theme among participants. Educators voiced concerns about students logging on to other sites during instructional time and not actively participating in the lesson. Educators experienced more of a challenge teaching virtually stating that in the face-to-face environment they were able to walk around a monitor more. Educators expressed if students were on other sites during instruction, it showed in literacy outcomes. Four of the eight participants voiced their concern regarding students on sites that were not assigned. It was shared by P4 that the most frequent challenge faced when integrating technology was online safety, “trying to keep them on the sites or programs they’re supposed to be on.”

The safety measures that educators expressed were a more challenging area of concern when navigating education virtually. Educators expressed the desire to integrate engaging activities as P7 explained,

> If the students are not interested in the lesson or activity, literacy outcomes will suffer. If they see it only as a game to win or lose with no focus or comprehension the outcomes will suffer. Students often tend to have apps open and are not focused.

Internet issues were a prevalent theme. P5 voiced the concern shared by several participants stating,

> We definitely had some internet outages when students were at home; some students were having connection issues and trying to hear. … You don't want to just be a chat box quiet class you know where you are the only one talking.

P5 further shared, "I like them to talk to me, so that was a challenge because some students could not hear, some students could not talk, some students' mics were choppy, so that was definitely an issue. Things that we can't control." P4 shared that at least a quarter of the class reported problems with their hotspots or Wi-Fi at home, stating that, "Sometimes the programs or videos would work and sometimes they wouldn't." This sentiment was shared by P6 who stated, "You can have your entire lesson planned out and how you expect everything to work, and the technology just didn't get the memo." Also, there were occasions when students intentionally disengaged, in the lessons as P3 shared, "Then there were the students who deliberately turned their volumes down or passively participated because they were on other websites during virtual instruction. These daily disruptions created frequent challenges for me and my students."

Finding engaging and developmentally appropriate materials for students presented a challenge. Participants stated it was challenging locating reading passages to meet the needs of their students online. P1 stated,

> I can find material but finding the reading levels that my students need for instruction is a struggle. There is literature on just on about anything, but a lot of it be above their reading levels, so in order for them to read independently, finding materials that they can read is a big hindrance to me.

Theme 2: Elementary Students Need Time and Support With Technology

Educators pointed out that early childhood students are not initially equipped to handle technology integration. P1 and P8 both indicated tasks such as logging on or remembering passwords is a struggle. P1 stated, "Sometimes it takes a minute to get students logged in to the site or the assignment." P1, P5, and P6 said it was a challenge getting students acclimated to technology. P5 voiced a challenge with students that was shared by colleagues and was captured in the following comment, "As far as any other barrier I would say maybe, I like I said, students not knowing how to use the different programs, different platforms, not knowing how to capitalize letters, laptops going dead, things like that." P3 shared one-third of the class needed technology assistance the entire year. The study involved second- and third- grade educators. According to P3 and P5 who indicated that students are exposed to technology as second graders, but the resources and requirements are different as third graders. Some participants echoed P7's statement, "Students are not readers or thinkers as they once were. Outcomes cannot increase if vocabulary, comprehension, and overall knowledge base is not increasing."

Educators expressed that students needed time to get acclimated to technology and programs. The concern of ‘process over content’ while getting acclimated was voiced as a hindrance to literacy outcomes due to technology deficits with students. P2 said,

> One of the ways the challenges may affect literacy is when we are integrating technology, if students are more focused on the process that they are having to do with the technology versus focusing on the content, there may be some skills they may not receive the full benefit of because they are focused on the technology more than the content.

Educators echoed the point that the students need time and support to use technology. P3’s synopsis was shared by colleagues,

> I had to frequently remind myself that the students, especially at 7 and 8 years old, they need time to practice and use the technology before we, as teachers, can receive an accurate representation or student work product that truly reflects what they know and their abilities.

Students enter the classroom with different abilities, different experiences, and on different academic levels. P5 shared a common concern stating,

> So, you know they still need a lot of hands-on when it comes to paper and pencil, so they really need it when it comes to technology and trying to use the computer and trying to see what buttons to press, they don’t know letter sounds, letters, what they look like and how to type and things like that.

P8’s comments echoed the peers indicating early childhood students are in the foundational years of learning and developing skills stating, “Integrating technology in

the lower grades is also a challenge because they are learning to write and with technology that requires typing. I see the need, but I think we need to find a balance."

P2 also shared that students were unable to or do not use the literacy strategies available to them with some online activities. Due to technology deficits, students may not highlight online passages or make notes. Reading passages that are presented in PDF formats require paper and pencil. Students often do not use both methods simultaneously. P2 explained,

> So, if I send a version of a passage as a PDF to a student, they are not able to highlight, make notes… as far as looking at it on the computer. Even if the student is given paper to make their notes on the paper while looking at the passage on the screen a lot of times, they still don't utilize the paper the same way that they would if the passage was on the paper. So, in that way, the technology can be a hindrance in the literacy classroom.

P8 added to this sentiment stating,

> One of the things that hinder literacy outcomes is the student's actual ability to effectively use it. Only documents presented in specific formats can be written on; students must learn how to use different tools, there is a lot of scrolling back and forth. This is a lot for elementary children.

The perspective of the participants regarding the need for support and the implications on literacy outcomes were summed up in P2's statement,

> Another challenge is also trying to teach the student how to use the technology because the students don't always come into the classroom with the same access

> to technology, so that is another thing as well. Trying to make sure that all the students know how to effectively use the technology that would be used for class so that more of our class time could be used toward the content that we are trying to teach than being used for trying to teach the technology.

Theme 3: Educators (MKOs) Had Autonomy to Choose Supplemental Resources From a Multitude of Options to Support Student Outcomes

The theme for MKO decisions emerged as educators discussed their roles in deciding what technology is used in the classroom and specifically for literacy. All the participants in the study worked in the same school district. There were some resources that were mandated throughout the district for all educators to integrate. In addition to the mandated resources, participants shared that they had the autonomy to select other resources they believed would enhance students' understanding and outcomes. P1 shared questions of accountability such as "how do we hold students accountable for the instruction they are missing? What digital tools can I provide to enable the students a way so that they can demonstrate their learning or understanding?" helped to drive decision making when teaching virtual students. Educators also shared they understood their roles and the significance of their choices. As P4 shared, "Technology is only as good as the individual planning the instruction."

Educators commonly stated that with technology there remained the accountability component to the teaching and learning. While educators expressed wanting to have engaging activities, there was consistent concern that when students engaged in game-like activities, they often were in it for the game and missed the

comprehension objective. Some educators felt that students were not typically interested in participation if the program was not in-game mode. Others indicated that children are competitive; therefore, they indicated such activities were a great way to get students engaged.

Tools such as Nearpod, Jamboard, and Pear Deck were the top three resources revealed as resources educators chose to integrate into their classrooms. Participants stated that these resources allowed students to engage and collaborate, enhancing instruction. P1 stated, “I do think it enhances instruction when it’s used correctly, but I think it should be used as just a tool for instruction. I think it should be used as a supplement for instruction.” P6 also stated, “Technology makes lessons more engaging. Even if students are working independently, they can engage in interactive activities. All educators indicated that consistency and fidelity were required for implementation to be successful.

Theme 4: Educator Efficacy With Technology Varied and Influenced Integration Practices

Many of the educators stated that the pandemic forced them to speed up their usage and efficacy with technology. When asked how confident they were, most participants indicated the pandemic created a demand for expediency with knowledge and implementation. The confidence of some participants was increased as P3 shared,

> It was difficult demonstrating what I needed my students to do through Zoom or Google Meet when I had not done it before. Technology is a wonderful tool if you know what you are doing. Once we were all kind of forced to use the technology

> and doing so, I do feel that I am more confident with it and using it with the student to teach literacy.

Educators expressed varying degrees of confidence with technology. After reviewing the data, educators with more experience in the classroom were not as confident with technology as their less experienced peers. The collaboration between colleagues provided needed support as P1 shared, “I’m a bit older, sometimes it takes me a minute to figure out how things work, but I go to my younger colleagues, and they help me out.” P2, P4, P5 and P6 were confident with using technology. P7’s confidence level was described as low due to the pandemic and lack of assistance. P7 commented, “On a scale of 1 to 10, I would rate myself between a 5 and a 6.”

Technology integration has been accepted by educators as a necessity for the youth. P5 stated,

> It’s getting them prepared. They are growing faster than we did in my generation. These kids, nowadays they know so much about technology. It’s integrated faster than when I was in school. So, I think that it is actually helping them more so than hurting them. But now the only thing is as teachers, we have to make sure we give them both. We can’t just do technology; we can’t just do bookwork. You know, we have to still, even though we are doing technology and incorporating technology we have to still show them how to read a book.

This sentiment is confirmed by colleagues such as P7 stating,

> I understand that technology is becoming more and more of the norm in our society. We want our students to be able to compete in a global society, but in

order for them to do that, the educators must be better prepared or equipped to use the technology.

Table 3

Themes and Categories Based on Research Question 2

Categories	Themes
Engagement with technology	Educator classified technology as a tool or resource
Enhancement through technology usage	
Differentiation practices	
Collaboration resources	
Overwhelmed by resources	Educators recognize the value of resource choices and invest personal finances
Personal finances to advance technology	
Virtual versus face-to-face	

Note. Table shows categories and themes that were developed from participant interviews to answer research question 2. Data are from Interview Questions 7–10.

Theme 5: Educators Classified Technology as a Tool or Resource

Themes 5 and 6 emerged under research question 2, which asked what are second- and third-grade educators' perspectives on how technology implementation influences literacy outcomes? In theme 5, technology was classified as a tool or a resource by the study participants. Resources such as Nearpod, Jamboard, Kahoot, Escape Room activities, IXL, Mimeo Boards, Google Slides, Pear Deck, and i-Ready were identified overwhelmingly as educator integrated tools. All participants indicated that these tools were useful for student engagement. "If a student is motivated or

engaged, it will be reflected in their outcomes," according to P4. Educators further indicated that engagement is essential for positive outcomes. Differentiation and collaboration were also named repeatedly by participants as positive influences for the integration of technology in the classroom.

The participants overwhelmingly reported that integrating i-Ready in their literacy practices had a positive influence. Educators expressed the ability to use diagnostic data, engage in whole group interactive activities, and assign personalized independent lessons to meet student needs was beneficial. P3 stressed concern about the validity of the outcome of i-Ready results by virtual students because parental assistance may have been provided and the virtual results and face-to-face assessments often did not align, stating,

> I was very concerned about the validity of it when we have to implement it virtually and strictly virtually. So, when students were still at home. It was through the class interactions, through the live Zoom meetings where I was able to get a better idea of what they knew compared to the lessons that they were completing because sometimes those reading lessons did not align with what they were able to demonstrate for me in live time so that posed a big challenge on the literacy outcomes.

Various tools were used implemented to enhance collaboration. Participants stressed the necessity of students communicating with each other for enhanced outcomes. Educators commonly expressed activities that allowed students to collaborate and engage interactively resulted in greater comprehension and increased outcomes. Data revealed that educators implemented small group instruction, breakout rooms, and individualized

activities in their classrooms. P6 shared, “Since children are competitive, putting them in a breakout room to answer a question and report back gets them thinking and working together. Also, games like Jeopardy or Escape Room activities have worked well.” P4 stated,

> The students’ motivation to use the digital resources is a factor that I believe hiders them because the students may not take the resource seriously and just click and press buttons. If the students are not engaged or if they find it too difficult to use, then it will hinder. Finding resources that are interactive promotes outcomes.

Theme 6: Educators Recognize the Value of Resource Choices and Invest Personal Finances to Enhance Outcomes

In addition to the resources listed above (Nearpod, Jamboard, Kahoot, Escape Room activities, IXL, Mimeo Board, Google Slides, Pear Deck, and i-Ready), educators identified other resources. The list included Stem Scopes, Google Docs, Gim Kit, Boom Cards, Paragraph of the Day, whiteboard.fi, Quizizz, EdPuzzle, Readworks, Prodigy, Freckle, and i-Ready) educators invest personal finances and share sites and resources that they find beneficial in their instruction. Regarding the availability of resources, P3 stated,

> Another challenge that involved the integration of technology within the classroom was simply just finding that balance. There are a plethora of apps, websites, resources, and platforms that are introduced, promoted, and required throughout the school district in addition to the ones we discover, stumble upon,

> or perhaps have been shared by our colleagues or seen in social media or pop-up ads. It gets very overwhelming to learn about all these new things.

Amid the multiplicity of resources, educators must determine which ones are the best ones to implement based on their individual students' needs and their personal finances. Educators stated that often there are pop-up advertisements that appear on sites. P1 stated, "The little ads that pop up on websites that pop up with 'free' is a barrier. So, if you want good websites, you have to pay for them. That's a barrier as well." Also, educators expressed that they have purchased subscriptions to ensure access to beneficial resources. P3 expressed the benefits of using Nearpod with students, leading to a decision to purchase a subscription. When asked about the decision to pay out of pocket, P3 responded, "I felt it was worth it." P7 stated, "Some of the advanced features or more engaging activities require paid subscriptions if you want to get the most out of it for your students." P6 added,

> In my class, I would incorporate games like Gimkit to get their minds working as they work together to win. I have a paid subscription so that I can include more students and access more content. These were awesome because they are customizable so you can have their game on whatever you want them to work on.

P2 added that the selection and presentation was important, stating,

> If we are using a passage or reading through and passage and we are doing a close reading online, it might be more difficult for students to really be able to use all of the strategies that they can depending on the resource that we have.

Regarding discrepant cases, I did not find any in the study. Saldana (2016) explained that discrepant cases are motivators guiding the researcher to rethink codes, categories, and themes. As I reviewed the data, there were no significant outliers. I checked for inconsistencies or discrepancies within the themes in reviewing the data. Some educators had differing levels of confidence in their abilities.

Evidence of Trustworthiness

Trustworthiness is essential in qualitative research. I took several steps to ensure that educators' perspectives were presented without the influence of any personal bias. The steps outlined in Chapter 3 were implemented to provide trustworthy study findings. The four components that are addressed in this section are credibility (internal validity), transferability (external validity), dependability (reliability), and conformability (objectivity).

Credibility

Credibility is obtained by establishing sufficient internal validity (Creswell, 2015). The credibility of the data was evidenced by using ten interview questions that were reviewed by an expert panel made up of elementary educators with a minimum of 10 years of experience in early childhood education to establish sufficiency to the questions. Semistructured interview questions were asked to all participants to collect data on their perspectives on the challenges they face when integrating technology. The same interview protocol (see Appendix A) was followed in each interview session to maintain uniformity and credibility. Other measures taken included using a reflexivity

journal, audio recording of all interviews and transcript review, and member checking, as discussed in Chapter 3.

Another measure to assist with credibility was to use an expert reviewer who had a minimum of 10 years of experience in elementary education, who holds a BA in Early Childhood, a MA in Foundational Education, and a Ph.D. in Curriculum and Instruction. The expert reviewer conducted a review of the final findings to check for biases in the study. The use of the expert reviewer to check for bias enhanced the credibility of the findings.

Transferability

Transferability refers to the applicability of research findings to other settings and must be established by the reader (Korstjens & Moser, 2018). The steps taken to assist in determining transferability in this section align with those discussed in Chapter 3. I indicated in Chapter 1, a limitation in the study included the limited participation pool and site selection. The study was conducted with educators in one Title 1 school district. Study results may not be representative of all early childhood educators of different locations or demographic due to the small number of participants. Only second- and third-grade teachers who were responsible for integrating technology were eligible to participate. I selected three schools and educators with experience ranging from 5 to 21 years in the early childhood classroom. Thick descriptions, such as participant quotes to ensure the ideas presented by the participants were accurately articulated to the reader were provided.

I used an audit trail to record my interactions and activities chronologically in my reflexivity journal. Participants were asked semistructured interview questions. I provided direct quotes of the responses. The interview protocol (see Appendix A) was instrumental in providing consistency and guiding me in obtaining thick descriptive responses.

Dependability

Merriam and Tisdell (2015) described reliability as the degree to which research findings can be replicated. The tracking methodology used in the data collection process yields dependability (Lodico et al., 2010). The procedures outlined in Chapter 3 were followed to ensure the reliability of the data analysis. I used an audit trail to document a chronological record of my interactions and activities in my reflexivity journal, and I used a detailed account of interview reflections collected in a reflexivity journal. Member checks were used to ensure participants were comfortable and confident with the data interpretation.

Confirmability

Confirmability is described as the extent to which the researcher's findings can be confirmed or corroborated (Ravitch & Carl, 2016). To ensure confirmability, a reflexivity journal to assist with tracking and identifying personal biases. I used the reflexive journal to record my thoughts during the data collection process. Also, an expert reviewer was used to assess the data based on a review of the questions and to enhance the validity of my findings to ensure no biases were presented. All interviews were conducted following the interview protocol (see Appendix A) to ensure consistency.

I felt that data saturation had been reached in the interview process. Aligning with Lincoln and Guba (1985), redundancy in participants responses was an indicator that saturation had been met. Saturation seemingly occurred at the sixth interview as responses began to replicate and no new themes emerge. A total of eight interviews were conducted to ensure saturation.

Summary

In Chapter 4, a description of the setting and participant demographics was presented. The data collection and analysis processes were also reviewed. The results of this study were also presented. The two research questions in which the study was grounded focuses on educators' perspectives on the challenges they face when integrating technology and on how technology implementation influences outcomes. I presented the results based on six themes that emerged from the data. Data revealed that educators perceived the greatest challenge to the integration of technology in the classroom are issues that are beyond their control. Acknowledgement of the value to integrate technology was expressed with the additional acknowledgement that early childhood students need support. Educators perceive technology a beneficial tool that can assist with positive outcomes if educators are adequately trained. Also, confidence with the integration of technology varies but was enhanced during the virtual requirements created by the COVID-19 Pandemic. The participants revealed that educators are decision makers regarding the integration and implementation of technology, and they are faced with a myriad of choices. Lastly, educators agreed successful implementation of technology includes engaging students to enhance outcomes.

In Chapter 5, I discuss interpretation of the findings based on peer reviewed literature. A review and description of the limitations are presented. Also, I provide recommendations for further research and describe the potential impact for social change resulting from this study. Lastly, I present conclusions of this study.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this basic qualitative study was to explore second- and third-grade educators' perspectives on the challenges they face when integrating technology and how technology implementation influences literacy outcomes. An extensive review of peer-reviewed literature regarding educators' perspectives or beliefs, technology challenges, and technology influences was conducted (see Chapter 2). This study was designed to address the gap in research indicating that educators integrate technology based on their personal perspectives (Tondeur, Van Braak, et al., 2017).

Findings in this study provided insight into the types of challenges educators face when integrating technology from the perspective of second- and third-grade educators. I identified six themes answering two central research questions. The themes revealed that early childhood educators integrated technology and believed in the necessity of consistency and fidelity in technology implementation. Challenges encountered daily by study participants were reported as hindrance to the academic process. Educators were faced with challenges that created limitations within the scope of the academic environment. Study participants believed technology had the potential to positively influence children but indicated educators' confidence in integration is an important factor. It was revealed from the data that early childhood educators support the integration of technology in the early childhood classroom. The foundational years are essential for students as educators indicated they needed support with technology. As the MKO, educators recognized that the decisions or choices they made influenced outcomes.

Interpretation of the Findings

This study was guided by two research questions. The interpretation of findings was determined after completing and comparing the findings from eight semistructured interviews and the research presented in the literature review. The interpretations were grounded in ideas presented framed in the conceptual framework of the study which was based on the educational constructs of social constructivism and the theoretical ideals of peer collaboration, and the ideas associated with the MKO presented by Vygotsky.

The two research questions that served as the core for the study emerged into six themes. The first four themes relate to RQ1: What are second- and third-grade educators' perspectives of the challenges they face when integrating technology in their classrooms? The last two themes relate to RQ2: What are second- and third-grade educators' perspectives on how technology implementation influences literacy outcomes?

Theme 1: Technology Issues Beyond the Educators' Control Hinder Integration

Within the conceptual framework of the study, the MKO serves as the facilitator within the learning process and environment. The findings revealed by study participants in Theme 1 are substantiated by Christensen and Knezek (2017) and Taylor et al. (2020) who informed that educators encounter barriers when integrating and implementing technology. All participants consistently identified encountering first-order barriers when integrating technology. The educators who participated in the study indicated that the greatest challenges to integration were those that were beyond their control to resolve. Study participants identified Wi-Fi and connection, timely distribution, and broken devices. Educators expressed time-consuming efforts or lack of resources served as a

barrier (O'Neal et al., 2017) that posed challenges for educators and hindered the efficiency of the academic environment. Vongkulluksn et al. (2018) identified broken devices as described by the participants as first-order due to slow or lingering technical support. P5 shared "if a student is having challenges getting a lesson or having connection issues one day so they didn't get a week full of lessons until their laptop gets fixed, they are missing out on a week of instruction."

Participants P4 and P7 discussed the challenges they encountered, and the hindrance created within the learning environment when a device was broken. Another barrier educators expressed was that, as the MKO, they were not able to adequately monitor students in the virtual environment. Educators expressed concern regarding student safety with developmentally appropriate learning sites and keeping them off inappropriate websites. This confirms Bando et al.'s (2017) finding identifying additional classroom management was a requirement as educators must also surveil the academic environment to ensure students remain on task. Educators consistently voiced that some students would go to other sites during instruction. Laptops may pose as distractors and may demand facilitative support for guidance (Bando et al., 2017). The participants in the study indicated the monitoring required was an integration challenge. This challenge was increased for virtual instruction. This study confirmed that educators face challenges with the integration of technology that adversely influence the learning environment.

Theme 2: Elementary Students Need Time and Support With Technology

Theme 2 findings in this study were corroborated by Brugar and Roberts (2017) who affirmed that students need time and instruction related to task for the productive

and effective use of technology. Appropriate implementation of technology is an expectation for educators (Kosnik et al., 2018; O'Neal et al., 2017). Participants unanimously agreed that students needed time to get acclimated with the technology. The constructivist approach is based in creating safe community (Kosnik, 2018) for students. P5 stated "after the first month or two the students start getting more comfortable," and "after a lot of modeling and different things like that it definitely became less than a challenge and more of a pattern." As educators developed patterns through established consistency, student comfort levels and ease of use improved for some educators. Participants revealed that the process improved with technology integration throughout the year, but P3 indicated that students needed support throughout the school year.

Theme 3: Educators (MKOs) Had Autonomy to Choose Supplemental Resources From a Multitude of Option to Support Student Outcomes

Within the constructs of social constructivism and the theoretical ideals of peer collaboration Vygotsky (1978) explained the MKO has the responsibility of guiding instruction and providing and environment for children to progress from collaborative to independent success. Study participants shared a multitude on resources that were used in their classrooms to support teaching and learning. Educators explained they have mandated resources and then the opportunity to integrate other resources that they perceive beneficial for student growth. Ditzler et al. (2016) found the excitement of emergent technology, along with the technology standards and expectations, could serve as a catalyst for educators adopting technology in the classroom without adequate knowledge for effective educational usage. The sentiment expressed by P3, indicating as

peers shared resources, the excitement to try them out was overwhelming, strengthened that finding. Jenson and Droumeva (2017) stated there is no specific curriculum regarding what 21st-century learning should comprise or how K–12 curricula should be informed by it. With no standardized format or curriculum, educators have the task of implementing technology into the curriculum in a manner that will effectively achieve expected roles and responsibilities (O'Neal et al., 2017). The participants in the study listed several resources verifying Jenson and Droumeva (2017) as they sought to integrate technology based in their perspective of best practices for their students. Many of the same resources were listed by all participants. Only P5 listed paragraph of the week and the Boom Card application. Some educators listed Gimkit, some listed Kahoot, and some listed Quizizz. Some participants stated they used Google Docs or Google Slides. Educators also indicated that peers used sites or resources and shared information which provided new resource options to them.

AR, Star, and i-Ready were three programs I proposed to discuss with study participants. Researchers indicated AR was an effective motivator for student reading as well as an accountability measure for recall comprehension (Smith et al., 2017). P2 and P3 did not use the program. The study participants who used the program that expressed that AR was conceptually good. It allows students to read according to preference and Lexile levels. Due to the challenges encountered with technology and virtual instruction, educators expressed they used it to encourage students to read more but did not depend on it for student data. P1 started an AR competition between classes that motivated students to read while striving to maintain a minimum score of 80% on the

comprehension quizzes. All the participants in the study voiced satisfaction with i-Ready, indicating it was beneficial both collaboratively and independently.

All participants responded to questions stating they chose tools that allowed students to be engaged. Reading resources included books and passages that they students could hear. The ebook is to tool of choice for critical reading skills and motivation (Lin et al., 2019) in the foundation reading years. P3 explained the advantages to having technology included having digital programs that offered tools that read the content aloud for students. Participant P7 presented a different view stating, “technology reads for the students therefore students are not increasing their vocabulary and knowledge base as they would reading themselves.” Educators determine when and how they integrate ereaders in the classroom. i-Ready was a tool that was unanimously chosen by all participants due to the ability to be used interactively as a whole group activity, independently as an assigned activity, and through adaptive learning lessons. The data confirmed that educators choose resources based on their perspectives.

Theme 4: Educators Efficacy With Technology Varied and Influenced Integration Practices

Fifty percent of the participants stated that the pandemic or virtual teaching forced them to speed up their technology usage and integration. P8 stated, “I did begin to get better during the pandemic when we were totally virtual.” Some educators (P2, P3, P4, P5, and P6) provided a long list of resources used and the classroom, while others (P1, P7, and P8) minimized their resource list. The responses received were supported by Mei et al. (2018) affirming that the way educators access their own abilities in their minds

plays an essential role in the integration process. P3 discussed using the voice typing tool to help students and further expressed that there are many tools available, “it’s a matter of picking the best ones to suit each class’s needs or meet each class’s needs.” The integration and implementation of technology based on personal self-efficacy represents confidence rather than confidence (Taimalu & Luik, 2019).

Educators in the study indicated the desire to have more in-depth professional development and time with technology prior to presenting it to students. The educators stated they have access to webinars, but they expressed that method was not effective. Also, educators believed the time constraints involved in getting prepared as the MKO and facilitated lessons added pressured. Self-efficacy plays an essential role in the integration process, appearing to be the most critical factor (Mei et al., 2018) in educators’ minds. There were differing degrees of comfort and confidence presented among participants. Seven of the eight indicated they were confident enough to conduct their classrooms. P7 stated, “my confidence is low.” P5 and P6 were very confident. The study was conducted during the COVID-19 pandemic, which required a transition to virtual teaching and learning with no warning or preparedness. P1, P2, P3, P7, and P8 all mentioned the pandemic as a factor in their integration challenges. P1 stated, “this pandemic sped up the integration of technology in the classroom. Going virtual forced us to have to use more technology.” Educators voiced the desire for more time and training to be comfortable with technology as the MKO in the classroom. The district provides resources and webinars. Training and professional development is essential in the implementation of technology in the classroom.

Educators shared that they often have access to webinars and online training sessions when new resources are introduced. P8 shared feelings about technology and training, indicating that the webinars are insufficient tools and that educators do not have enough time to learn how utilize resources on their own: “Since technology is becoming more and more prevalent in our world, it is important that educators are properly equipped. Not just videos or a one-time workshop.” More professional development was desired. Firsthand opportunities to see and experience the methods integrating technology resources can support child-led learning and develop their personal, professional roles in extending learning (Vidal-Hall et al., 2020) and enhance the MKO’s ability to integrate technology. Providing educators with supportive training and strategic implementation is an essential element in building confidence and enhancing the instructional environment (Christensen & Knezek, 2017).

Theme 5: Educators Classified Technology as a Tool or Resource

The MKO in the classroom is the facilitator of the learning. The conceptual framework for the study is grounded in the idea that learning is a social process (Vygotsky, 1978). Vygotsky (1978) stated that learning first takes place while interacting with others at the social level and then an independent level. Vygotsky suggested students benefited from collaborative learning activities. Study participants shared resources that they implemented that allowed student to work collaboratively and enhance skills on an independent level. Educators supported integrating tools such as i-Ready because they provided interactive, engaging, and adaptive lessons. Nearpod was another tool that all participants stated they used because of the collaborative applications. Vygotsky believed

that, within the constructivist framework, active group participation achieved than individual participation and guided discourse would enhance outcomes. Participants stated that they chose resources that allowed students to engage and collaborate. P4 stated that “Students who engage and actively participate get to see and share responses and increase their understanding.” P7 stated, “students rely on technology to do much of the work for them. They can’t increase their fluency if they are not reading,” indicating the MKO is responsible for providing balance and differentiation in the academic environment.

Educators shared that differentiation was a positive attribute of technology integration. P1 explained that auditory and visual learners could receive instructional materials in formats that met their needs. All participants acknowledged using videos, PowerPoints, games, collaborate boards, read-alouds, breakout rooms, independent activities, or a combination of the listed resources with technology to provide differentiated instruction. P2 discussed the ability to differentiate questions for students after completing a close read in class. P8 pointed out technology provided an avenue for quick feedback to students.

The ability to collaborate was echoed by all participants. Participants also indicated that technology was an effective tool for differentiation. Aligning with Vygotsky’s theory, an essential component of the MKO’s responsibility is to differentiate lessons within the learning environment. Educators expressed that, through the implementation of technology, lessons and activities could be assigned to individuals or groups based on the students’ needs. Also, quick feedback was available to the student.

Vygotsky (1978) stressed the significance of collaboration, indicating that collaborative activities strengthen the abilities of the child to work independently. The finding in this study affirmed this assertion as participants shared that they chose tools to engage students collaboratively. Small group instruction or breakout rooms were the choices study participants stated as methods to engage in collaborative activities with smaller groups of students to increase student engagement. P7 did not specifically identify small group or breakout room but did include collaborate boards. Like P7, educators included collaborate boards and other tools that allow students to see and discuss their work in real time to share and discuss with among peers.

Theme 6: Educators Recognize the Value of Resource Choices and Invest Personal Finances to Enhance Outcomes

Study participants stated that there were times when personal investments were made to ensure that resources were available to provide to meet the needs of the students in their classrooms. Francom (2020) stated that student achievement abilities, perceived ease of use, and usefulness were among educators' perspectives in determining technology integration. The developmental stages for students to effectively utilize technology skills in a beneficial manner begin in early childhood (O'Neal et al., 2017). The study participant P3 identified with this statement, while emphasizing the students were "only 7 and 8 years old." To ensure student needs were met based on their perspectives, P3 and P6 stated that they purchased subscriptions to gain access to additional activities for their students. P7 reported that educators were responsible for

membership cost and learning how to use resources they found beneficial to their students.

Vygotsky's (1978) ideals express that learning is a social activity, educators (i.e., MKOs) seek preparedness through apps, peers, family members, and other social methods. Educators used a wide range of resources to enhance collaboration through the integration of technology. Participants reported seeking the assistance of peers, getting resource ideas from, and sharing with colleagues also. Through interviews, educators recognized the value of the choices they made for integrating technology in the classroom. Participants revealed that their decisions have long-term effects on their students' academic futures. Tondeur, Van Braak, et al. (2017) stated technology is integrated into the classroom based on educators' perspectives. Findings revealed that educators believed that game-like and interactive resources captured students' attention. P7 stated students are not interested in the activities if it does not appear in game mode. There was consistency among all participants that the primary determinant for technology integration was student data. Educators reviewed student outcomes and skill levels in their classroom to make decisions on which tool would best meet student needs.

Limitations of the Study

Limitations to the study were outlined in Chapter 1. One limitation I identified was that there was a limited number of participants based on the study criteria for second- and third-grade educators. I received approval to interview educators from three schools within the same district. Purposeful and snowball sampling was used in the recruitment

process to ensure participants were appropriately qualified to answer the questions and provide insight regarding the purpose of the study.

Another limitation was the sample size. Considering the number of students and educators at the proposed research sites, the findings may not be transferred to a larger, metropolitan, or urban school setting. Chosen sites were based in a Title I school district where the socioeconomic environment had the potential to influence the social and academic infrastructure which may limit the ability to transfer findings to a more economically advantaged demographic. Participants were asked semistructured, open-ended questions to facilitate in-depth responses. The question choice also provided consistency in the interview process. I also used an interview protocol (see Appendix A). I also used an expert panel to review my interview questions to establish sufficiency to the interview questions. To ensure credibility and dependability I also used an audit trail, member checking, audiotaping, a reflexivity journal, and an expert reviewer.

Recommendations

The participants of this study were from three different elementary schools in one Title 1 school district. I recommend that future research replicate this study in a different geographical region to better understand the challenges second- and third-grade educators face when integrating technology and how technology implementation influences literacy outcomes. Replicating the study in a different geographical region or academic environment may yield different results. Another recommendation is to conduct the study during a full face-to-face academic school year. Educators were faced with the additional challenge of virtual administration.

Study participants had autonomy in the selection of resources they integrate in addition to the mandated resources. Because of the prevalence of technology, the significance of the foundational years, and the expectation for the merging of the two, I recommend system wide initiatives for the integration and implementation of technology in the classroom. Providing a standardized system for integration practices would benefit educators and enhance educator confidence. Educators had the autonomy to choose resources, I recommend more literacy-specific resources to be provided to ensure consistency across each grade level. Lastly, I recommend more hands-on professional development. The greater degree of confidence educators felt with technology the more likely they were to integrate technology.

Implications

The results of this study draw attention to educators' desire to integrate technology. It also amplifies their perception of the value technology has now and for the future for students. Based on the study findings, educators found external barriers a hindrance to the effective facilitation of academic content. The conceptual framework in which the study was grounded called for the MKO to lead and guide students in a collaborative environment or social setting in a manner that would enable them to be successful independently (Vygotsky, 1978). This study revealed that the challenges educators face impede that progress. Infrastructure challenges that educators face contributing to the external barriers (Wi-Fi outages, choppy microphones, inability to hear, connection problems, and so forth) may be beyond the scope of this study. These challenges were significant based on the findings.

Results of the study could have implications for positive social change that can include policymakers, educators, and students. Positive change can result from policy implementation to enhance the training programs for educators. Frazier and Trekles (2018) stated that educators must be the central focus in the technology integration process, and it is important that school districts invest in proper professional development. Standards have been implemented to provide consistency and equitable teaching and learning practices. Likewise, positive change can result from standardized professional development by policymakers to support educators' efficacy and practice. Professional development presented to educators in a manner that meets their needs and enhances their confidence can contribute to more effective technology integration in the classroom. More effective integration can lead to improved outcomes for students.

Taimalu and Luik (2019) indicated that there has not been a significant amount of attention given to educators' perspectives. As educators' perspectives are acknowledged as a vital component in the foundational academic framework for students, positive change can result. Researchers reported that the classroom educator is the primary decision maker and influencing achievement outcomes with their decisions (Admiraal et al., 2017; Regan et al., 2019; Vidal-Hall et al., 2020). As policies are developed, professional development is implemented, and technology resources are identified educators could increasingly become active players in the provision of in-the-field insight leading to the best outcomes for students.

Conclusion

The purpose of this study was to explore second- and third-grade educators' perspectives on the challenges they face when integrating technology and how technology implementation influences literacy outcomes. Educators with a minimum of two to three years of experience teaching second or third grade within the last three years and who were actively responsible for integrating technology in the literacy classroom were invited to share their perspectives. Eight educators shared their perspectives on the challenges they faced integrating technology. Research presented in Chapter 2 supports the perspectives presented by the educators in this study. The results revealed that educators faced challenges that they perceived as being beyond their control. Researchers identify those challenges primarily as first order barriers. Also, educators faced the challenge of having autonomy to use resources of their choice with no standardized curriculum-based oversight or guidance. Research findings indicated that educators integrated technology based on their perspectives. The findings in this study found that perspectives were not the sole decision maker. Educators also integrated technology based on students' needs and were willing to invest personal finances to ensure students had access to effective, efficient resources. Lastly, educators perceive the training they receive as insufficient or ineffective, leaving them not fully confident when integrating new technologies.

Educators are able to make a powerful and lasting impact on future generations. The participants in this study acknowledged the potential power and benefit of technology in the foundational. Challenges were also voiced. Through addressing the

perspectives of educators as presented in this study, positive outcomes can result. As positive influences are noted in the early years, the noted improvements will potentially increase learning and earning potential for our youth locally, nationally, and globally. Findings garnered from this study may influence populations beyond the foundational years.

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Appendix A: Interview Protocol

Interview Protocol	
Actions	
Introduction of interview process My name is Renee Kenny. I appreciate the time you have scheduled to participate in my research study. I am a doctoral student at Walden University, studying educators' perspectives explore second and third-grade educators' perspectives on the challenges they face when integrating technology and how technology implementation influences literacy outcomes. The focus of my study is to explore educators' perspectives of technology integration in the second and third-grade educators. You have been selected to participate because of your knowledge and experience in one or both focus grade-levels. The interview process will take approximately 45-60 minutes. Open-ended questions will be asked to facilitate in-depth responses from you. My aim is not to evaluate your experiences, but rather to learn more about the implementation and integration of technology used in your facility. Your participation must be voluntary, as no compensation can be offered. You are free to withdraw from this study at any time during the interview process. Alphanumeric indicators or pseudonyms will be used to safeguard your identity. A summary of findings will be provided to you as a part of research member check process. You are free to contact me with any questions or concerns regarding your consent form or your participant rights. Obtain or verify email Written Consent (14-day response window)	
Script	

Ask Interview Questions

- Be cognizant of non-verbal cues
- Paraphrase questions as needed
- Ask probing follow-up questions as needed to get in-depth responses

1.Please describe the challenges you faced when initially integrating technology in your classroom.

2.Please describe two or three of the most frequent challenges or barriers you face when integrating technology in your daily instruction? How does this influence of the described challenges reflect on students' literacy outcomes?

3.As the more knowledgeable other (MKO) in your classroom and a knowledge of the needs of your students, what is/was your role in deciding what technology is used in the classroom? In deciding what technology used for literacy?

4.What factors do you believe most significantly hinder or promote the integration of technology within the literacy classroom? Please share some examples with me.

5.What factors do you believe most significantly hinder or promote literacy outcomes with digital resources? Please share some examples with me.

6.As the more knowledgeable other (MKO) (the one expected to facilitate the learning environment) how confident are you with the integration of technology and use of technology in the literacy classroom?

7. How do you use technology to enhance collaboration? Please share an example. (MKO)

8.What forms of digital technologies have you used in your classroom? Please describe how you integrate technology in your literacy instruction. Prompt: How is AR, i-Ready, and STAR used in your classroom and what are your experiences with these applications? What are your thoughts on how these influence literacy outcomes?

9.How would you describe technology-based instruction as a tool to enhance literacy outcomes? How can technology be used in the classroom to facilitate teaching and learning in literacy.?

10.Is there anything else you like to tell me about the challenges of integrating technology in the literacy classroom and/or how technology does or does not influence literacy outcomes?

Appendix B: Spreadsheet Sample

Interview Question 2: Please describe two or three of the most frequent challenges or barriers you face when integrating technology in your daily instruction?

Open codes	**Participant Excerpts**	**1st Cycle Descriptive**	**1st Cycle Categories**	**2nd Cycle Patterns**	**Quick Memos/My thoughts**
online safety, technology misuse, inappropriate site	My most frequent challenge I faced when integrating technology in my daily instruction is safety online with the students (trying to keep them on sites or programs they're supposed to be on.)	Support needed, online safety, appropriate sites	Developmentally Appropriate	Issues beyond educators' control	Inability to monitor students online is concerning. Students wander to other sites when unchecked