#GENERATION Z: A PHENOMENOLOGICAL STUDY EXPLORING THE EXPERIENCES OF ELEMENTARY TITLE I TEACHERS' USE OF EDUCATIONAL TECHNOLOGY IN THE 21st CENTURY CLASSROOM

by

Rachel Nichole Hernandez

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

Liberty University

2020

#GENERATION Z: A PHENOMENOLOGICAL STUDY EXPLORING THE EXPERIENCES OF ELEMENTARY TITLE I TEACHERS' USE OF EDUCATIONAL TECHNOLOGY IN THE 21st CENTURY CLASSROOM

by Rachel Nichole Hernandez

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

Liberty University, Lynchburg, VA

2020

APPROVED BY:

Dr. David Vacchi, Ph.D., Committee Chair

Dr. Kevin White, Ph.D., Committee Member

ABSTRACT

The purpose of this transcendental phenomenology was to describe the experiences of teachers' educational technology use in Title I elementary schools in Central Florida. The central research question in this study was: How do Title I elementary teachers in Central Florida describe their experiences utilizing educational technology in the classroom? The theoretical foundation for this study was grounded in Bandura's social cognitive theory, more specifically, teacher self-efficacy, which is a significant component of social cognitive theory. The design of this study was a transcendental phenomenology, a qualitative model that is most appropriate since I sought to make meaning from the descriptions of teachers' use of educational technology in the Title I classroom. The sample consisted of 15 teachers from Title I schools across Central Florida. I collected data using in-depth personal interviews, focus groups, and journal prompts. The data was analyzed through phenomenological reduction. Findings from this study revealed how the Title I teachers utilized technology in their elementary classrooms to prepare their students for college or careers. The research revealed the importance of technology training and administrative support for teachers to be able to integrate technology into their classroom curriculum effectively. Recommendations for future research include expanding the study to comprise more Title I schools and exploring the effects of remote learning for students should the need arise for distance learning.

Keywords: Title I schools, educational technology, technology integration, transcendental phenomenology, pedagogy, self-efficacy

Dedication

I dedicate this work with the deepest of love and gratitude to my husband, Frank. Without your tireless encouragement, I would not have been able to attain this goal. I cannot thank you enough for seeing my unspoken dream and encouraging me to pursue it. You pushed me relentlessly when I wanted to give up, and I would never have persevered through the tough times in this journey if not for your support. I cannot express to you the love and gratitude I feel. I would also like to dedicate this to my daughters, Sierra and Shayna. I appreciate your unwavering belief in me. I am forever thankful that I get to be your mother. I love you all more than words could ever possibly say.

Finally, I dedicate this study to those who want to be or do better. Especially students once told that they could not rise above. Our past mistakes do not define us. Oscar Wilde stated, “Every saint has a past, and every sinner has a future.” For those who were teenage moms or high school dropouts, those who grew up in broken homes with little to no support, let your “mess” be your message and rise above it.

Acknowledgments

First, I want to thank my Lord and Savior, Jesus Christ. I have had to turn to Him in prayer numerous times throughout this journey. There is no way that I would have made it thus far without His guidance, direction, and answered prayers.

I would also like to say a special thank you to my husband, Frank Hernandez. I would never have had the courage to begin this doctoral program without his love and belief in me. He decided to join me on this adventure and work toward his doctorate by my side. I am thankful that we were able to embark on this adventure together.

Finally, I would like to thank my friends and family for their undying support and understanding of my continuous absences. I was not present during many important times over the last few years. I am incredibly grateful for the loved ones who continued to cheer me on from afar.

Table of Contents

List of Tables

List of Figures

List of Abbreviations

Council for Accreditation of Educator Preparation (CAEP)

Information Communication Technology (ICT)

No Child Left Behind (NCLB)

Technological Pedagogical Content Knowledge (TPACK)

CHAPTER ONE: INTRODUCTION

Overview

This chapter contains six sections. The first section includes essential information related to the background of the research problem. This background offers support for the problem and assists in understanding previous research conducted on Generation Z, Title I students, and the integration of technology by Title I elementary school teachers. This research was significant to me both personally and professionally; thus, the second section of this chapter consists of the situation to self and the role of the researcher. The third section introduces the formal problem statement of the research and provides previous research on technology integration as support for the problem. The significance of the research study is included in the fourth section and consists of empirical, theoretical, and practical implications of the study. In the fifth section of the chapter, the researcher will reveal the research questions and explain their significance to the investigation. Finally, the sixth chapter will cover the definitions of the terms that are relevant to the study.

Background

As learning environments are becoming more technologically advanced, there is a growing need to adequately train educators to utilize this technology to augment classroom instruction. Today's teachers must prepare students to succeed in a global society. Since Title I students generally live below the poverty line, many may not have access to technology in the home (Suppes et al., 2013). It is up to the teacher to break down socio-economic barriers in the classroom and allow students to learn how to effectively utilize this technology in schools (Adams, 2014). By studying the experiences of Title I teachers' technology use in the classroom, scholars may begin to understand how attitudes toward this technology use can influence

perceptions of successful integration and whether there are any significant differences in these attitudes based on practical professional technology training.

Teachers' perspectives and attitudes toward technology integration understandably vary. Winslow et al. (2014) found that teachers are overwhelmed with all the tasks that must be completed in the classroom on any typical school day and may consider additional elements of technology as a hindrance. Olson (2000) argued that technology often does not fit into the current teaching culture and that it may even challenge the teacher's sense of efficacy. Teachers may feel that there is not enough time to be trained on how to implement this technology integration successfully. There is a lack of in-service training, and schools must address these issues if they expect their teachers to effectively take advantage of the learning potential that technology adds to curriculum and instruction (Winslow et al., 2014).

Historical Context

Technology has transformed education. Gone are the days of students sitting wordlessly in silent rows, listening to a lecture from the teacher in the front of the room. This traditional style of teaching is insufficient for Generation Z students. This generation is continuously utilizing technology daily. Generation Z describes youth born in the mid-1990s through the late 2010s and includes the current youth of American society (Turner, 2015). These students utilize technology regularly; therefore, educators must possess the strategies, knowledge, and skills needed to keep students engaged and prepared for the 21st century classroom (Price et al., 2016). New technological environments allow for instant gratification, as well as feelings of frustration when responses are not evident immediately (Shatto & Erwin, 2016). Teachers must conduct the learning process in a way that not only addresses the specific learning styles of the students but also cultivates their individual educational growth (Kolb, 1984). In the past, educators saw that

computers were slowly changing how they delivered knowledge. As classrooms evolved, teachers found ways to allow students to be self-directed learners, creating a more constructivist approach to gathering knowledge (Ringstaff & Sandholtz, 1994).

In classrooms of the past, there may have been one computer for all students to use. It is common for classes today to have numerous electronic devices for student use (Koivisto, 2014). Today's students can collect an extensive background of knowledge with their digital skills. However, if unguided, these skills cannot be considered digital competence (Hepp et al., 2015). It has become the teachers' responsibility to break away from the traditional delivery of teaching and learning and utilize technology for daily instruction in the classroom. Teachers working with Generation Z have a unique opportunity to address the learning styles of each student through the integration of educational technology. Teachers are also responsible for assisting students in becoming college and career ready. This preparation includes ensuring students will be competitive in their future education and workforce. Teachers should utilize technology to assist students in learning and sharing while also training them to adapt to the new social challenges that come with technology integration. Classroom activities that employ technology may encourage students to take a more active approach to their learning (Hepp et al., 2015).

Since the integration of technology is becoming increasingly important, researchers completed numerous studies on technological integration with a primary emphasis on middle and high school classrooms (Lee & Spires, 2009; Murphy et al., 2016; Robinson, 2016; Sen & Ay, 2017; Tilton & Hartnett, 2016; Urban & Falvo, 2016). Current research focuses on factors that influence the practices of technology integration, accessibility and the importance of technology, and Generation Z's attitudes on digital learning (Hsu, 2016; Mitchell et al., 2016; Persada et al., 2019). There has been little information regarding the successful integration of technology in

Title I schools, especially at the elementary level. Of the existing studies, many are either quantitative or focus on the barriers impacting the integration of technology (Harris et al., 2016; Pittman & Gains, 2015).

Social Context

With increasing advances in technology, students are becoming habituated to interacting and communicating in a world that is always connected (Turner, 2015). Constant connection is vastly different from how previous generations expressed themselves to one another or performed daily tasks without the use of technology. This rapid improvement of technology and the advances of electronic learning has resulted in a significant portion of students' lives consisting of mobile learning (Baek et al., 2017). With these technological advances, there is a growing emphasis on technology use in the classroom. Teachers are now utilizing technology across the curriculum and in all areas of delivery, including traditional classes, blended learning environments, online instruction, and the flipped classroom setting (Amstelveen, 2019). As teachers are utilizing technology in their classrooms each day, they are increasing students' learning, knowledge advancement, and engagement. This daily technology use is also improving teachers' technology practice and pedagogy (Minshew & Anderson, 2015).

Generation Z students, who are between the ages of four and twenty, make up most of the current student population (Turner, 2015). Teachers must appreciate the unique needs of this generation of students. These students are accustomed to new technology and do not relate to those who don't understand the ever-changing infrastructure in education (Linnes, & Metcalf, 2017). Generation Z is continuously wired and always tend to have their communication devices near. They strive to feel connected and instantly gratified (Turner, 2015). Current studies on Generation Z students focus on developing strengths in Generation Z college students or those

entering the workforce (Goh & Lee, 2018; Seemiller & Clayton, 2019). There is little to no research identifying how the technological characteristics of Generation Z relate to students in elementary schools and the perspectives of teachers who work with them. Keppler et al. (2014) explain that most research considers students in middle and high school to have greater access to technology when compared to elementary students. Since technology has globalized education, numerous studies have established the importance of educational technology schools (Carver, 2016; Union et al., 2015; Delgado et al., 2015). Few studies are examining how teachers in Title I elementary schools are integrating technology in the classroom.

Not only are Generation Z students unique in their educational needs, but students in Title 1 schools also have additional needs that teachers must meet. This unique population of students has its challenges and barriers that they must overcome. Title I schools contain at-risk students who have more issues with the integration of technology. There is a great inequity between traditional students and students who live below the poverty line when it comes to technology accessibility (Union et al., 2015). Title I elementary teachers must work to integrate technology into their instruction to assist in bridging the achievement gap (Suppes et al., 2013). This study seeks to extend and refine the existing knowledge of the integration of technology in Title I elementary classrooms.

Theoretical Context

Self-efficacy provides a valuable view of teaching and learning with digital technologies. Bandura (1977) described self-efficacy as an individual's belief in his or her capacity to execute behaviors needed to produce specific performance goals. Teacher self-efficacy is an underlying theory within Bandura's (1977) social cognitive theory that can assist in explaining how the teachers' feelings of competence can influence the perceptions toward the successful integration

of technology. Teachers' confidence in their technology awareness and technological abilities can impact how they utilize educational technology in the classroom (Wang et al., 2014). While most teachers understand that there is a wealth of technology available for instructional use in the classroom, many often do not take advantage of these opportunities. Teachers identify the reasons for not using educational technology as lacking the resources, have little to no time to experiment with the technological tools, insufficient training, and philosophical beliefs about technology use (Winslow et al., 2014). Teachers' lack of self-efficacy in the integration of technology is one factor that contributes to the underutilization of technology for learning. Rehmat and Bailey (2014) maintain that developing self-efficacy in technology integration requires a positive attitude and strong motivation. While teachers may have this positive belief and attitude about technology integration, they may not reflect these beliefs in their actual instructional practices (Gunter & Reeves, 2017).

Mishra and Koehler (2006) created a set of knowledge teachers need to instruct students by utilizing technology effectively. This knowledge set is the Technological Pedagogical Content Knowledge (TPACK) framework. This theory can explain how educators must teach students within the pedagogical, content, and technological knowledge contexts. While teachers may assume that students know how to use technology effectively since they are immersed in it daily, students may not understand how to apply this technology to their learning. Title I students are at an even more significant disadvantage as they do not always have access to educational technology tools or applications, nor are they taught how to use this technology to empower their learning (Suppes et al., 2013). Since technology has become an essential part of students' lives both inside and outside of the classroom, teachers must utilize technology in their instruction,

then teach students to use this same technology during the learning process. The TPACK framework can assist teachers in accomplishing this effectively.

To meet students where they are, teachers must tap into their digital world and engage them academically using educational technology (U.S. Department of Education, 2010). Utilizing the TPACK framework and understanding how Bandura's (1977) self-efficacy concept can empower teachers to integrate technology into their classrooms to assist students' in the learning process will extend or refine existing knowledge and research.

Situation to Self

This research was of considerable significance to me, both personally and professionally. I have taught for over 15 years in Title I schools. I currently work with preservice teachers as an adjunct professor, teaching classes in educational technology, classroom management, and diverse populations at a local private university. I am certified in elementary education, educational leadership, and have an endorsement in ESOL. My experiences as a Title I elementary classroom teacher and college technology professor had led me to identify and understand the need for teacher technology acceptance for classroom integration and professional development. I believe that technology is an indispensable component of education today, and it is essential that teachers train students on how to utilize technology to deepen understanding and support their learning. I know firsthand the numerous obstacles and barriers that may hinder teachers' acceptance of technology integration, as well as how self-efficacy can impact successful technology use in the classroom. It was my goal to give a voice to teachers who struggle with these barriers. I also wanted to acknowledge those who have overcome challenges in technology integration. Understanding these challenges will benefit administrators, teachers, and other educational stakeholders. This research will enable these stakeholders to

understand how to integrate technology so that all students, especially those in Title I schools, may receive the most effective education possible. The design I chose to implement for this study was a transcendental phenomenological investigation since I sought to understand the essence of the lived experiences of Title I elementary teachers and wanted to report on their independent perceptions and insights (Moustakas, 1994). It was my hope that the descriptions published in this research would fill a gap in the literature that exists on the experiences of teachers' use of educational technology in the Title I elementary classroom.

A social constructivist framework was the foundation of this study. Constructivism is a form of epistemological paradigm that is interpretive and deals with human interactions (Creswell, 2018). The constructivism paradigm guided this study due to the focus on interpretations of the individual as well and the use of triangulation to collect data until fully immersed (Creswell, 2018; Lincoln & Guba, 1985). Since it was my goal to understand the research problem by describing the various perspectives of my participants, the constructivist framework was most appropriate (Patton, 2015). As with any epistemological study, I tried to get as close as I possibly could to Title I teachers who participated in this research and worked to ensure that I did not separate their experiences from the work environment (Creswell, 2018; Patton, 2015). A researcher who utilizes the epistemological assumption relies heavily on direct quotes from the participants of the study (Creswell, 2018). Understanding that all participants will have different experiences and descriptions of their individual and unique perspectives, I researched an ontological assumption, as well (Creswell, 2018). Ontology is the nature of reality, what is, and what is possible (Lincoln & Guba, 1986). My previous and current teaching experiences allowed me to understand the benefits and challenges that the educational environment may contain. Therefore, I sought to get close to the participants to understand the

essence of their lived experiences better to describe teacher perceptions accurately.

Problem Statement

Students in Title I schools are generally known to be economically disadvantaged, and many live well below the poverty line. Warschauer et al. (2014) found that students in Title I areas usually come from low-income households and do not have access to technology outside of the educational setting. Since technology contributes to the global development and diversity of 21st-century classrooms, it is considered a fundamental foundation for more complex learning. All students must have access to technology so that quality teaching and meaningful, responsive, and culturally relevant learning can occur, despite the students' socio-economic background. The problem is that Title I elementary students are already at a disadvantage due to economic and academic challenges and may not have access to technology outside of the classroom. Additionally, these students may not know how to effectively utilize technology that is necessary to be college or career ready in the 21st-century world (Kayalar, 2016; Kermani & Aldemir, 2015).

Today, technology integration is mandatory for all schools and classrooms (CAEP, 2016). Educators must train students for a 21st-century world. Teachers must have the passion and knowledge to pass this technology onto their students (Kayalar, 2016). Not only must teachers utilize this technology in the planning and implementation of the curriculum, but they must also effectively train Title I students in the use of this technology to prepare them for the future sufficiently. Kermani and Aldemir (2015) suggest that learning through educational technology at an early age will not only increase students' engagement but also assist in the preparation of their future educational needs. Studies have suggested that many teachers are not taking full advantage of technology and the potential that it may have to positively transform a

classroom (Agbo, 2015; Habib & Johannesen, 2014). This research utilized a transcendental phenomenological approach to describe Title I teachers' experiences using educational technology in elementary classrooms. Further studies need to be directed toward Title I teachers' learning to use technology and subsequently training their students who may not have access to the technology outside of the classroom (Urban & Falvo, 2016).

Purpose Statement

The purpose of this qualitative transcendental phenomenological study was to describe the experiences of teachers' educational technology use in Title I elementary schools in Central Florida. During the research, educational technology use was defined as the technology used to enable or facilitate classroom learning. Digital technologies are an essential asset for schools due to the strategic support technology offers to teaching and learning (Dube & Scott, 2017). Dube and Scott (2017) explored studies that discovered how limited technology use led to a second-order digital divide. The second-order digital divide covers the inequalities in skills, and there is a need to bridge this gap and start building these technological skills through continuous training for disadvantaged students (Valenduc et al., 2010). This problem may negatively impact Title I students, school, and community stakeholders, as well as the initiatives of increased technological investment. The ability to create with the use of technology can assist in the academic success of students in the k-12 classroom (Urban & Falvo, 2016). Therefore, there was a need to uncover and obtain a more in-depth insight into Title I teachers' perspectives of technology use due to the limited literature discussing this problem within the elementary classroom context. The key theory that framed this research was Bandura's theory of self-efficacy, a construct in the social cognitive theory. Bandura's (1977) theory of self-efficacy refers to a teacher's belief in their capability to execute behaviors needed to reach specific goals.

In this instance, the goal would be the successful use and integration of technology. Since this study focused on the perceptions of Title I teachers' experiences with technology integration, the theory of teacher self-efficacy played a role in these perceptions and attitudes while impacting the necessary training of students on this technology.

Significance of the Study

Technological advancements have directed changes in the expectations placed on K-12 teachers (O'Neal et al., 2017). Fox-Turnball (2015) identifies the importance of looking deeper into the experiences of teachers in elementary schools and their understanding of the significance of technology integration. This study added awareness to Title I schools about the importance of technology integration in the classroom. The comprehensive exploration of the experiences of teachers' technology use in Title I elementary classrooms added to the existing literature offered valuable understanding to the topic of technology integration by giving a voice to Title I teachers who utilize this technology in their learning environment.

Empirical

This research contributes to the existing literature on technology integration in K-12 schools by adding insight into the experiences of instructors' use of educational technology in the Title I elementary classroom. Current studies indicate that there is great importance placed upon the effective integration of technology. For example, Mitchel et al., (2016) studied the perceptions of teachers concerning the importance of technology accessibility in the curriculum, clarifying how teachers gained experience in the classroom and became less likely to utilize technology in their teaching. Another study recognized how the use of technology increased effectiveness in language arts classes, elaborating on how technology use increased educator pedagogy and student achievement (Keppler et al., 2014). This increase of pedagogy adds to the

existing literature on the value of the TPACK framework and how teachers who utilize this model are more effective in the integration of technology for learning (Mishra and Koehler, 2006).

Additionally, Dube and Scott (2017) investigated the perspectives of university students on the use of digital technologies as teaching and learning tools. Finally, a study conducted by Domingo and Garganté (2016) sought to explore the use of technology in primary education in Spain. While this research remained fixated on education in general K-12 classrooms, colleges, or perspectives in another country, none had explicitly examined technology use at the elementary level or in a Title I environment. The research in this study sought to add to the current literature by giving a voice to elementary teachers and their experiences with technology in Title I classrooms. I hoped that this unique group of educators would be able to describe their perspectives and experiences so that additional advancement of technology instruction at the Title I elementary level can occur.

Theoretical

The theory that this investigation contributed to is Bandura's (1977) theory of self-efficacy. Generation Z students thrive on technology, and it has become an essential part of their lives, both socially and academically. Data gathered in the investigation provided a meaningful view of teachers' confidence in integrating technology into the Title I classroom, therefore adding to the theory of self-efficacy. The principles of self-efficacy include the idea that lacking confidence or belief in one's abilities may hinder the achievement of specific goals; in this case, the effective integration of technology (Bandura, 1977). This theory was evident in identifying how teachers felt about professional development and training and how training may impact the teacher's attitude about integrating technology into the Title I elementary classroom.

Practical

This study gave valuable evidence to those invested in Title I schools, including principals, faculty and staff, and other community stakeholders. This investigation increased the understanding of how technology can be utilized in Title I classrooms by both teachers and students. The goal in many Title I schools is to bridge the achievement gap created by income inequities for economically disadvantaged students. The low socio-economic area where this study occurred will allow administrators at the school and district level to understand how the use of technology can improve the learning and academic outcomes for Title I students. Furthermore, while my study focused on Central Florida, the data gathered may assist in a deeper understanding of the professional needs that teachers have when it comes to technology training for faculty and staff nationwide. O'Neal et al. (2017) explain that while it is evident that most educators see the value of technology for instruction and learning, they need more guidance on how to integrate technology into the classroom effectively. This study lends to the perspectives of these teachers as they voice their experiences with technology integration in the Title I classroom.

Research Questions

One central research question and three sub-questions guided this study. The researcher corroborated the questions through the theoretical framework of Bandura's (1977) self-efficacy construct. I sought to gather in-depth descriptions of the experiences of Title I elementary teachers' use of educational technology by asking the central question. I wanted to describe teachers' perceptions of technological awareness and their perceived ability to integrate current technology. Finally, I explored the perceptions of teachers' experiences with professional

development and training and how the integration of this training impacted their views on technology integration in the classroom.

Central Research Question

How do Title I elementary teachers describe their experiences utilizing educational technology in the classroom?

The central question framed this investigation. I wanted to give a voice to Title I elementary teachers in Central Florida by allowing them to describe their experiences with educational technology use in the classroom. For Title I teachers to give honest and genuine feedback, I purposely utilized an open-ended and non-directional central question. It was my goal to attain powerful and precise descriptions of personal lived experiences of Title I teachers through interviews and focus groups (Moustakas, 1994). This question makes connections to the theory of self-efficacy (Bandura, 1977). Due to the goal of the investigation being to describe how teachers are utilizing technology in the classroom, it was critical to understand how teachers' self-efficacy can empower or impede a teachers' motivation to incorporate technology and teach their students to use the technology for learning. When a teacher feels confident in their ability to utilize and incorporate technology into their instruction, they become more motivated and enthusiastic about the technology in use and the positive effects it can have on learning. This mindset will not only influence the success of technology integration in the classroom, but it will also increase student motivation in learning to utilize the technology for the purpose of knowledge acquisition (Tilton & Hartnett, 2016).

Sub-Question 1

How do Title I elementary teachers describe their technological awareness and their ability to integrate current educational technology into their classrooms?

The first sub-question was developed to build on the central question by empowering teachers to describe how they perceived their technological awareness. Technological awareness is a skill that refers to being mindful of current technology and one's ability to identify and understand the usefulness of such technology in education (Hammonds et al., 2013). Hundley and Shyles (2010) examined how awareness of digital devices can contribute to the effective use of technology and self-efficacy. This question provided an honest reflection of the teachers' self-efficacy. Bandura (1977) described self-efficacy as how well one can execute courses of action needed to deal with prospective situations. Allowing teachers to identify how they perceive their technology awareness and how they view their ability to integrate technology into their instruction gave a greater understanding of the importance of self-efficacy.

Sub-Question 2

How do Title I elementary teachers describe their experiences with professional development and training initiatives designed for educational technology integration in the classroom?

The second sub-question continued to develop the ideas of Bandura (1977) and self-efficacy. This question sought to provide Title I elementary teachers the chance to describe their experiences with professional development and training initiatives that assist in the integration of technology in the classroom. Current research identifies the ways that specific training and professional development increase teacher technology self-efficacy (Minshew & Anderson, 2015; Tilton & Hartnett, 2016). Self-efficacy has become a highly effective predictor of an individual's motivation and learning (Zimmerman, 2013). Exploring the experiences of Title I teachers and professional development designed for technology integration allowed these teachers to identify any connections to this training and their feelings of self-efficacy. Allowing teachers to describe their experiences with this professional development provided rich, deep,

and accurate perceptions of their views on training and how it may or may not have assisted them in gaining self-efficacy (Moustakas, 1994).

Sub-Question 3

How do Title I elementary Teachers describe the strategies they use to assist students in learning to utilize educational technology to enhance knowledge acquisition effectively?

The last sub-question was developed to build further on the central question by seeking to understand how, after technological training and professional development, teachers would progress and utilize specific strategies to instruct students on effective technology use. Teachers may be offered training incentives that will help them to learn to use technology in the classroom; however, this question sought to build further on the central question by identifying ways in which the teachers will use new strategies to train Title I students to utilize this technology so that they may adequately prepare for the future. This question provided teachers with the opportunity to describe the importance of identifying and reflecting on practical strategies that assist students in learning to utilize this new technology to increase academic achievement and prepare them for college and careers of the 21st century and assist in bridging the second digital divide. This inquiry reflected the self-efficacy theory in that teachers' confidence increases motivation, which in turn can increase a students' confidence and motivation to utilize the integrated technology successfully. Self-efficacy plays a significant role in determining students' chances for success. Bandura (1977) names four sources for self-efficacy beliefs; these are mastery experience, vicarious experiences, verbal persuasion, emotional and physiological states, and imaginal experiences. Teachers must utilize these sources when training students (Bandura, 1977). Teachers are influential people in the lives of students and can reinforce their beliefs that they have what it takes to be successful. Students'

self-belief in their abilities, or self-efficacy, will play a role in the successful technology training for the purpose of learning.

Definitions

1. *Achievement gap* – The gap in achievement between students due to a lack of educational experiences and limited resources (Adams, 2014).
2. *Digital Natives* – Another name for Generation Z. Prensky (2001) describes this group as those born after 1980 who have grown up surrounded by digital technologies and are more comfortable utilizing technology than previous generations.
3. *Digital Technology* – Any electronic device that is digitally based (Wang et al., 2014).
4. *Educational Technology* – digital technology used to facilitate learning (Downes & Bishop, 2015).
5. *Economically Disadvantaged* – students whose household income is below average (Rowsell et al., 2017).
6. *First Digital Divide* – The gap between those who have access to technology tools and those who do not (Rowsell et al., 2017).
7. *Generation Z* – considered the current generation, which is dominated by technology (Persada et al., 2019).
8. *Integration* – The use of technology in the classroom aligned with the goals of teaching so that its use is almost transparent (Winslow et al., 2014). For the purpose of this study, integration refers to technology used for the purpose of teaching and learning.
9. *Pedagogical Content Knowledge* – Teachers' understanding of how to formulate explanations, represent content, and response to misunderstanding. (Nind & Lewthwaite, 2018).

10. *Second Digital Divide* – The gap between those who have technology skills and opportunities to utilize them and those who do not (Van Dijk, 2003).
11. *Student-Centered Learning* – Teaching where students are in control of and can facilitate their own learning (Dole et al., 2015).
12. *Teacher-Centered or Traditional Learning* – Instruction, where the teacher is the center of the learning process and may not involve the development of critical thinking or problem-solving skills (Dole et al., 2015).
13. *Teacher Self-efficacy* – Self-efficacy occurs when a teacher has confidence in their capabilities to lead students to success (Bandura, 1977).
14. *Technological Pedagogical Content Knowledge* – The framework created by Mishra and Koehler (2006) that was developed to explain the clusters of knowledge that teachers must utilize when integrating technology into the curriculum.
15. *Title I Schools* – Title I schools are schools that have a large population of economically disadvantaged students. Title I resources assist these students in acquiring a high-quality education and ensuring that children have a fair and equal opportunity to be successful (Tirrell-Corbin & Cooper, 2014).
16. *Transformational Leadership* – Leadership that guides change through inspiration that will assist in the growth of an organization (Choi et al., 2017).

Summary

The purpose of this qualitative transcendental phenomenological study was to describe the experiences of teachers' educational technology use in Title I elementary schools in Central Florida. It was my goal to bring awareness to how Title I teachers use their knowledge of technology to create a more student-centered educational environment. Furthermore, I wanted to

provide a deeper understanding of how practical and useful training can lend to teachers' self-efficacy. Finally, I sought to identify the perceptions of the usefulness of digital technology in teaching and learning. This investigation was necessary because Title I elementary students are already at a disadvantage due to economic and academic challenges and may not have access to technology outside of the classroom. Moreover, they may not know how to effectively utilize technology that is necessary to be college or career ready in the 21st-century world (Kayalar, 2016; Kermani & Aldemir, 2015). The perceptions and lived experiences of Title I teachers can create an awareness that will assist in identifying and overcoming barriers in technology integration.

CHAPTER TWO: LITERATURE REVIEW

Overview

This chapter contains a review of the literature for this study. The first section in this chapter includes essential information related to the theoretical framework that was the foundation for this research. This framework provided a conceptual understanding of the perspectives of teachers' technology use in the classroom and how it related to self-efficacy. The first theory was the social cognitive theory with a focus on teacher self-efficacy. The next framework was the Technological, Pedagogical, Content (TPACK) model, a more modern approach. These theories connected to the research questions within this study and provided a theoretical understanding of the perspectives of teachers' technology use in the classroom and how it relates to teacher self-efficacy. The next section of this chapter includes the literature related to this study. In this section, I reviewed the current literature concerning Generation Z and Title I students, emphasizing their unique learning and technological needs. I also considered previous generational cohorts so that I may better recognize the generational shifts, before and after this infiltration of technology. Within this review of the literature, I focused on research that assists in a better understanding of the digital divide and its impact on student academic success. The final section explores the legislature related to technology integration and identifies the benefits and barriers of the integration of technology into the modern-day classroom.

Theoretical Framework

Two theories guided the foundation for this study. The first theory was Bandura's (1977) social cognitive theory, which suggests that learning happens within a social context, with reciprocal interactions between the individual, behavior, and the environment. A substantial element of social cognitive theory is teacher self-efficacy, which focuses on a teacher's level of

confidence in their instructional capabilities (Bandura, 1977; Zee & Koomen, 2016). Teachers' self-efficacy is defined as one's sense or judgment of his or her abilities to generate desired student outcomes in teaching (Bandura, 1977; Brown et al., 2014; Tschannen-Moran et al., 2001). According to the social cognitive theory, a teacher's beliefs about their individual ability to accomplish specific educational goals can contribute to both positive and negative instructional outcomes (De Smul et al., 2018). Teachers' beliefs about their independent capabilities can fluctuate based on the given task, level of quality, and varying situations (Dellinger et al., 2008; De Smul et al., 2018). The idea that a teacher's confidence in their capability to positivity impact student learning is critical to the actual success or failure of a teacher (Boulton, 2014; Brown et al., 2014; Henson, 2001). Teacher self-efficacy played a significant role in my research as my first sub-question asks teachers to reflect on their perceptions of technology awareness and their ability to integrate technology effectively into the classroom. In the present study, I sought to investigate teachers' feelings of competence in the implementation of educational technology by examining their self-efficacy beliefs.

The second theory that underpinned this study was the technological pedagogical content knowledge (TPACK) framework. Mishra and Koehler (2006) added the technological component to Shulman's (1986) Pedagogical Content Knowledge construct as a modeling element. By simultaneously addressing content knowledge, pedagogical knowledge, and technology knowledge, the researchers created a framework for technology integration into the modern curriculum. The TPACK theory provided an outline for the technological integration aspect of my study and addressed the importance of utilizing technology for content delivery in the 21st-century classroom. The current research explored professional development and training initiatives designed for the integration of educational technology in the Title I elementary

classroom. The focus of the TPACK framework guides professional growth. Organizations can associate their technological training and academic programs through TPACK's three areas; technology knowledge, content knowledge, and pedagogical knowledge (Elliott, 2018). The end goal is a union of all three contexts when including technology into the modern curriculum.

Social Cognitive Theory

Bandura's psychological perspective focuses on the influence that the social environment can play on an individual's motivation, learning, and self-regulation (Schunk & Usher, 2019). One distinguishing feature of social cognitive theory is the importance of social influence on external and internal social reinforcement (Bandura, 2001). Schunk and DiBenedetto (2020) clarified that what an individual thinks or believes will affect their actions and environment. These actions can modify their thoughts and settings or situations. Finally, the environment can impact an individual's actions and thoughts. The personal, behavioral, and environmental processes are reciprocal since each affects the other (Bandura, 1977; Schunk & Usher, 2019). I embedded an essential factor of the research study's theoretical component in sub-question 2, where I asked participants about professional development and training initiatives designed for technology integration. Since environmental processes can impact a teachers' actions and thoughts, adequate support may also influence perceptions of effective technology use in teaching and knowledge acquisition.

The social cognitive theory highlights the importance of perceiving and modeling the behaviors, attitudes, and emotional responses of others. Bandura (1977) explained this as humans acting as their own agents of change, who are deliberately in charge of their actions. During learning, individuals may look for informative feedback in order to formulate thoughts and feelings about the kinds of behaviors that will help them to be successful. This feedback will

later influence their future actions (Bandura, 1977; Cox & Graham, 2009). An individual's agency may be affected by their efficacy and eventually influence their decisions, effort, fortitude, perseverance, and emotional state (Bandura, 1977; Henson, 2002). All of which can impact teacher self-efficacy and the overall successful integration of educational technology.

The foundation of Bandura's theory focuses on the belief that individuals seek a sense of intervention or the acceptance that one may have a significant influence on critical events in their life by setting goals and executing strategies to reach them. These individuals will continue to monitor their progress and readjust these strategies when necessary (Schunk & DiBenedetto, 2020). When one is in an agentic state, they are obeying authority. A fundamental part of this agentic viewpoint is one's perception of their own capabilities to learn and accomplish actions at specific levels. One of the most critical internal motivational processes in the social cognitive theory is self-efficacy. Self-efficacy stems from evaluative and goal-oriented self-reflection (Bandura, 1977; Schunk & DiBenedetto, 2020). When examining teachers' perceptions of technology integration and self-efficacy, it is beneficial to focus on the three factors of social cognitive theory; personal, behavioral, and environmental (Bandura, 1977; Boulton, 2014). These social cognitive factors may influence teachers' perceptions of self-efficacy and impact technology integration in the classroom.

Teacher Self-efficacy

Teacher self-efficacy is a significant component of social cognitive theory. This theory emphasizes human agency – the idea that individuals can exercise control over actions that affect their lives (Bandura, 1986, 1997; Zee & Koomen, 2016). Teacher self-efficacy, which is the teacher's level of confidence about their ability, can be significantly influenced by their past experiences or current school culture (Brown, Lee, & Collins, 2014). When focusing on

technology integration, factors that may influence teacher self-efficacy include the support of the administration, and adequate training. This study explored Title I teachers' engagement with educational technology and included an emphasis on their self-efficacy beliefs toward technology integration. Furthermore, my research addressed the support needed by teachers during technology integration and how effective training initiatives and professional development during the integration process created a positive and impactful school culture.

Self-efficacy connects motivation, constructivist thinking, and social cognitive theory. Bandura (1977) explains that efficacy refers to an individual's perceived ability, which the teacher determines related to a specific task. Self-efficacy beliefs can determine a teacher's professional practices (Boulton, 2014; Emmer & Hickman, 1991; Gibson & Dembo, 1984; Han & Weiss, 2005; Wertheim & Leyser, 2002). These self-efficacy beliefs will govern the way in which individuals feel, think, and motivate themselves to behave (Bandura, 1997). A person's perceptions or thinking about their ability connects to their motivation. What's more, teachers' self-efficacy is associated with students' academic growth and achievement (Brown et al., 2014; Cantrell et al., 2013). An educator's efficacy has been associated with their disposition and teaching practice and can also influence student motivation, classroom management strategies, and increase academic instruction time (Emmer & Hickman, 1991; Gibson & Dembo, 1984; Woolfolk & Hoy, 1990). The self-efficacy of the teachers in my study determined their success, or lack thereof, in the effective integration of technology into the Title I classroom curriculum.

When teachers have a high sense of instructional efficacy, they tend to be more resilient in their teaching and have higher expectations for their students (Brown et al., 2014; Pendergast et al., 2011). Teacher self-efficacy is a critical motivational construct that shapes teacher effectiveness and the quality of student learning. Brown, Lee, and Collins (2014) clarified that

teachers have much to learn about how one may develop teacher self-efficacy. My research will hopefully add to the theory of teacher self-efficacy by lending a greater understanding of how technology training and professional development may increase teachers' feelings of self-efficacy and how these beliefs may influence effective technology integration in the classroom. Additionally, within the social cognitive theory framework, feedback and positive reinforcement are substantial factors in the development of teacher self-efficacy. Therefore, this study addressed how teachers perceived the support they received in the form of professional development and training initiatives designed for educational technology integration in the classroom. The training and support experiences, which may lead to increased teacher self-efficacy, may be linked to the successful integration of technology and improved technological skills for students. The end goal of a decrease in the second digital divide can be seen in Figure 2.1 below.

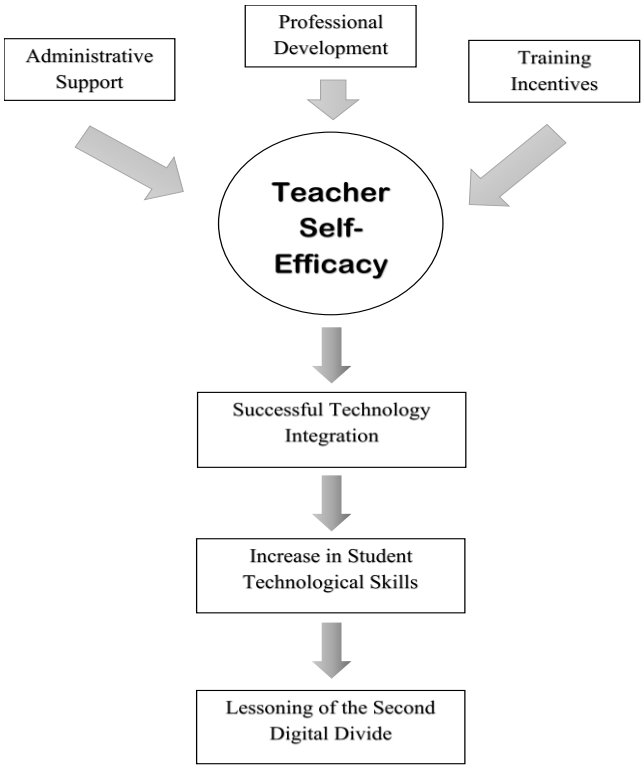

Figure 2.1: Technology Teacher Self-Efficacy Model

Technological Pedagogical Content Knowledge

A modern framework that is necessary for today's technologically enhanced classrooms is the Technological Pedagogical Content Knowledge (TPACK) model. This framework allows teachers to understand the types of knowledge essential to effective teaching with technology (Chai et al., 2013; Mishra & Kohler, 2006). Teachers can now create more technological pedagogical content knowledge as this framework gives educators specifications for the types of teacher knowledge necessary for effective technology integration (Koh et al., 2015). Teachers need each component of the TPACK framework to integrate technology into the classroom curriculum effectively (Cox & Graham, 2009; Koh et al., 2015). This knowledge is critical due to the emphasis of utilizing technology to foster pedagogical improvements that address 21st Century competencies.

The components of TPACK:

Content Knowledge (CK) – The content knowledge is the subject matter that the teacher desires for students to learn. Within this component, the instructor must have a greater understanding of the concepts, content, theories, and procedures to be effective (Mishra & Koehler, 2006; Pamuk et al., 2015).

Pedagogical Knowledge (PK) – Pedagogical knowledge is the art and practice of teaching or transmitting knowledge in a stimulating and motivating manner. Pedagogy refers to the effectiveness of teaching on students' learning. Shulman (1986) asserts that the principles and strategies of teaching, classroom management, learning, and motivation are components of pedagogical knowledge. Teachers must have classroom management skills, knowledge of teaching methods, understanding of assessments, be structured, and able to adapt quickly (Mishra & Koehler, 2006).

Technology Knowledge (TK) – In the TPACK framework, researchers identify technology knowledge as the tools and materials, as well as the technical skills that one must utilize within the teaching and learning process. Emerging technology (software and hardware), as well as traditional technologies (books and blackboards), are included in this component. Instructors are not only expected to be knowledgeable on these technologies but should also be able to effectively utilize them during instruction and across all forms of curricula (Graham et al. 2009; Mishra and Koehler 2006; Pamuk et al., 2015). This knowledge can assist teachers as they combine the use of technology with teaching. The current study sought to address the experiences that teachers had with any technological professional development needed to assist in effectively integrating technology into the classroom.

Pedagogical Content Knowledge (PCK) – Pedagogical content knowledge includes how the teacher represents and formulates the content that makes it understandable to the students (Shulman, 1986). A student's experiences, background, preconceived ideas, or misconceived ideas may impact how easy or difficult it is to learn specific content. PCK is the knowledge for facilitating student learning so that the student can understand the content within contextual conditions (Koh et al., 2015; Pamuk et al., 2015). Generation Z students may need a teacher to represent and formulate content in a different manner than when they were students themselves. Technology plays a significant role in the everyday lives of Generation Z students, and instructors must understand ways in which to utilize this technology across the curriculum. Teaching requires more than simply delivering content, new information, or knowledge to a student. Shulman (1986) explained that a teacher's interpretation and transformation of content is only the beginning. Teachers

must deliver the material in a way that the students can absorb, relate to, and comprehend in a meaningful way.

Technological Content Knowledge (TCK) – Technological content knowledge designs and utilizes technology to transform, represent, and enrich specific content through technology. Teachers must be able to select and use appropriate technology to effectively communicate a given curriculum (Harris & Hofer, 2009; Pamuk et al., 2015). This approach is not only using technology in the teaching and learning process, but understanding ways to enrich specific knowledge acquisition utilizing appropriate technology. Teachers must understand how to utilize technology to offer new and innovative ways to deliver content to their students.

Technological Pedagogical Knowledge (TPK) – Technological pedagogical knowledge is understanding how to enhance the practices of pedagogy with the integration of appropriate technology. Much like TCK, teachers must identify ways to support instruction with the effective use of explicit technology (Graham et al., 2009; Harris & Hofer, 2009; Koh et al., 2010; Mishra & Koehler, 2006; Pamuk et al., 2015).

Technological Pedagogical Content Knowledge (TPACK) – Technological pedagogical content knowledge embodies the way in which a teacher utilizes technology to enhance or support educational strategies used to deliver curriculum (Graham et al., 2009; Pamuk et al., 2015). While TPACK is a knowledge base drawn from ideologies of three main knowledge bases (content, pedagogy, and technology), it has an exclusively unique structure that goes beyond the other components. TPACK is the intersection of an educator's knowledge of the curriculum, their use of effective pedagogy, and an understanding of effective technology (Harris & Hofer, 2009). Koh et al. (2010)

described TPACK as knowing how to utilize technology to enhance teaching methods for different curriculum content. Teachers must understand strategies that can combine this content, pedagogical knowledge, and curriculum content in various forms so that the curriculum is more readily comprehensible (Harris & Hofer, 2009).

Within these components, teachers can apply the knowledge of all these constructs to their teaching and formulate technology integrated lessons that promote learning in the 21st-century. This research study sought to gain a better understanding of the experiences and perceptions of Title I teachers on this technology integration in the modern-day classroom. With the increasing demand for technology use in all learning environments, TPACK is a critical part of education in today's schools. Educators must be knowledgeable about TPACK to incorporate technology into the classroom curriculum effectively. Generation Z students are familiar with technology use and more apt to learn from technology than traditional lecture-style teaching. The figure below represents the TPACK framework.

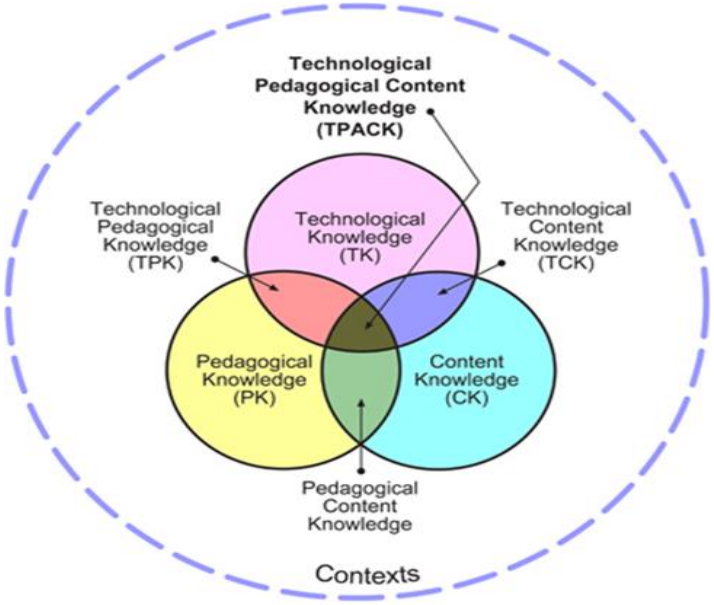

Figure 2.2: Technological Pedagogical Content Knowledge Framework (Mishra & Koehler, 2006)

Related Literature

Technology is an indispensable part of everyday life and has become a vital component of the learning process, as well. Each day, students and teachers are utilizing new technologies in innovative ways (Carver, 2016). Generation Z students must be prepared for the 21st world, especially Title I students, as many have little to no access to technology outside of the classroom (Cardullo, 2019). This limited access, termed the digital divide, can cause inequities in the educational process and overall academic achievement of students from low-income families. This current body of literature examines the generational shifts that have led to today's current student population, as well as the characteristics of Generation Z and Title I students, more specifically, their unique needs when it comes to learning and technology. The literature explored the legislation that has impacted technology integration in the classroom. Finally, the review of the research highlighted the benefits and barriers to technology integration in the classroom for instruction and learning.

Generational Shifts and the Introduction of Technology

Today's students are unlike any other cohort of students the world has ever known. These students do not acquire knowledge in the same manner as many of their educators. Instructors must understand that each generation learns differently based on life experiences, family dynamics, values, culture, and technological advancements (Turner, 2015; Seemiller & Grace, 2017). Teachers must know their students. No matter which academic level or grade currently being taught, educators must understand the characteristics of the students in their classrooms and be able to address their unique educational needs.

There are known generational shifts that occur within each cohort of students coming through the educational system. Each generation has had to overcome different challenges and

barriers. The various obstacles students encounter come from the characteristics of the generation in which they belong. For example, traditionalists were born from 1900-1945 and are deemed the oldest generation in American Culture (Wiedmer, 2015). This group is associated with World War II, the invention of the radio, Hitler's reign, and the beginning of the Korean War.

Moreover, this generation respected authority, honored family values, and were motivated by money and position. They tend to work hard and consider debt to be embarrassing. Wiedmer (2015) went on to explain that traditionalists value hard work and are determined, taking pride in being generous and thrifty. Traditionalists viewed education as a dream and learned best through traditional, instructor-led teaching, seeking recognition from rewards, certificates, plaques, or trophies. Since many traditionalists lived during the Great Depression, they mostly went into the military or an early marriage with children. Education was a privilege that few were able to attain.

Baby Boomers are the generation born in the baby boom after World War II, 1946-1964. This generation grew up in a time of prosperity and after a major war. The 1960s defined the generation with John F. Kennedy, Martin Luther King, and Vietnam. Wiedmer (2015) exemplified Baby Boomers as extremely hard workers and committed to professional and personal goals. They are described as goal-oriented, competitive, and equate their work and positions with self-worth. As young adults, they may have been the first in their families to be educated (Wiedmer, 2015; Hennekam, 2016). This generation enjoyed a higher level of education than traditionalists, and 29% hold a bachelor's degree or higher (Wiedmer, 2015). Traditional teaching through textbooks and lectures was the norm.

Technology began to come into the picture with Generation X. Generation X as born after the Post-World War II Baby Boom, 1961-1981. Schroer (2008) identified this generation as "lost" or "latchkey" kids exposed to divorce and daycare, experiencing broken families and absent parents. Some were considered workaholics, driven by authority and ranking. This generation witnessed the fall of the Berlin Wall, the splitting of the Soviet Union, AIDS, and the death of John Lennon (Schroer, 2008; Wiedmer, 2015). They experienced the emergence of music videos, heavy metal, and hip-hop music (Wiedmer, 2015). Generation X is highly educated and family-oriented. They strive to maintain a balance between work and family life and are less loyal to their career. Described as independent thinkers, artists, and geeks, Generation X tends to be face-paced and engaged in interesting or exciting work (Lissitsa & Kol, 2016). As students in the 80s and 90s, they were unable to carry their large computer to campus and spent many nights waiting in line at the library to log on. They took notes in the margins of a notebook, textbooks were heavy, and the internet was not readily available until the late 90s (Lissitsa & Kol, 2016; Schroer, 2008). Additionally, typing and printing were completed in the library (Wiedmer, 2015). Socializing with peers had to be planned, and individuals needed to solidify a specific time and place since last-minute adjustments were difficult due to lack of cell phones during this era (Schroer, 2008).

The next generation, Generation Y, is often referred to as Millennials. They are the internet generation and constitute the largest generational cohort group since the Baby Boomers. They lived through the prison release of Nelson Mandela, the death of Princess Diana, Columbine, the World Trade Center attacks, the Iraq War, the bombings of Oklahoma City, and Hurricane Katrina (Wiedmer, 2015). This generation, compared to previous generations, is more social and seeks to create a balance between their work and personal lives. They are less

independent and more inclusive, need clear goals and structure, supervision and feedback, and mentoring (Gibson, 2013). Technology drives this generation, and they seek to learn from a variety of creative avenues. Generation Y wants to solve problems and find a sense of purpose and belonging (Arora & Dhole, 2019; Gibson, 2013).

These social and technological changes have impacted previous generations and the challenges each has had to overcome. The mission of education is to prepare students to be successful. Supporting the digital society and the direction that technological learning is going will assist students in adapting to the future (Peres & Mesquita, 2018). Ivanova (2009) explained that instructors need to understand that the way they teach their students is changing. Teachers have been losing the engagement of their students year after year. How these latest generations have acquired knowledge must be appropriate to the world in which they live — understanding that the gap between academic staff and students, both technological and social, must be overcome (Ivanova, 2009; Zhang et al., 2018). When faculty, staff, and other stakeholders understand the influence technology has on Generation Z, there is a better chance for increasing retention and overall student success. Reflecting on the values and experiences of yesterday will assist in making those vital connections with the students of today.

Traditional Teaching styles are teacher-oriented. They are often lecture-styled and inflexible. Teachers introduce skills via the blackboard or sometimes a basic PowerPoint and verbal explanation or lecture (Poláková & Klímová, 2019). One of the many disadvantages of this method is that there are numerous students in classrooms today who have learning or behavior difficulties. This type of teaching is difficult for these students. Conversely, advanced students may become bored and not feel challenged (Logsdon, 2016). In the recent past, a considerable shift toward differentiated instruction occurred. Traditional teaching methods do

not foster differentiated instruction, nor does it adjust to the various learning styles of our students. Furthermore, there is a conflict between new teachers and veteran teachers in the way administrators ask them to instruct in the classroom. Veteran teachers have become comfortable in their ways, and it is difficult to shift the mindset to accommodate today's students (Logsdon, 2016; Mustapha & Kashefian-Naeeini, 2017).

Generation Z

Generation Z refers to individuals born after 1990 (Williams, 2019). Advanced technological innovations have shaped these students, issues of violence, an unpredictable economy, and social justice movements (Turner, 2015). Compared to previous generations, Generation Z has unique characteristics that differentiate them from earlier cohorts. For example, this generation utilizes an immense amount of digital technologies for social, formal, and informal learning (Persada et al., 2019; Williams, 2019). Students from this cohort have never experienced life before the internet and have lived in a time when technology has always been accessible (Seemiller & Grace, 2017; Turner, 2015). With technological advances such as mobile devices, social media, and the internet, Generation Z has become adapted to interacting and communicating in a world that is always connected (Turner, 2015). Since these students are used to immediate gratification and instant knowledge acquisition, keeping them engaged in learning may be a challenge for many instructors (Pousson & Myers, 2018; Williams, 2019).

Generation Z students have unique learning preferences. They thrive on technology and tend to be more self-directed. This cohort of students' attention spans are an average of 8 seconds, 4 seconds less than Millennials, and they learn by observation and practice (Seemiller & Grace, 2017). These students do not prefer lectures but learn best by solving real-world problems (Shatto & Erwin, 2016; Turner, 2015). Since technology is a significant part of everyday life for

this generation, teachers must provide a variety of innovative teaching methods across various platforms to keep them engaged (Williams, 2019). These multiple platforms include a variety of technology tools and programs. While there is abundant research emphasizing the learning styles and motivational behaviors of Generation Z students, many of completed studies are on Generation Z college students or Generation Z students entering the workforce (Pousson & Myers, 2018; Shatto & Erwin, 2016; Seemiller & Grace, 2017). There is little research that focuses on Generation Z students at the elementary level, more specifically, the Title I primary setting. Furthermore, there are limited studies based on the perceptions of the teachers' who will be using technology to educate this generation and their unique learning needs.

Current related literature concerning Generation Z and Title 1 students emphasized their unique learning and technological needs. The very nature of this generation of students' lives has changed due to easy access to technology, as it has become more inexpensive and mobile (Turner, 2015; Wang, et al., 2014). Technological changes have affected the way in which both students and teachers collaborate and communicate. Generation Z students live in a technology-rich environment that shapes how they interact with knowledge and new information and how they interact with one another (Lee & Spires, 2009; Turner, 2015). Lee and Spires (2009) explained that teachers who want to increase student engagement must bridge the gap between students' technology use outside of the classroom and the integration of technology use inside the classroom (Seemiller & Grace, 2017). This may be more of a challenge in Title 1 schools due to economic barriers (Cardullo, 2019; Tirrell-Corbin & Cooper, 2014).

Generation Z Students utilize technology outside of the classroom each day for various reasons, from communication and social media to entertainment and gaming. Since this generation of students thrives on technology use, they should also be learning how to utilize

technology to further their learning and academic growth (Rowan-Kenyon et al., 2018). Teachers must consistently give their students ample learning opportunities using technology (Cardullo, 2019). The NCLB Act of 2001 ensured that all public schools implement technology into the classroom to improve students' academic achievement and to encourage technology integration through professional development opportunities for instructors (Davidson et al., 2014; Nepo, 2017; U.S. Department of Education, 2010). This integration of technology would assist in the elimination of the digital divide, which is the gap between students who have ready access to computers, technology, and the internet, and those who do not. Dolan (2016) explains that the digital divide has narrowed its focus to one definition of access to technology, which is the binary understanding of the *haves* and the *have nots*. Regarding Title 1 students, technology use at home and in school is not equitable when compared to other students (Dolan, 2016).

Digital Divide

In recent years, there has been an inundation of new and emerging technology. This technology is not only utilized in the home for communication, social, and economic purposes but also in and out of educational settings to acquire knowledge. Information and communication technologies (ICT) comprise almost all daily economic and social activities (Cruz-Jesus et al., 2016). While some traditional students have adequate technology available to them, economically disadvantaged students may not. This inequity is known as the digital divide. The digital divide is the gap between students who have ready access to technology and those that do not (Cruz-Jesus et al., 2016; Dolan, 2016; Eisenman, 2018). This divide may also reflect the gap between demographics and areas that have adequate access to modern information and communication technology and those that have limited access to these technologies. At one point, in the late 20th century, this divide may have reflected who had access to the telephone.

However, after the late 1990s, the term began to designate the gap between individuals who could readily access the internet and those who could not (Cruz-Jesus et al., 2016). Recent literature has found that a more comprehensive definition of the issue of the technological divide is needed so that one may identify how individuals use technology or do not use technology, instead of merely identifying the "haves" and "have-nots." (Besser, 2004; Cruz-Jesus et al., 2016; Dolan, 2016).

Dolan (2016) examined how technology availability at home and in school was not equitable and went on to explore the underlying causes of the unequal use of educational technology. Similarly, Cruz-Jesus et al. (2016) investigated the gap between not only individuals and households, but also businesses and geographic areas within different socio-economic levels and access to ICT. These and other studies have assisted in differentiating the various characteristics of the digital divide. For example, there are numerous classifications of the digital divide. Attewell (2001) separated it into two distinct echelons. The "first digital divide" pertains to access to computers and the internet. The "second digital divide" relates to the inequalities in computer and internet use. Van Dijk (2003) maintained that the concept of access could be divided into four types: (1) The absence of elementary educational technology due to disinterest or anxiety (mental access); (2) Not having computers or network connections available or in their possession (material access); (3) Not having the skills to use technology effectively due to insufficient training or support (skills access); and (4) Not having opportunities to use technology or the unequal distribution of these opportunities (usage access). Together, Attewell (2001) and Van Dijk (2003) gave consistent classifications for the digital divide. Both "mental" and "material" access relates to the first digital divide in that "mental" access directly correlates with "material" or physical access. "Skills" and "usage" access may refer to the second digital

divide because “skills” substantially corresponds to the influence on “usage.” Most research on the digital divide focuses on the “first digital divide.” Consequently, the current study is seeking to examine the self-efficacy and perceived support through professional development and training initiatives of teachers and the implications both have on technology integration in the classroom.

Other studies have demonstrated that students who have ready access to technology will have a better chance at academic success, and those who do not have access tend to be the students who lag academically (Dolan, 2016; Eisenman, 2018). Recent studies found that the digital divide is still very must a reality for many students today. In most cases, students who lack access are often minorities or live in poverty (Attewell, 2001; Eisenman, 2018). A survey conducted by the National Center for Education Statistics (NCES) on the use of computers by students from PK to 12th grade identified a significant digital divide existing based on the socioeconomic status of the students as well as their ethnicity (DeBell & Chapman, 2006). White students utilized technology more than Black and Hispanic students. Higher-income families, as well as the educational level of the parents, also correlated to computer use in the home (DeBell & Chapman, 2006; Eisenman, 2018). Both socioeconomic status and the student’s race can factor into the inequality of academic success for students. Borman and Overman (2004) referred to students who fall into both categories as “double jeopardy” or “twice disadvantaged.” Children from low-income families go to schools with fewer educational opportunities (van der Klaauw, 2005). Eisenman (2018) found that students from low-income and minority families tend to be (a) poor and (b) lack the technology necessary to bridge the educational achievement gap. Proponents for bridging this digital divide are those who believe that it would improve literacy in students. Many also feel that it would increase social mobility for all while assisting in

economic equality and growth (Cruz-Jesus et al., 2016). The current study will focus on Title I schools, addressing the possible technology gap in students from low socioeconomic households.

Legislation

The United States Department of Education has passed numerous acts over the past few decades meant to advance student academic achievement through technology in elementary and secondary schools. The goal has been to support every student in crossing the digital divide and ensuring technological literacy for all students by the time they reach ninth grade, regardless of race, economic backgrounds, geographic area, or infirmity (U.S. Department of Education, 2010).

Title I Schools

The United States government established the Elementary and Secondary Education Act in 1965 (U.S. Department of Education, 2015). This act gave provisions for every student to receive a quality education, no matter their socio-economic background. The goal of this legislation was to balance the scales so that every student could have equal access to effective and high-quality education, regardless of their economic background (Adams, 2014).

Title I schools are schools that enroll at least 40% of their students from low-income families (Adams, 2014; James, 2014; U.S. Department of Education, 2015). The basic principle of Title I is that schools with a high concentration of low-income students will receive supplementary funding to assist in meeting the students' educational needs. This funding improves curriculum, instructional activities, counseling, parent involvement, and increase staff and program improvement. To continue to receive funding, the schools must make adequate yearly progress (AYP) on state testing and continue to have an emphasis on best teaching practices (Cardullo, 2019; U.S. Department of Education, 2015).

There is a recognized academic achievement gap between traditional middle- and upper-class students and students from economically disadvantaged homes. Extensive research has conclusively established that a student's social class is one of the most significant predictors of their academic success (Adams, 2014; Butler & Votteler, 2016; Garcia & Weiss, 2017). These performance gaps based on social class begin early in children's lives, and these students often fail to make up lost ground (Adams, 2014; Garcia & Weiss, 2017).

Having Title I designation allows schools access to federal dollars to assist in bridging the achievement gap (Adams, 2014; Butler & Votteler, 2016; James, 2014). Schools can work toward closing this gap in numerous ways. The integration of technology to facilitate learning in the classroom is one such strategy. One study concluded that integrating technology during a reading program in a Title I third-grade classroom had a positive effect on increasing the students' reading and fluency scores (James, 2014). This study is only one example of the importance of utilizing technology in the Title I classroom. James' (2014) study went on to add that technological integration increases differentiated and individualized instruction, which helps meet the specific learning needs of Title I students. An investigation conducted by Suppes et al. (2013) established that students were more engaged and persistent as they worked on activities that were driven by technology, especially in math. These studies identified the individualization of instruction through technology to increase student achievement for both reading and math in the Title I classroom.

The Elementary and Secondary Education Act

The Elementary and Secondary Education Act (ESEA) was a part of Lyndon B. Johnson's Great Society Program (Duff & Wohlstetter, 2019). The ESEA was passed in 1965 to offer a clear role for the government, creating more than 1 billion dollars per year in assistance to

Title I. The goal was to help cover the cost of educating the economically disadvantaged. The ESEA was a salient principle agent problem (Duff & Wohlstetter, 2019; Manna, 2006). The ESEA authorized state-run programs for vulnerable students, offering grants to districts that serve low-income families. In the years following the ESEA, the government increased the number of resources designated to education; however, education was still a local issue. Nationally, the law was falling short of fulfilling the ESEA's original goal of full educational opportunities for vulnerable students (Manna, 2006). Thus, the No Child Left Behind Act was signed to reauthorize the ESEA in 2002.

No Child Left Behind Act

In 2002, there was a significant shift in educational policy. The United States government signed the No Child Left Behind Act (NCLB) into action. NCLB created national standards and assessments that public schools would be required to follow to receive money from the government (Contino, 2012; Nepo, 2017; U.S. Department of Education, 2010). One component of the NCLB act is the requirement of technology implementation in the classroom (Davidson et al., 2014). The issue of accessibility to technology is one of the more critical components of NCLB. Access is crucial for students, and NCLB stresses the importance of providing technology literacy for all students, including economically disadvantaged students, students with disabilities, racial and ethical minorities, migrant populations, and English Language Learners (Wright, 2005). For teachers to provide this technological literacy to their students, they must master four targeted areas; Teaching and Learning, Educator Preparation and Development, Administrative and Support Services, and Infrastructure for Technology (Darling-Hammond, 2009; Davidson et al., 2014). Effective technology integration may enhance student learning in all areas of the curriculum. Teachers should engage students in their learning with technology,

which is a specific goal for NCLB (Hew & Brush, 2007). The legislature requires teachers to enhance education through technology to improve students' academic achievement in both elementary and secondary schools. It seeks to assist every student in crossing the digital divide, ensuring all students are technologically literate before they finish middle school, no matter the socio-economic background, gender, race, geographic location, or disability (Hew & Brush, 2007). Finally, the NCLB act encourages the integration of technology resources and systems with teacher training and development of curriculum that may be implemented by the state as best practices (Hew & Brush, 2007; Learning Point Associates, 2007).

Every Student Succeeds Act

Every Student Succeeds Act (ESSA) was enacted on December 10th, 2015, and is the latest reauthorization of the Elementary and Secondary Education Act (ESEA). It is, in many ways, a reversal from its predecessor, the No Child Left Behind Act (Butler & Votteler, 2016). Under the ESSA, states now have substantial leeway in a variety of areas. The United States Department of Education still holds states accountable; however, they have become more flexible. Nepo (2017) identified one change in ESSA that the previous law, NCLB, did not have. The new education act gives states the ability to modify academic standards for students with learning disabilities. The ESSA also permits students to decide how they wish to conduct standardized tests to prove AYP (Nepo, 2017). In the state of Florida, students must take the Florida Standards Assessment (FSA), which is a suite of reading, writing, math, and science tests used to measure student performance (Florida Department of Education, 2018). The assessment correlates with Florida's Common Core-based standards, which elucidate what students should have mastered by the end of each academic year. In this study, I seek to add to the existing

literature on the importance of technology integration in the classroom, its connection to student achievement, and the impact on AYP.

Benefits and Barriers with Technology Integration

Current studies confirm both benefits and barriers to effective technology integration in the secondary level classroom (Ruggiero & Mong, 2015; Wang et al., 2014; Yenmez, 2017). Technology integration benefits students at all academic grade levels. Thus, it is essential to identify how technology can enrich curriculum and knowledge acquisition, but also recognize the challenges that teachers face during this technology integration transition. While much of this research is at the middle school, high school, and college level, there is little research on the successful technology integration in Title I elementary schools (Urban & Falvo, 2016). This study seeks to add to the current body of literature by bridging the gap concerning teachers' perspectives of educational technology integration at the elementary level in Title I schools.

Benefits of Technology Integration

The purpose of 21st-Century learning is to understand both educators' and students' learning experiences so that they may find suitable technology that will assist them in meeting specific academic goals for the learning environment (Varier et al., 2017). Most educators believe that technology is beneficial to both teachers and students in that it effectively enhances students' learning (Doering et al., 2014; Urban & Falvo, 2016).

Technology integration gives teachers the ability to reach all students at their academic level and allows for differentiation (Doering et al., 2014; Jacobs, 2015). For example, when teachers are working with students individually or in small groups, struggling students can use technology to work on content at their specific learning level independently (Jacobs, 2015). Teachers may also use technology by incorporating the flipped classroom. A flipped classroom

(also known as inverted or reversed classrooms) is becoming popular as a strategy to differentiate instruction using technology at home (Amstelveen, 2019; Jacobs, 2015). The flipped classroom allows the struggling learner to gain access to concepts before class to allow more time to read, review, and understand the material to be better prepared to participate in the learning that will occur in the classroom. Advanced students may have opportunities to go deeper into the concept to enrich the lesson (Amstelveen, 2019). Jacobs (2015) clarified that advanced students might benefit from enhanced learning with technology that may challenge them. All students are getting what they need at their academic level, which will diminish boredom or feelings of inadequacy. One result that is consistent when it comes to the flipped classroom is increased student attendance. Another positive outcome from the flipped class learning style is more student engagement. Many students are more satisfied with the flipped style of learning compared to traditional teaching methods (Doering et al., 2014).

Technology provides students access to academic content outside of the classroom (Kong, 2017). If students are unable to attend classes, they may still participate in activities or submit assignments. Moreover, students who are unable to attend school due to illness, location, or behavior issues may participate in virtual school. Virtual schools are online schools where students learn primarily through the internet (Fernandez et al., 2016). Generation Z students have instant access to knowledge and information outside of the classroom. These students utilizing their mobile devices to immediately attain needed information for academic and non-academic purposes (Pousson & Myers, 2018; Turner, 2015). While access to technology in the classroom can give students opportunities to learn, when students have access to technology outside of the classroom, they are provided with more ways to engage with content that facilitates learning. Learning outside of the classroom allows students to respond positively to tasks and

responsibilities while engaging in learning in a relevant way (Pousson & Myers, 2018). Technology can enhance students' learning experience wherever they may be.

The use of technology is a great way to keep Generation Z students engaged in their learning (Seemiller & Grace, 2017). This generation of students utilizes technology for shopping, communicating, socializing, streaming music and movies, watching videos, and gaming. Much of their day consists of using technology in some way, shape, or form (Turner, 2015). This generation of students cannot merely sit and listen to a lecture (Shatto & Erwin, 2016). The application of technology in learning is growing at an accelerated pace. Keeping Generation Z students engaged is a challenge. Using digital technology to instruct, connect students, and enable an engaging learning environment is critical (Henrie et al., 2015). Campbell, Detres, and Lucio (2019) conducted a study that demonstrated how technological tools promoted student engagement at the college level and online. Since these students utilize technology throughout the day for various purposes, they learn best in the classroom with the assistance of technology, as well. Studies affirm that technology is a necessary component in today's secondary classrooms; however, there are limited studies that identify technology as a tool for academic engagement at the elementary level or in Title I schools.

Barriers to Technology Integration

Todays' schools are working to increase technology integration at all academic levels (Tatnall, 2015; Vongkulluksn et al., 2018). There are numerous barriers that teachers must overcome to make this integration successful. These barriers include teachers' beliefs, lack of time, lack of devices, and lack of professional development and support (Cho, 2017; Crompton et al., 2016, Topper & Lancaster, 2013). This review of the literature focuses on the barriers that

teachers encounter when attempting to integrate educational technology into the classroom successfully.

Teachers' beliefs about technology refer to the extent to which they consider specific technology useful in attaining instructional goals that are critical for student success (Ottenbreit-Leftwich et al., 2010; Vongkulluksn et al., 2018; Yu, 2013). When teachers view specific technology tools as beneficial to their instructional goals, they are more likely to consider utilizing them in the classroom. Since most teachers have limited time to work outside of their class, there is little time to be trained on or adequately prepare to use new technology. These conclusions about technology may hinder the teachers' decisions to utilize this technology in the classroom (Vongkulluksn et al., 2018). If teachers view the technology as difficult to use or not beneficial to the students' learning process, they are less likely to adopt this technology into their curriculum (Mitchell et al., 2016). Teachers have little control over the types of technology the school provides for the curriculum and may not agree with the kinds of technology that the administrators may purchase for their schools (Davis et al., 2013; Ruggiero & Mong, 2015). Many school or district technology programs are mandated, some with little to no training. When educators feel as though they have no voice in the technology decisions for their students, they may be reluctant to comply with administrators' requests to integrate these technologies into the curriculum (Dorfman, 2016). Teachers' views about a particular technological tool or program originate in their sense of self-efficacy. How a teacher feels about specific technological tools may be formed through their experiences with that technology, both positive and negative. These beliefs may not be in line with what is proven to be considered best practices (Lumpe & Chambers, 2001). Since teachers consider themselves to be the experts on what their classroom needs, they feel as though they know their students' needs better than any other school

stakeholder. When teachers feel as though they have a voice in choosing specific technology to use for learning in the classroom, they may be more passionate about the integration process. Having a supportive administration who values technology integration, coupled with practical technology training, can positively influence a teacher's self-efficacy and overall attitude about utilizing technology during the teaching and learning process. My study added to this literature in that I identified how teachers' attitudes toward specific technology, as well as their self-efficacy, contribute to the perceptions of successful integration in the Title I elementary classroom.

Learning how to use technology, and then teaching students how to use technology for the purpose of knowledge acquisition effectively takes a great deal of time (Urban & Falvo, 2016). Teachers describe not having enough time, training, and support in learning about or using new technology that would benefit their students' learning (Doering et al., 2014; Urban & Falvo, 2016). Additionally, teachers fear that the technology may not work when it is needed, or that costly technology could break (Mitchell et al., 2016). All of which may take valuable time away from instruction. Although Title I schools get funding for new technology tools for the school, if teachers do not have the time to be trained or the support from administration, they may be hesitant to use this technology during instructional time.

Time is also needed for teachers to implement new ideas and strategies that will go with technology integration. Teachers need more time to learn about the technology and the most effective ways to utilize it during instruction (Heath, 2017; Topper & Lancaster, 2013). Current studies have confirmed that teachers worry that without adequate support and having only limited time to successfully learn about the technology they wish to integrate into the curriculum, their attempts at integration will be pointless (Cho, 2017; Crompton et al., 2016; Topper &

Lancaster, 2013). Some teachers establish high anxiety with technology use and the complications that may occur if the technology does not work during a lesson and disrupts the flow of instruction.

Cho (2017) found that teachers may have the technology available, but do not understand how to use it in the classroom effectively. Many schools may train teachers at the beginning of the year; however, it takes time to practice and develop the skills needed to understand how to use it in their instruction successfully. Teachers may feel as though they have too many tasks to complete on any given day, and the added stress and anxiety that the incorporation of technology may bring can cause teachers to lose their desire to integrate technology into the curriculum. While teachers may understand that technology is critical in the learning process for today's students, they lack time to learn how to use it efficiently (Cho, 2017).

Some schools do not have the equipment needed for all students to have adequate technological access. There may be only one computer lab or only enough iPads or laptops for a few classes or grade levels to share. While it may be the goal for many schools to incorporate 1:1 technology, this is not possible for all schools (Crompton et al., 2016). Teachers must then schedule a time for computer and technology use. Cho (2017) examined how teachers had difficulty finding the time to schedule technology into their day, so they would instead choose not to utilize the technology at all. Schools who are fortunate enough to have 1:1 technology usually have teachers more willing to use this technology for learning in the classroom. Many middle and high schools have invested in 1:1 or Bring Your Own Devices (BYOD) initiatives (Crompton et al., 2016; Topper & Lancaster, 2013). More widespread access to computers in schools allows teachers and students to go from only supplemental use to a more integral part of learning (Lin & Wu, 2010). Mobile devices are becoming more affordable and accessible;

therefore, many schools now see them as a feasible option for equipping their students with this learning resource that may assist them in meeting the demands of 21st learning (Cristol & Gimbert, 2013; Falloon, 2015). The main reason that the 1:1 initiative is successful is due to educators having unlimited access to technology (Cho, 2017). In this study, my explorations may fill the gap in the literature on how elementary schools address the issue of a deficiency in technology equipment through the perceptions of Title I teachers.

Teachers' familiarity with technology connects to the successful integration in the classroom (Lehiste, 2015; Skidmore et al., 2014). In the same way that teachers give their students time to learn new concepts, teachers need time to learn new technologies that will facilitate learning in their classrooms. Some educators may fear new technology and seek significant changes when it comes to professional development and inadequate training (Lehiste, 2015; Mirzajani et al., 2016; Ruggiero & Mong, 2015). The lack of professional development opportunities may limit technology training, the daily demands of the job, and district or school budget cuts (Winslow et al., 2014). Without support from administration and adequate training opportunities, teachers may not have the chance to take full advantage of the potential of valuable technology. Bozkurt et al. (2014) established a link between supportive administration and training with an increase of teacher motivation and self-efficacy in technology use in the classroom. When administrators offer teachers ample opportunities to learn how to effectively use educational technology and give continued technological support throughout the year, teachers are more apt to be successful in the continuous integration of educational technology. While some studies (Bozkurt et al., 2014) maintained that training does increase the chances of teachers using technology, they did not explore teachers' motivations for using it in the Title I classroom.

Summary

This chapter focused on the theoretical framework of Albert Bandura's (1986) social cogitative theory and, more specifically, the component of self-efficacy. The second and more modern theory that underpinned this research is the Technological Pedagogical Content Knowledge framework (Mishra & Koehler, 2006). The literature also emphasized the generational shifts emanating from each generational cohort. It contrasted the unique learning needs of Generation Z students, as well as the importance of teachers understanding the role that technology plays in their daily lives. Understanding the role of technology in the students' lives and the importance that Generation Z places on mobile devices will help teachers identify ways in which to connect technology outside of the classroom to technology use inside the classroom to facilitate learning.

In this review of the literature, I developed a more in-depth analysis of the digital divide. What once was considered the "haves" and the "have nots" of technology, the digital divide is now known as four levels of limitations that minority or poor students face which causes a gap in academic achievement and educational opportunities (Besser, 2004; Cruz-Jesus et al., 2016; Dolan, 2016). Furthermore, the literature highlighted legislation involving Title I, including the Elementary and Secondary Education Act, the No Child Left Behind Act, and the Every Student Succeeds Act. This information gives significance to the expansion of technology integration in K-12 schools across the country. This research was critical due to legislation requiring schools to implement technology in all classrooms, including Title I schools.

The final section of this literature review focused on the benefits and barriers of technology integration in the classroom. What is unknown and needs further investigation, is how Title I teachers at the elementary school level utilize technology in their classrooms to

promote learning. I delved deeper into how elementary teachers' self-efficacy can influence perceived success in the integration of educational technology. Moreover, there is little research that focuses on how Title I students at the elementary level can learn to utilize technology in the learning process. I sought to identify ways in which Title I teachers employ strategies to adequately prepare students to use technology for learning and 21st-century skills.

CHAPTER THREE: METHODS

Overview

The purpose of this qualitative transcendental phenomenological study was to describe the experiences of teachers' educational technology use in Title 1 elementary schools in Central Florida. Since there was little to no exploration of the topic with this subset of educators, it was essential to recognize the ways that Title 1 teachers learn how to utilize technology and, subsequently, teach their students the technical skills needed to bridge the second digital divide. Chapter Three frames this qualitative study from a phenomenological approach. The chapter begins with a description of the research design and its relevance to the study. The setting for the research and details of the criteria for the participants will be disclosed. Finally, discussion of the research questions for the investigation, the research measures, and all data collection procedures will be addressed. For this study, data collection consisted of in-depth, one-on-one interviews, focus groups, and journal prompts. Chapter three gives details into how the data was analyzed based on Moustakas's (1994) steps for analysis of a transcendental phenomenological research investigation. The final sections of this chapter discuss ethical considerations, validity, and trustworthiness of the research.

Design

In this investigation, I examined Title I teachers' perceptions of educational technology integration in the elementary classroom through a transcendental phenomenological approach to qualitative research. Patton (2015) illustrates that qualitative research is personal and "inquires into, documents, and interprets meaning-making processes." This study was qualitative in nature because it sought to provide a deeper understanding of how Title I teachers use technology in their elementary classrooms to increase the technological skills needed to be successful in the

21st century. Qualitative research allowed me the opportunity to gain a more profound knowledge of the perceptions that teachers' have on the value of technology for academic and educational use. Where quantitative research seeks to quantify a problem with numerical data, statistics, and variables, qualitative studies seek to find meaning with open-ended questions that gather a deeper understanding of a phenomenon. Qualitative inquiry examines how individuals identify meaning from their lived experiences. Since the goal was to obtain profound, rich, and abundant data on the experiences of Title I teachers' technology integration in the elementary classroom, a qualitative investigation was most fitting in this study (Patton, 2015). Yin (2009) explains qualitative research as collecting data from a variety of resources, then evaluating and analyzing the data to produces and present the findings. The qualitative inquiry aligned with the purpose, problem, and research questions in this study.

Moreover, phenomenology is a reflective process that focuses on the understandings and perceptions of individuals, reflecting on the lived experiences of the participants in the hopes of a better understanding of more complex interactions (Van Manen, 1990). Creswell (2018) explains that phenomenological studies define the meaning for several participants of their lived experiences of a concept or a phenomenon. Transcendental phenomenological studies create textual and structural descriptions of the phenomenon and then assimilates them into a composite description of meaning, or the *essence* of the experience of the whole group (Moustakas, 1994). The goal was to understand what the teachers experienced and how they experienced it. Thus, my study sought to afford a deeper understanding of the lived experiences of Title I teachers as they learned about and integrated technology into their elementary classrooms.

This investigation utilized a transcendental phenomenological approach. Husserl was the primary originator of transcendental phenomenology, a philosophical approach to qualitative

research that seeks to understand the human experience (Moustakas, 1994). Husserl's groundbreaking work inspired many researchers in the development of various movements. Husserl described transcendental phenomenology as a unique method of eidetic reduction. Later, Husserl promotes a "returning to the self to discover the nature and meaning of things as they appear and, in their essence" (Moustakas, 1994, p. 26). With hermeneutic phenomenology, the researcher seeks to focus on the subjective experiences of the participants, attempting to reveal these experiences through interpretation (Creswell, 2018). However, transcendental phenomenology aims to understand human experience by descriptive means. The difference between both approaches to phenomenology lies in the foundationalist vs. non-foundationalist view. Transcendental phenomenology seeks to identify data and a valid interpretation of texts independent of the influences of the interpreter. Hermeneutic phenomenology focuses on making meaning from interpretive interactions between the participant and the researcher (Allen, 1995). The nature of transcendental phenomenology is to separate the experiences of the researcher from the research and to use descriptive means to find meaning. Thus, transcendental phenomenology was most appropriate for my study in that I sought to describe the experiences of Title I elementary teachers' use of educational technology in the elementary classroom.

Research Questions

To better understand the experiences of Title I teachers' use of educational technology in the elementary classroom, the following research questions guided this investigation:

Central Question:

How do Title I elementary teachers describe their experiences utilizing educational technology in the elementary classroom*?*

Sub-Question 1:

How do Title I elementary teachers describe their technological awareness and their ability to integrate current educational technology into their elementary classrooms?

Sub-Question 2:

How do Title I elementary teachers describe their experiences with professional development and training initiatives designed for educational technology integration in the elementary classroom?

Sub-Question 3:

How do Title I elementary teachers describe the strategies they use to assist students in learning to utilize educational technology to enhance knowledge acquisition effectively?

Setting

The participants for the study were from various Title I elementary schools located across Central Florida. I chose the location for the study due to being familiar with the area and because of economic multiplicity, diversity, and technology initiatives. The setting included schools located in both rural and urban areas. These Central Florida Title I schools were diverse in not only their location, but some schools also had a high population of migrant students while other schools were predominantly white. It was my goal to utilize a diverse collection of schools across Central Florida as the setting for this study.

Participants

I drew the participants for this study from Title I schools across Central Florida. I utilized convenience, maximum variation, and purposeful sampling to acquire participants for this investigation. Patton (2015) states that purposeful sampling uses a strategic selection of information-rich cases to study and offers a more comprehensive investigation. Utilizing a

demographic survey, I was able to identify eligible teachers who actively use educational technology in their classrooms. It was my goal to use maximum variation sampling to gather a diverse sampling of participants. Maximum variation sampling is necessary when a researcher wishes to ensure a wide variety of individuals to understand how different groups of people view a specific topic (Patton, 2015). I looked for participants who were both men and women, who were veteran teachers and those new to the profession, and those who utilized an assortment of teaching styles (Appendix G). Using a diverse and heterogeneous population of participants added to the validity of this investigation. Maximum variation sampling assisted me in gathering participants who were successful in utilizing educational technology for knowledge acquisition. This sampling helped me to attain rich and thick data that allowed a better understanding of Title I teachers' use of educational technology in the elementary classroom. Finally, I used convenience sampling because of the prompt, uncomplicated, and economic advantages of identifying readily approachable and familiar participants (Patton, 2015).

The criteria for participants in this investigation included individuals who were elementary teachers and were teaching in a Title I school in Central Florida. These teachers had at least three years of teaching experience and were familiar with current educational technology trends used for student learning. An online survey was given to potential participants to confirm that they met the required criteria (Appendix B). The survey questions identified demographic information and asked about items such as age, gender, ethnicity, years of teaching experience, grade levels taught, and comfort level or experience using technology. This survey allowed for confidentiality. Given the nature of qualitative research, researchers must mask participant names as soon as possible to protect the participants and avoid the inclusion of identifiable

information in the analysis files (Creswell & Poth, 2017). Creswell (2018) suggests 5-25 participants; thus, the sample size for this study was 15 participants from across Central Florida.

Procedures

Before any data could be collected, I first had to obtain IRB approval through Liberty University. I sent out a letter of introduction explaining the study to teachers in Title I schools. I included the purpose of the research and the benefits behind it. Once I gathered consent from the potential candidates who wanted to participate in the investigation, I requested that they complete the survey to determine eligibility and provide information for maximum variation sampling. From there, I began to make appointments for one-on-one interviews. These interviews helped me to gather the information that assisted in understanding the experiences that the teachers had in learning how to use new educational technology in the elementary classroom to increase student academic achievement. I interviewed these individuals in a convenient and comfortable place. With permission from the participant, I used a video and audio recording device to ensure a high-quality transcript. The interview was first transcribed by hand-transcription so that I could review and become more familiar with the information given by the participants. Additionally, hand transcriptions allowed me to ask for clarity on any points that were vague or ambiguous. The preparation and analysis of qualitative data are not only rigorous but also incredibly time-consuming (Pope et al., 2000).

After completing the personal interviews, I conducted two focus groups consisting of 5-8 teachers so that I could gather group-level data. I held each focus group to allow the participants to discuss several diverse perspectives and ensure the collection of high-quality data while revealing themes that may seem taboo (Patton, 2015). The focus groups were both audio and video recorded so that I could document all verbal and non-verbal cues. Focus group interviews

with six to eight interviewees are an effective way to collect qualitative data (Creswell, 2018). The focus group discussion included technology integration in the classroom, self-efficacy, and comfort of technology use, training or professional development opportunities, and the barriers that they may encounter when integrating the technology.

Finally, participants were asked to respond to journal prompts to allow for reflection of their individual self-efficacy and to record experiences with technology integration. These responses were coded and added to the data to be analyzed. Creswell (2018) explains that documents, such as journals or video recordings, serve as part of the data collection process. Researchers may face ethical challenges, such as consent, coercion, or confidentiality. It may also be a challenge if materials are difficult to read and decipher (Creswell, 2018). To offset these possible challenges, I asked teachers to share experiences via three journal prompts, typed and returned via email within two weeks. This time constraint allowed me to clarify any unclear or ambiguous information before I began coding and analyzing the data.

Throughout the process of data collection, I kept a reflective journal and recorded my own beliefs, attitudes, and thoughts. This journal ensured that I continued to bracket my opinions away from the participants' perspectives so that I could maintain focus on the research (Moustakas, 1994). Furthermore, participants had pseudonyms, and all data collected was stored in a well-secured location. Electronic files were password protected. Finally, participants had access to the data that they provided so that they could examine the descriptions of the researcher to ensure accuracy.

Transcendental phenomenology includes the triangulation of numerous data collection methods. Creswell (2018) explains that triangulation is a process requiring various methods of data gathering. From this data, themes began to emerge. I compiled these themes to assist in

making meaning. To ensure that I continued the transcendental approach in this study, I kept a journal of my thoughts and opinion to bracket my experiences (Moustakas, 1994).

The Researcher's Role

Creswell (2018) states that in qualitative research, the researcher is the "human instrument." I was previously a Title I teacher and currently work with educational technology, so I knew I needed to bracket my own experiences with teaching and technology away from those of my participants. Moustakas (1994) refers to this as epoché, where the researcher sets aside all biases, prejudgments, or preconceived notions. Though the epoché, I put aside my understandings, and instead concentrated on the lived experiences of my participants. I continued to address my biases through the epoché before, during, and after each stage of the research. A qualitative researcher owns and reflects their voice and perspective (Patton, 2015). For this study, I continuously recognized my perceptions and views and kept a reflective journal to record these perspectives throughout the entirety of this investigation.

As the primary instrument for collecting and analyzing the data, I fostered trusting relationships with each participant in the study by getting to know them on a deeper level through phone conversations or in-person meetings before I begin collecting data. Patton (2015) explains that qualitative data from and about humans represent perspectives and not the *truth*. Thus, I remained accurate and trustworthy in this data. It is unfair to judge the responses of the participants; it is my responsibility to report the meaning of their responses. My research was based solely on the views and descriptions of my participants. Additionally, I had no affiliation with the schools utilized in this investigation. This unfamiliarity with each school will safeguard against any bias in the data.

Qualitative research is about interpretation in two ways; first, how the participants interpret the research, and second, how the researcher describes what the participants are saying (Creswell, 2018). These interpretations and descriptions are valid due to the researcher setting aside all preconceptions and beliefs. I conducted an audit trail that entailed consistent reflexivity, researcher journaling, and reflection. Furthermore, to address these biases, I ensured that I utilized member checking to gather accurate and authentic data from my participants.

Data Collection

This investigation used a transcendental phenomenological approach to describe the perceptions of Title I teachers' use of educational technology in the elementary classroom because of the multiple techniques that I used to collect data. I first collected data from an online survey to gather background information and ensure the participant met the criteria. Next, I conducted one-on-one in-depth personal interviews, followed by focus groups. Finally, I asked the participants to complete journal prompts. It was my goal to understand the phenomenon of educational technology use in the Title I elementary classroom for academic achievement and the development of technological skills. The triangulation of data verified the perceptions and experiences of the participants.

Interviews

Applying an effective analysis of the data that was grounded in the participants' narratives assisted in maintaining the dependability of the study (Lincoln & Guba, 1985). I conducted one-on-one personal interviews in a private setting where open-ended questions guided the discussion; however, I was flexible and sometimes probed and prompted to dig deeper and extend understanding (Moustakas, 1994). The interviews were conducted in a comfortable environment. I transcribed and hand-coded these interviews to identify emerging

themes. The data was member-checked for reliability and validity. Table 3.1 identifies the interview questions used in this study to obtain a rich and thick understanding of the Teachers' experiences.

Table 3.1

Interview Questions

Interview Questions	Research Questions
1. What do you find most rewarding about being a teacher?	
2. Describe how you utilize educational technology in the classroom for academic purposes.	CQ
3. How many hours per day do you engage in technology use?	CQ
4. What types of educational technology tools do you utilize most often?	CQ
5. Which educational technology tools do you utilize that you perceive are most beneficial? Why?	CQ
6. Which educational technology tools do you feel are the least beneficial? Why?	CQ
7. Elaborate on how comfortable or uncomfortable you feel using educational technology in your classroom daily?	SQ1
8. Describe your attitude toward educational technology as an instructional tool for students in your classroom?	SQ1
9. How often do you research or experiment with new technology for future use in your classroom?	SQ1
10. How do you feel when you are tasked with utilizing new technology with your students?	SQ1
11. Describe how technologically savvy you perceive yourself to be?	SQ1
12. How does your administration prepare you for technology use in the classroom for instruction?	SQ2

13. Describe the ways that you have participated in training that targets the use of educational technology?	SQ2
14. What are your perceptions of the training, or lack of training, that you have received that will assist you in effectively using educational technology in your classroom?	SQ2
15. How often are you given opportunities for training initiatives for technology integration in your classroom? Describe these trainings.	SQ2
16. Describe the opportunities you have outside of the classroom that allow you to explore and learn about educational technology.	SQ2
17. What opportunities do you offer students to use technology outside of the classroom for the purpose of learning?	SQ3
18. How does educational technology use impact student learning in your classroom?	SQ3
19. How do you train your students to use technology in the classroom?	SQ3
20. Why is it important for your Title I students to have access to technology in your classroom?	SQ3
21. What strategies do you use to ensure that your Title I students are trained in effective technology use that will allow them to be prepared for 21st-century learning?	SQ3

These interview questions focused on the experiences of the teachers, which is indicative of phenomenological interviews (Patton, 2015). Questions one through five sought to identify how the teacher utilized technology in the classroom, how much the teacher used technology, and which tools were most beneficial or least beneficial. These first questions established how much the teacher interacted with educational technology.

The next set of questions, six through ten, were looking to identify the teacher's attitude about their technological awareness and self-efficacy. I wanted to understand how their attitude and enthusiasm for learning new technology influenced how they incorporated this new

technology into the classroom to assist the students' learning process. Self-efficacy is grounded in social cognitive theory. Thus, I needed to understand the teachers 'thoughts about their abilities with technology. Personal, environmental, and behavior factors can affect self-efficacy (Bandura, 2001; Martin, 2004). Therefore, I sought to identify these factors and connect them to the teachers' attitudes about technology integration.

Teachers at the elementary level must have adequate training to effectively implement educational technology into their curriculum (Blau & Shamir-Inbal, 2016; McQuirter & Meeussen, 2017). Questions eleven through fifteen focused on answering sub-question 1, which asked the teachers to examine and describe training and professional development opportunities that they have experienced at their school. Pittman and Gaines (2015) specified the principal barriers to technology integration were access to technology hardware and teacher training. Teachers that do not receive sufficient training on new technologies and do not have the support necessary may not feel inept enough to deal with these barriers. This lack of training can also relate to teacher self-efficacy. If teachers do not feel adequately trained or feel as though they do not have support when technology issues arise, they may not feel as though they have the training to handle these conditions when they occur. It is possible that this could hinder their desire to incorporate the use of technology in their instruction.

Finally, questions sixteen through twenty offered teachers the opportunity to elaborate on how they train Title I students on the use of technology for learning. I sought to understand teachers' views on the importance of technology training for Title I students. Successful integration begins with teachers having the fervor and know-how to teach students how to effectively use this technology for learning (Kayalar, 2016). Since many Title I students do not have easy access to technology outside of the classroom and are behind in academic growth due

to economic disadvantages, teachers should prepare them for college and career within their classrooms. Kermani and Aldermir (2015) examined the importance of early digital technology use and how it increases student engagement and educational and career preparation. The final questions in the one-on-one interview allowed teachers to describe how they trained their students in technological skills to prepare for 21st learning and professions.

Focus Groups

Once the interviews were complete, I conducted focus groups. Each group consisted of six to eight individuals. I collected group-level data from the focus groups. I recorded all interactions and discussions with both an audio and video recording device so that I could document verbal and non-verbal communications. Focus groups can give a social context that allows individuals to not only respond to the initial question but reflect and add to the responses of others (Patton, 2015). Focus groups permitted the participants to discuss their shared experiences integrating technology into their classrooms. I transcribed these conversations by hand. The transcriptions were member checked so that participants could check for validation or clarification. This data was locked in a safe place where only I, the researcher, had access. During the focus group, I continued to record my own thoughts and beliefs to bracket them away from the collected data from the study participants. Table 3.2 will identify the questions asked during the focus group.

Table 3.2

Focus Group Questions

Focus Group Questions	Research Questions
1. What are your thoughts on the influence of technology on student learning?	CQ, SQ1

2. What technological tools to you use most often in the classroom?	CQ
3. Which technology tools are most/least beneficial? Why?	CQ, SQ1
4. How has your view of technology use in the classroom changed over the course of your career?	SQ1
5. Describe a time when you were uncomfortable using technology in the classroom for instruction or learning?	SQ1
6. What are the advantages of technology use in the classroom for the purpose of learning? Disadvantages?	CQ
7. What obstacles do you find are common when teachers are learning to use new technologies in their classroom?	SQ1
8. Describe both positive and negative experiences with technology training (or lack thereof) or technology implementation in the classroom?	SQ2
9. How do students use educational technology in the classroom for the purpose of learning?	CQ
10. Describe how you teach your students to use new technology for learning?	SQ3
11. How are your Title I students' technology needs different when comparing them to non-Title I students? (SQ3)	SQ3
12. What other information would you like to add concerning educational technology integration into the classroom?	SQ1
13. What other information would you like to add concerning technology training for both instructors and students?	CQ, SQ2

Journals

Journals are considered a written and tangible illustration of the lived experience and offer a way of describing and identifying perspectives on a more profound level (York-Barr et al., 2005). Utilizing journal entry prompts added an additional level of validation for this study. Journal prompts gave teachers an extra opportunity to share viewpoints and perspectives without

distraction and separate from the interview process (Creswell, 2018). Janesick (1998) explains that journals are tools that encourage deeper interactions between the study participant and the researcher. Giving teachers time to quietly reflect on their interactions with educational technology and providing them the opportunity to give specific feedback about their classroom experiences offered me a more in-depth look into the individual perspectives of the participants. For this investigation, I gave each participant three journal prompts to complete independently. I asked for these prompts to be completed and emailed to me within a two-week timeframe so that I could begin analyzing the responses. Creswell (2018) explains journaling as a document where participants can self-reflect on the phenomenon and give a more in-depth insight into their perspectives in a quiet and contemplative setting outside of the interview process. From these interviews, focus groups, and journals, I transcribed and coded the data so that I could generate themes or categories, utilizing the individual's narratives.

Table 3.3

Journal Prompts

Journal Prompts
Journal Entry 1:
1. Describe the technology you used in your classroom today.
2. How much of the day was spent using technology?
3. How familiar were you with the technology being used?
4. Describe the level of student engagement that occurred during the lesson(s) that used technology?
5. What distractions may have occurred?
6. List any technology you frequently use (on a daily or weekly basis) and its purpose.

Journal Entry 2:

1. Discuss the professional development training you have been offered this school year.
2. What training was beneficial?
3. Which seemed like a waste of time?
4. Describe the level of support that your administration has offered when it comes to the use of technology in your classroom?
5. Describe the ways that your administration has offered or given training opportunities necessary for you to make integration successful?
6. In what ways has this training helped you to feel more comfortable with the use of technology for learning?

Journal Entry 3:

1. Describe a situation where you were uncomfortable using technology in a lesson.
2. What made you feel uncomfortable?
3. Describe how this situation may have hindered the success of the lesson?

Data Analysis

To analyze the data, I used Moustakas' (1994) procedure for phenomenological reduction. The steps in the transcendental phenomenological process are first bracketing through the epoché. Epoché is a preliminary act that involves setting aside the researcher's bias or beliefs (Moustakas, 1994). I wanted to ensure that my experiences and views were separated from the data so that my ideas had no interference on the perceptions of my participants. By continuously reflecting on, and then describing my own feelings and thoughts throughout this study, I had a more clear and concise understanding of the teachers' perspectives related to their experiences of technology integration.

Transcendental phenomenological reduction occurred when I considered the phenomenon with an open mind and from different perspectives. Qualitative analysis transforms data into findings (Patton, 2015). Data analysis is considered the art of interpreting data to identify themes (Corbin & Strauss, 2015). After collecting all forms of data, I organized and prepared the data for analysis. I transcribed audio and video data, typed up all field notes, and begin coding to obtain a general sense of the overall meanings and themes that were beginning to emerge. After analyzing and transcribing the results, I sought additional confirmation and clarity for any ambiguous responses.

Next, I continued analysis with open coding. This was completed through hand-coding so that I could utilize human judgment in order to perform a more in-depth investigation. Hand-coding also allowed me to be more familiar with my participants, their interpretations, and the overall data. I identified units of meaning with horizontalization, where I understood that each comment has equal value. The outcome was a textual description of the phenomenon (the what) (Moustakas, 1994). I listed relevant quotes and gave equivalent value to all comments made by my participants, removing any unnecessary, overlapping, or unrelated statements.

Next, imaginative variation occurred when the textural descriptions (the how) became more evident. This part of the process required imaginations and researcher intuition to reflect the relationship of themes that were pertinent to the experience (Moustakas, 1994). At this stage, I attempted to explain the structures of the phenomenon, seeking to identify possible meaning through my imagination and differing perspective (Patton, 2015). I then synthesized the data by combining the textual and structural descriptions. This synthesis allowed me to identify the essence of the experience. I integrated the textural-structural descriptions into one composite narrative that represented the essence of the entire group (Moustakas, 1994).

In summary, Patton (2015) states that the researcher should organize the data into meaningful clusters or themes. By examining frequently used phrases, I was able to identify emerging themes (Moustakas, 1994). From this coding, I first discovered themes in the data and then built a narrative of the perceptions of my participants (Moustakas, 1994). The textural descriptions, descriptions that were actual word-for-word experiences from the participants assisted in making meaning from the themes that emerged. Finally, through this triangulation, I synthesized the data to give a clear picture of the evidence of the phenomenon of Title I teachers' use of educational technology in the elementary classroom for learning. This step required me to integrate the analyzed data and make meaning of the data that I had collected (Moustakas, 1994).

Trustworthiness

The credibility of my research conclusions and interpretations relied on my thoughtful consideration in creating trustworthiness (Patton, 2015). Trustworthiness (Rigor) Criteria is rooted in a positivist paradigm. This paradigm includes four concepts; credibility, dependability, transferability, and confirmability (Schwandt, Lincoln, & Guba, 2007).

Credibility

Prolonged engagement in the field, member checking, and the triangulation of data sources and methods ensured that I had established credibility. I continued to clarify researcher bias and identify assumptions. I developed continuous reflexivity. To confirm that appropriate analysis of the data, I utilized member checking. Creswell (2018) explains that triangulation is a process requiring multiple methods of data. Using various methods of data collection and triangulation ensured credibility.

Dependability and Confirmability

I ensured dependability and confirmability through the auditing process. I developed detailed and thick descriptions of the collected data. This assisted in ensuring confirmability and dependability (Moustakas, 1994). To begin an audit trail, I engaged in two processes; first, I created a tracking document at the beginning of a study that detailed critical decisions, rationale, and potential consequences. Second, I used an auditor to review the process and findings. Finally, a peer review of data assisted in confirmability.

Transferability

Thick and rich descriptions are reported throughout the study so that the findings are transferable between the researcher and the participants (Creswell, 2018). Focus group and face-to-face interview questions assisted in transferability. Lincoln and Guba (1986) explain that narrative development about the context should be occurring so that the researcher can make judgments about the degree of fit or comparisons. These specific descriptions and accounts ensured that all who want to use these findings elsewhere could accurately do so.

Ethical Considerations

I remained ethical in my research, as ethical considerations in this study were extremely important to me. First, I ensured that I had approval from the IRB at Liberty University. I utilized the informed consent form before collecting any data. Finally, I stored all data collected in a well-secured location. Electronic files have been password protected. To protect the identities of the participants, individuals were anonymous and provided with a pseudonym.

Participants had access to the data that they provided the researcher and were able to examine the descriptions of the researcher. Participants had full disclosure of what the research entailed before they agreed to participate. The researcher will keep the data for three years. Once

I have formal authorization from the University Archivist, I will destroy the research data in a way that ensures that the data or information is undetectable.

Summary

This transcendental phenomenological study sought to understand and describe Title I teachers' use of educational technology in the elementary classroom. To conduct this study, I identified participants through purposeful sampling. The participants were Title I teachers in Central Florida. After obtaining permission from the IRB at Liberty University, an informed consent form went out to the participants of the study. I collected data through one-on-one interviews, focus groups, and journal prompts. The data gathered was transcribed, coded, and analyzed to identify emerging themes.

As the researcher, I ensured rigor through trustworthiness. Though prolonged engagement in the field, triangulation, member checking, and the audit process, I ensured that I established all four concepts of trustworthiness. Data has been kept confidential, and participants had full disclosure before data was collected.

There is little to no data that focuses on the perceptions of Title I teachers and technology integration in Central Florida. This research fills that gap and adds to the literature. It is my hope that this research benefits Title I teachers, administrators, parents, and other Title I school and district stakeholders in a greater appreciation of the unique technological needs of Generation Z students. This study contributes to a deeper understanding of the developmental and educational needs of this generation.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this transcendental phenomenological study is to describe the experiences of teachers' educational technology use in Title I elementary schools in Central Florida. In this study, I sought to identify teachers' perceptions of the importance of technology training for Title I students who are already academically and economically disadvantaged. In this chapter, I provide an explication of the participants and descriptions of the participants' experiences using educational technology in the classroom. Next, I evaluate the themes that develop that respond to the research questions used to guide this study. This chapter concludes with discussions on how the emerging themes address the central and sub-questions.

Participants

The participants for this study included 15 teachers who currently teach in Title I elementary schools in Central Florida. These teachers participated in one-on-one interviews, focus groups, and completed journal prompts at the end of the 2019-2020 school year and during the summer of 2020.

Anna

Anna is a 49-year-old White female veteran teacher who has been an educator for 26 years. She has taught one year of third grade, six years of kindergarten, and nineteen years in her current position, Pre-K. Anna loves watching the growth of her pre-K students as they accomplish new skills throughout the school year. What Anna enjoys most about Pre-K is the excitement she sees in her students when they are learning. Anna feels as though she is moderately comfortable using technology as long as she is familiar with the technological tool or program she is using. However, Anna is more hesitant to use technology that is new or

unfamiliar to her. Anna reports the technology she utilizes typically in the classroom includes VHS tapes, cassette tapes, DVDs, CDs, iPads, computers, and the SmartBoard. Anna also uses resources on the Internet, such as YouTube and Zoom.

In Anna's class, students mostly use the class SmartBoard and iPads. While Anna understands that Title I students need to be learning in a technologically rich environment, she feels as though she is ill-equipped to integrate technology at this level effectively, especially for this age group. Anna finds that by teaching her young students how to use the mouse and electronic pen, she is doing her best with Pre-K students and giving them somewhat of a foundation to begin learning how to use technology.

Beverly

Beverly is 68 years old. She is a White female that has been teaching for 24 years. Beverly currently teaches kindergarten; however, her teaching experience also includes 1st grade, 2nd grade, and 4th grade. Beverly enjoys seeing the students come in at the beginning of the year with a blank slate and watching them grow throughout the year.

Beverly finds that many of her Title I students are deficient in essential technological skills, and she understands the importance of giving them access to this technology in the classroom. Beverly explains, "They need technology to survive in the world. For example, even now, fourth grade went to doing the state writing assessment on the computer, and many of these students could not even type."

Cara

Cara was born and raised in Puerto Rico and currently teaches 3rd grade. She is 42 years old and taught one year of high school in Puerto Rico before moving to the United States. Upon arriving in Florida, Cara became a teaching assistant for ten years while learning English. She

later received her teaching certificate for the state of Florida and has been teaching for five years. Aside from her current 3rd-grade math and science class, Cara has had experience teaching 10th, 11th, and 12th grades. What Cara finds most rewarding about teaching is when she can identify a student who feels helpless or not valued. When Cara can make a connection and help a student to build their self-confidence, that is when she feels like teaching has been truly gratifying.

Cara understands the unique needs of Title I students in that they must be introduced to technology and instructed on how to use it for learning effectively. Cara posits," technology is important. Everything in the world revolves now around technology. I think that these students must have these opportunities in the classroom, or they will fall further behind. They are already behind economically. They won't have the same experiences as traditional students, so if they don't have technological skills, they will get even farther behind."

Debra

Debra is a 54-year-old White female who has been teaching for the last 15 years. Her experiences include teaching at the intermediate level, 3rd, 4th, and 5th grades. She is currently teaching 4th grade. Debra feels that making a connection with her students is essential and looks to build deep and meaningful relationships with her students each year. Debra understands the importance of technology integration in her classroom. She recognizes that her students are surrounded by technology in their daily lives. Debra is incredibly comfortable using technology for instruction and clarifies that her current students have 1-to-1 technology in the form of HP Streams. Other technology that Debra utilizes in her classroom includes an iPad that she uses with Doceri software, a document camera with overhead projector, and a cordless mouse/keyboard that allows her to be mobile in the classroom. Finally, Debra uses her personal cell phone to communicate with parents and post student rewards via ClassDojo.

Elijah

Elijah is a 33-year-old Italian male who is going into his fourth year of teaching. Teaching is his second career as his first degree was in hospitality. In the last three years, he has taught 2nd, 4th, and 8th grade. Elijah feels as though he is exceptionally technologically savvy and often has other teachers come to him for help in learning to utilize new tools and programs. Elijah uses technology tools that include the SmartBoard, Mimio Technology, iPads, and Laptops/Chromebooks/Desktops. He also uses a Design Jet printer, USB Document camera, Doceri app, MakerBot app, 3D Printer, Presenter Remote, Plickers app, Kahoot!, and Google Drive & Suite.

Felicia

Felicia is a White female who is 35 years old. She has been teaching for 13 years in Title I schools at the elementary level. Felicia has had experience teaching in 2nd, 4th, and 5th-grade students and not only feels comfortable using technology but is always willing to learn about new ways to incorporate effective technology into her teaching. Her current use of technology in the classroom includes the Doc cam, projector, iPad, laptops, zoom, and OneDrive. She and her students engage with technology approximately 75% of the day.

When it comes to the needs of Title I students, Felecia understands that they must be prepared for the future. Felicia states, “Students must be able to break the cycle so that they are not always going to be the ones living in those trailers outside of the city limits. We must help them to have opportunities to go to college, type a resume, and do something other than playing fortnight or creating a TikTok.”

Helena

Helena has been a teacher for the past 14 years. She is 69 years old and currently teaches 1st grade at a Title I school in Central Florida. Helena is Scottish and French Canadian and has had experience teaching at the elementary level in kindergarten through 2nd grade as well as teaching adults in ESOL classes and at a local technical college. Helena clarifies that even though she is extremely comfortable with technology use, she is always eager to learn about new technology so that she can keep up with the latest and greatest in technological innovation when it comes to teaching and learning. For her elementary students, Helena utilizes the doc camera, PowerPoint, wireless keyboard and mouse, iPads, and Zoom.

Helena explains that she loves to feed off of the excitement her students have when learning. When they struggle, so does she. Technology is a great way to connect with these students. Helena uses Istation, Zearn, and Accelerated Reader as mandated by the school to enhance the curriculum. She also tries to incorporate PowerPoint, YouTube, and Google when necessary. The students seem to be excited about simple things like the ability to have the mouse travel around the room. Helena describes the ways students' eyes light up when she places the mouse on their desks, and they can control the overhead screen.

Jake

Jake is a 44-year-old White male who has been in education for 17 years. Jake elucidates that he is very familiar with technology use in the classroom. When asked about his technology use, Jake explains that he uses various smart board applications/tools for presentations as well as online presentation platforms such as Prezi. For data tracking, Jake primarily uses google based forms for ease of sharing. Jake goes on to elaborate on his use of Lan School for monitoring his

students' laptop content and Canvas for lessons and communication. Overall, Canvas, HERO, Microsoft Office tools, and Google Docs are the primary utilities in his day to day work.

Jake clarifies that as he has grown in his technology use, he finds that his students are becoming more engaged and enthusiastic about their learning. He feels as though the student engagement in his class has increased to about 80% due to students needing lessons from Canvas or clarifications and questions via Microsoft Teams, where his students actively submit questions and classwork.

Julio

Julio is 34 years old and has been in the teaching field for the past nine years. He is a Hispanic male who began his career in New York City and moved to rural Florida in 2015. While he has had experience in teaching 3rd, 4th, and 5th grade, he mostly enjoys his current teaching assignment, which is 3rd grade. In his day-to-day classroom routine, Julio utilizes iPads, laptops, a SmartBoard, the document camera, and instructional software or apps needed for the lesson or curriculum.

Julio describes himself as highly technologically savvy and uses a great deal of technology in his everyday life. Thus, when it comes to incorporating technology into his lesson or classroom activities, he feels extremely comfortable. Julio finds most technology that he uses as beneficial but not necessary; however, his students are less engaged in the school directed benchmark program. He reports that they do not like to participate in the program, and the data he derives from it is not reliable because "the students do not take it seriously."

Julio shared his views on the importance of technology integration for Title I students by explaining that, "these students know that they are different. They don't have the clothing, school supplies, or technology that some of their peers do because of being economically

disadvantaged. As teachers, we must bridge the academic gaps. We know this. However, bridging that technology gap is just as important. I am not sure how many of my coworkers understand this."

Melissa

Melissa has been teaching for 13 years at the same Title I school. She is a 36-year-old White female who feels extremely confident using technology in her 2nd-grade classroom. Melissa boasts of being a fast learner when tasked with exploring new technology. Melissa asserts, "I always tell my principal to bring it on! I know that when he gets excited about a new form of technology, it is going to be good." Melissa goes on to describe how her classroom has a set of tablets that she uses for Nearpod each day. She also enjoys utilizing ClassDojo, Zearn, iReady, Flocabulary, Epic, Kahoot, Go Noodle, and other various apps and websites.

Melissa's students are well versed on tablets and can efficiently utilize apps to supplement math and reading lessons. They also use Epic for reading, which benefits her lower students that need assistance to read and take Accelerated Reading tests. Melissa is fond of Kahoot! due to its engaging nature, and students love to be competitive when reviewing content. When students need an academic break, they use the Go Noodle website to release pent up energy and give students a "brain break." One program that Melissa finds that pulls her quiet students out of their shell is Flipgrid. Students who normally would not speak in class or are hesitant to participate in the learning process are eager to create video responses utilizing the Flipgrid program. Finally, Melissa explains that Nearpod was a gamechanger for their school, especially when the pandemic hit.

Natalie

Natalie has been teaching for 14 years at various elementary grade levels. As a 52-year-old Hispanic female, she feels extremely comfortable with technology use in her classroom. Natalie finds that making connections with her students and sharing a passion for learning is the most rewarding part of her career. As an older teacher, she understands that there is always so much more to learn, not only in education in general but especially with evolving technology. Currently, she utilizes computers, tablets, document cameras, and various other apps and websites that will enhance student learning.

Natalie teaches students from kindergarten - 5th grade in a specials STEAM rotation at her school. For the younger students, she utilizes Vooks and Accelerated Reader for reading and character building. There are days when the administration asks her to incorporate some sort of physical activity into her class due to the mandated rotation of having only one day of an actual physical education class per week. Natalie even reports utilizing technology to incorporate this physical activity with the use of Go Noodle. For her older students, Natalie is teaching about research and reliable resources. Additionally, she is teaching her students how to cite these sources in an MLA format appropriately. Natalie considers her students' independent use of technology outside of the classroom will normalize its use for learning.

Nichole

Nichole is a 58-year-old White female who is a veteran teacher. She has been teaching at the elementary level for nearly 26 years. Her current grade level is 4th grade. However, she will soon be teaching science exclusively as her school is looking to begin departmentalizing. Nichole loves technology and states, “Students get bored. Technology provides a stimulus that keeps them engaged and excited. If you don’t keep them enthused, you will quickly lose them.”

The most meaningful part of teaching for Nichole is bringing knowledge to her students in a way that is fun and engaging.

Nichole believes that technology surrounds students each day; it is what they know and what they are comfortable using during learning. She understands that technology use in the classroom cannot be a "one size fits all" mentality. She is grateful that she has an administration that believes the same way. Nichole adds that technology has endless possibilities in the classroom. It not only builds a student's confidence by allowing a more student-centered learning environment, but it also gives numerous opportunities to find a learning style to address each student's unique needs.

Paige

Paige is a 41-year-old White female who has been teaching for a little over ten years. She has had experience teaching in the intermediate grades and currently teaches 3rd grade. Paige reports that she feels extremely comfortable with technology use in her classroom and utilizes numerous forms of technology throughout the day.

In her classroom, Paige likes to start lessons with technology to get her students excited about the content. For example, in her math class, her students were learning about area and perimeter. Paige utilized an architecture program, and the students created haunted houses with each room a given area and perimeter. Paige feels as though technology can provide relevant and real-world experiences to her students. Paige states, "Most careers that these students will have will utilize technology. If they can start to understand that from now, they will be more comfortable with it later."

Samantha

Samantha has been teaching at the elementary level for the past eight years. She is a 32-year-old White female who understands the importance of technology integration in Title I schools. Samantha feels highly comfortable using technology and uses iPads, Bloxels, Merge cubes, a green screen, SmartBoard, and robots such as Dash and Dot, Sphero, and Ozobots. She finds that seeing the excitement in her students' eyes is the most rewarding aspect of teaching, especially the enthusiasm from projects that use technology.

Samantha takes pride in her technology-rich classroom. When other teachers or parents look at her bulletin board or pop into her class to see the great things happening with technology, she cannot help but feel proud. In her classroom on a daily and consistent basis, Samantha will use Nearpod, Flipgrid, Zearn, and the PHeT simulation program. However, throughout the year, she will find other technology activities to enhance projects. Some of these technological enhancements include Ed Puzzle and Goose Chase.

Tiffany

Tiffany is a 26-year-old teacher who has been teaching for nearly five years. She has had experience teaching both the 4th and 5th grades. Her current teaching assignment requires her to teach math primarily for 101 fifth graders. Tiffany finds that the most rewarding aspect of teaching is when students finally understand a concept after months of struggle. She enjoys watching her students move through that productive struggle and grow in their learning.

While Tiffany finds that her older peers feel as though there is a danger of technology taking over the classroom, she feels as though technology can never replace the teacher. Tiffany explains, "Technology on its own cannot do what a teacher does, from making connections to giving encouragement and feedback, nothing can replace a teacher's love and passion. Just look

at the current pandemic!" Tiffany finds herself to be somewhat technologically savvy. She considers the value of technology that she uses, what works, and what does not. "Not all technology is effective," she explains. Tiffany looks at the rigor of the program and how well the students engage with the content.

Results

This section offers details on how the research was completed and the results of the study. After the one-on-one interviews, focus groups, and journal responses, I used Moustakas' Phenomenological Reduction to analyze the data resulting in the findings reported in this section. This section will conclude with a summary of chapter 4.

Theme Development

In this section, I provide the results of the study, and the analysis utilizing Moustakas' (1994) phenomenological reduction. I will then describe the coding process as well as textual, structural, and composite descriptions that drove the development of emerging themes. I will address each research question and end with a summary of chapter 4. In any qualitative study, the development of themes is a critical component of data analysis. I transcribed one-on-one interviews, focus groups, and journal responses and analyzed each to identify essential answers to the research questions inquired in this study. Themes emerged from this analysis that described the experiences of Title I elementary teachers' use of educational technology in the 21st-century classroom.

Data Analysis via Phenomenological Reduction

Data analysis started with horizontalization. After all one-on-one interviews, focus groups, and journal responses were collected, I transcribed the interviews and focus groups using the Otter software application. Then I reviewed each of the transcriptions by hand to ensure that

there were no discrepancies. I first began the horizontalization process when reading the transcripts and journals as I wanted to become familiar with the data. After the epoche, horizontalization is the next step in phenomenological reeducation (Moustakas, 1994). I initiated this step of the phenomenological reduction process by listing relevant and significant statements, understanding that each has equal value. I began to hand-code the transcripts and journals to identify any repetitive statements and to generate a list of reoccurring terms or phrases (Creswell & Poth, 2018). I analyzed each piece of data a minimum of three times and removed any extraneous terms (Moustakas, 1994). Next, these transcriptions and journal responses were uploaded into the NVivo software program and given a preliminary code based on relatedness. Horizontalization occurred again in NVivo through the progression of coding, classifying, and the development of themes. The next step in phenomenological reduction was to cluster the meanings into these emerging themes.

Synthesis of Meanings

Utilizing Moustakas' (1994) phenomenological reduction, I considered the phenomenon with an open mind and, with the assistance of the epoche, from different perspectives. I identified units of meaning, or horizons, and described the phenomenon in textural descriptions. From the textural descriptions, I was able to construct the essence of the experience using my intuition, or imaginative variation, in the structural descriptions. Textural descriptions were established to describe what participants experienced when integrating technology into the Title I elementary classroom (Creswell & Poth, 2018). Structural descriptions explained how the participants were trained in technology integration. Then, a synthesis of meanings was developed to describe and explain the experiences of the participants with educational technology integration in the elementary Title I classroom.

Textural Descriptions. Many of the participants enjoyed using technology in the classroom. Few were hesitant to use new technology if they were unfamiliar with the program or tool. Nearly half of the participants felt that they did not have adequate training on effective technology integration. Some felt as though they had significant support from administration and were not only trained on current technology trends but were also encouraged to create professional learning networks on social media to keep up with these emerging trends. In general, participants wanted to be prepared to utilize technology effectively and to train their students on efficient technology use to prepare them for 21st-century skills. Each of the participants trained their students by modeling how to use technology in whole group and small group instruction. The participants felt that technology integration is essential, especially for Title I elementary students who were already economically and academically disadvantaged.

Structural Descriptions. Participants were able to seek out meaningful training opportunities for educational technology integration. Some utilized Twitter and other social media and created professional learning networks. Others had administration who found technology to be a priority in student learning and allowed teachers to grow in their technology skills and knowledge. Thus, teachers had more opportunity to pass this knowledge on to their students. The motivation for the teachers' technology integration is highly influenced by the administration's attitude and enthusiasm for technology.

Participants discussed how they taught everyday essential technology skills, such as training students to use email appropriately and conduct proper research. These are skills needed for the future, in both higher education and future careers. Students were also taught about digital citizenship. Each participant understood the need for Title I students to be proficient in technology use and its importance in the future.

After horizontalization, I reviewed the data that I collected from the one-on-one interviews, focus groups, and journals and then grouped these statements into more significant components, or units of information, thus creating themes (Creswell, 2013). Open coding was utilized, and clusters were developed from the data received into NVivo from transcripts from fifteen one-on-one interviews, journal responses, and two focus groups. There were thirteen preliminary codes assigned to NVivo (Appendix H). Next, I formed categories by grouping similar generated codes. Finally, themes began to develop from the grouping of categories and clusters of meaning (Appendix I).

The significant themes began to develop after horizontalization and clustering. A total of five themes emerged from the collected data after analysis. These themes addressed the four research questions in this study.

Table 4.1

Theme and Corresponding Horizons

Theme	Corresponding Horizons
1. *Emerging vs. Traditional Technology*	Technologically-savvy
	Technology tools used
	Most beneficial technology
	Least beneficial technology
2. *Benefits and barriers of technology use in the classroom*	Time (benefit and barrier)
	Training (benefit and barrier)
	Student engagement (benefit)
	Student efficacy (benefit)
	Collaboration and communication (benefit)

3. *Attitude toward technology influences teacher self-efficacy*	Attitude of administration influences teachers Attitude of teachers influences technology use Attitude and technology use influence teacher self-efficacy
4. *Administrative support*	Training View on the value of technology Incentives Teacher leaders Mandated vs. professional freedom
5. *Importance of technology skills for Title I students*	Economically disadvantaged Academically disadvantaged College and Career Ready

The study addressed the following central research question: How do Title I elementary teachers describe their experiences utilizing educational technology in the classroom? The participants in the study discussed what types of technology they used in the classroom most often, which was most beneficial, and what was least helpful in the Title I elementary classroom. The first theme that arose as a result of this central research question was: emerging vs. traditional technology

Emerging vs. Traditional Technology

The first theme emerged initially from the participants discussing the types of technology that they utilized in their classrooms daily. There were numerous devices, tools, and applications that participants disclosed in the interviews. However, there began to emerge a disparity in the

types of technology used in the classroom. Additionally, teachers differed in what technology they deemed as "technologically savvy."

Technologically Savvy. Some teachers would claim that they were significantly savvy with technology and would go on to describe how they would use PowerPoint, YouTube, or Microsoft Word every day. Other teachers would explain how they introduced their students to more emerging technological trends, such as using Nearpod in groups during morning work and recording videos on Flipgrid as an assessment choice afterward to respond to the lesson. Five participants designated collaboration tools such as Google Docs or even the use of architecture and coding tools for math. For example, Natalie, who considers herself very technologically savvy, stated

> For science and math, I have a robot center and a coding center. During reading, I would have the kids reading a book and then respond with a recording on Flipgrid.

Natalie described utilizing some of the newest technology trends in her daily classroom routines. Likewise, Melissa describes her classroom as technology-rich, using numerous platforms for students to respond to lessons or prompts in a variety of ways. She explains,

> Choice assessment is huge in my classroom. Students who are reluctant writers can choose to respond to a writing prompt with a Flipgrid video. I also can assess gaps in understanding using Nearpod within my lessons. For example, students created a news broadcast this semester to identify point-of-view. We also used online graphing tools during math. Technology gives so many options to the different learning styles in my classroom.

Both Natalie and Melissa describe themselves as reasonably tech-savvy, eager to try out the newest tools with their students. Both report a love of technology in and out of the classroom.

Whereas, Helena, who also considers herself a technological enthusiast, describes her standard technology use by explaining that she would

> use a lot of PowerPoint, YouTube, and google. For example, instead of just telling the students what a noun is, we can put up a picture of an animal or a person on the screen.

Helena was not alone in considering her technology integration significant in the classroom while only utilizing traditional technological platforms. Many of the participants considered themselves well versed in technology due to understanding how to boot up a computer and use PowerPoint to teach a lesson. However, Melissa responded that her perception of being genuinely technology-savvy reaches far beyond merely understanding how the technology works. Instead, knowing how to use modern technology to enhance learning and effectively incorporating its use into personal, professional, and educational situations.

Technology Tools. Each of the participants discussed what technology tools and applications they used in their classrooms for teaching and learning. Thirteen of the participants found that collaborative and responsive technology was the most beneficial technology used—this type of technology allowed for higher engagement and creativity. When asked about the most helpful technology used in the classroom, Samantha responded,

> I would definitely say Google Classroom for an overall house right for everything due to the interactive level. I would also say that Flipgrid is incredibly beneficial. I have witnessed extremely shy students who don't want to speak in class just open up and spend four minutes talking passionately about their project in a recorded video.

Samantha finds that some of the latest technology brings out collaboration and engagement in the most reluctant of students. Paige also shared the story of a student who was considered high functioning autistic, who would not participate in most classroom activities.

With the help of tools such as Flipgrid and Nearpod, the student is now thriving "on her own terms." Anna, who teaches Pre-K, explained that even at the younger grade levels, engagement is essential. She found that students are used to screen time, and the SmartBoard is an excellent way to engage them. She adds,

> Whether we are doing an educational software game that I have or something on a website, they enjoy it just because they are used to that kind of medium. It gets their attention and keeps them focused most of the time.

Anna has found this true of all her Pre-K students. They no longer get excited over worksheets and coloring pages but seek to interact with their learning in a more meaningful way. Thirteen out of fifteen of the participants agreed that the most beneficial technology used in the Title I classroom was any technology that engaged students and allowed them to be creative and collaborative.

When asked to describe any technology tool or application that they found was not beneficial to academic growth, nine of the fifteen participants found that the school or county mandated benchmark program was least valuable. While the benchmark program was different based on the county, each of the nine participants found it to be lacking in providing accurate data, and some even considered it a "waste of time." Tiffany explained,

> Istation is the least beneficial program we use. I don't think the diagnostics are accurate. The students are usually sitting in levels that are above or below their level. It is definitely not engaging for these students. Technology needs to be engaging. The kids want to participate so that they actually put forth an effort. It is a time killer, and people don't use it effectively. Honestly, the people [administration] who task us to use it have not been in the classroom in decades, and it shows.

Tiffany explained that her students were required to spend numerous hours per week on the benchmark program, and felt that there were other more effective ways to teach the curriculum. Many of the other Title I teachers in this study agreed. While they understood the need for a benchmark program, they found that the students were getting bored and not using the program effectively. Most explained that the school, or district, mandated a specific amount of time per week to the benchmark program, and many students were in a hurry to finish and no longer trying. The teachers felt that this was giving unreliable data. Three of the fifteen teachers explain that they are uncertain of how to read the data from these programs due to lack of training. Anna states,

> When students have to do Istation, they have to do 20 minutes every day. They get bored. I have not seen yet what the benefits of the program are. I am not good at researching the data of that because we got introduced to Istation about five years ago. We have had no training since then. We are supposed to use it to gather data on the students, but I don't even know how to do that.

Anna describes her lack of training as leading to misunderstandings of the program and the inability to utilize the reports correctly. She goes on to explain, "we are asked to use it, but not taught how. The administration will pull the data, but I have no idea how to even read it or use it to guide my instruction." Beverly felt as though she understood how to use the data to drive instruction, but felt that the students did not put forth any effort in the program and tried to complete the allotted time quickly so that they could move on. Cara felt as though her students considered their benchmark program a "chore" and would rush to complete it.

Of the fifteen participants, six found that all technology was useful. While most of the participants were in agreement that the mandated benchmarking programs were ineffective, six

or the participants explained that all technology used in their classrooms had a purpose. These six participants also had a positive attitude when it came to technology integration, and five of the six felt as though they had more than adequate training. Melissa clarifies that:

> All technology has a purpose. I am given the freedom to use what works best for my students. So, I cannot honestly give you an example of technology that I use that is not beneficial to my students. Even iReady can show me where there are gaps, and I can use this data to create my small groups. There are ways to keep them interested, even in iReady.

Melissa felt as though she understood what the program was meant for and relayed that information to her students. Her students understood how to read the data from their scores, as well. They would keep track of data through data binders. Samantha also uses the program to drive instruction. She reports that she is able to find gaps in learning and celebrates the students when they make gains.

Results in the study identified emerging and traditional technology tools utilized in Title I elementary classrooms. Participants were able to determine which tools they used most, which were most beneficial, and what tools were least helpful to students learning. Seven teachers utilized traditional technology for teaching and instruction, while eight participants describe utilizing more emerging technology trends. All participants found that it was important for students to use technology that is engaging and allowed for creativity, critical thinking, and collaboration.

After identifying how Title I teachers use technology in the classroom, this study also asked three sub-questions. The first sub-question asked: How do Title I elementary teachers describe their technological awareness and their ability to integrate current educational

technology into their classrooms? Two themes emerged from the data that was gathered that answered the sub-question. The second theme that emerged was: benefits and barriers of technology use in the classroom.

Benefits and Barriers of Technology Use in the Classroom

The first theme that emerged as a result of the first sub-question identified the benefits and barriers that Title I teachers encountered during technology implementation. Data gathered from the participants determined that there are numerous benefits to technology use in the classroom.

Benefits of Technology Use. Some of the benefits of technology that the participants disclosed included engagement, collaboration, excitement, increased student-efficacy, time management, differentiation, accommodations, and communication. Nine of the fifteen participants utilized data from technology to guide their instruction. All the participants in the study used technology for communication and increased student engagement. Nichole, who feels incredibly comfortable using technology in the classroom, discussed her small group interactions:

> the kids are in centers, and they're moving around, and they're conversing with each other. They have meaningful dialogue; there's an open-ended question that's presented on Flipgrid, with an embedded video that really makes them think critically and collaborate on responses. They're challenging each other with teams and collaborating. It is learning, but it is fun.

Nichole explains that this is typical in her classroom. Students enjoy this type of learning and get excited during the introduction of new concepts. Like Nichole, other teachers describe how

technology assisted struggling learners and those who lack confidence in their learning. Paige added how:

> building confidence in these kids allows them to have their voice heard. I have students that know how to use certain technology and will ask me if I will let them help their peers. Some of these are students with learning difficulties, and here they are being leaders in the classroom because they are familiar with a program or application and want to help someone else in the class.

Nichole and Paige both describe struggling students who became classroom leaders because they can help their peers with a technology format. These participants discussed how they had witnessed students' growth in self-esteem and efficacy due to being allowed to assist their peers with technology. Moreover, some programs allow students who are struggling with specific content areas to find new and meaningful ways to address these difficulties. Felicia discussed a program that some of her lower-achieving math students found success using. She describes, "…an incredibly engaging math program called prodigy that is really interactive. It is like a video game; they earn things while learning. They really enjoy it and ask to use it as a reward for completing their classwork early." Felicia is one of six participants who have sought new and emerging programs in the hopes of finding engaging technology that students will enjoy while learning specific academic content.

Time was both found to be a benefit and a barrier to technology integration, depending on the participants' experiences. Six out of the fifteen teachers found that technology helped with time management. Tiffany, a technologically savvy 5th-grade teacher, explains that she uses the Google platform for:

> the homework completed the night before, and I could assess what needed to be addressed in class the next day. Those trends and common mistakes could be addressed in class instead of going over it during precious class time. I used it as homework and during station time. Again, I used both Google slides and Google forms in the stations so that I could provide quick feedback on them, as well.

Tiffany takes advantage of the grading that Google offers so that she can know what needs to be reviewed in class the next day. It saves time and gives her instruction a direction. Jake adds to this sentiment by discussing how he also utilized Google platforms for homework. Jake reports that this technology makes his life easier. Jake described how at the beginning of the year, he thought, "How am I going to check 101 pieces of math homework each night?" With the use of Google docs, this task is less burdensome.

Barriers to Technology Use. Other teachers who felt less comfortable utilizing technology gave "time" as a barrier to technology use in class. Many thought that they did not have time to add to the numerous tasks that they had to complete each day. Felecia confirms

> The school that I teach at doesn't provide any type of technology enrichment. This technology could give students much needed challenges and enrichment, but my current school is not offering any of that. They are so focused on the state standardized test, and there is just no time for that.

Felicia also goes on to describe how she feels as though she is doing her students an injustice. She reported that she understood that her students need more exposure to technology-rich instruction; she feels the burden of state-mandated testing on her shoulders. Beverly also feels as though the technology component is essential. However, the technology that she uses in her class

is mandated by the administration. There is little to no time for integrating anything beyond that. Beverly elucidates,

> I don't have much time to search for or learn about additional technology. I can barely keep up with the curriculum right now. But I do look for videos from Jack Hartmann now and then, when I can.

Beverly also expressed the desire to use more technology but reports a fear of disapproval from her administration. Most of the teachers in the study who had difficulty finding time to implement technology also did not consider technology use in the classroom a priority. Other barriers that the participants discussed when integrating technology were lack of training, student distraction, low bandwidth, and inappropriate programs for academic or grade level.

Overall, teachers who claimed to feel comfortable with technology use identified more benefits to technology use in the classroom. Those participants who felt uncomfortable with technology integration, or deemed themselves having little to no technology awareness, identified more barriers to incorporating technology into student learning. The participants' overall attitude toward technology influenced their perceptions of benefits and barriers to technology integration. This study demonstrated that there were numerous benefits and barriers to technology use in the classroom. Depending on the teacher's attitude and experiences toward technology use for learning, participants felt that technology had a positive influence on collaboration, student engagement, and communication. Nine of the participants said that time was a barrier to technology use, while six teachers described time as a benefit to technology integration. The participant's technological awareness did influence their ability to integrate technology into their classroom. Thus, another identified theme that addressed the first sub-question was: attitude toward technology influences teacher self-efficacy.

Attitude Toward Technology Influences Teacher Self-efficacy

The data collected in this study show that the participants' attitude toward technology influences their self-efficacy. Furthermore, the position of the administration when it comes to technology integration affects the attitude of the teacher.

Attitude. In this study, the participants who were passionate about technology use also had administrators who made technology a priority. Natalie describes her principal as passionate when it comes to emerging technology. She reports:

> He's [principal] like, all right, let's learn about this! Usually, it is a technology that he's already experimented with, and he'll show it to us. He's familiar and comfortable with it and is excited, so we feel excited.

Natalie, along with seven other participants, felt that the position of their administration reflected the attitude of the teachers in their school. These eight participants reported school leadership that prioritized technology use in the classroom, was eager to invest in training initiatives, and gave abundant opportunities for the faculty to have access to training.

However, seven of the fifteen participants were cautious about using new technology. They are comfortable with technology that they use every day in their classroom but feel uncomfortable with the introduction of a new technology platform. Anna states,

> I feel good about the technology I use now, but if I get introduced to something new, I am hesitant and apprehensive about it.

Anna goes on to elaborate on how she dreads the beginning of the year when the administration describes what technology tools may be implemented within the school. Like Anna, Helena likes to use the technology that she is familiar with and has used over the last few years. She does not

seek opportunities to identify new or emerging technology to use with her class, nor is she encouraged to do so by her administration. Helena illustrates,

> I don't have a ton of time to look for outside opportunities to find new technology. I don't know how beneficial it would be for my students anyway.

Both Helena and Anna were teachers who do not feel entirely comfortable with technology use. They also have not been introduced to new technology by their administration, nor have they been offered technology training in the last few years. Their perceived view of the administration is that the leadership in the school values test scores above all else. Technology is an afterthought. Both have stated that they have not had any type of real technical training in the last three years.

Conversely, eight of the fifteen participants expressed a great desire to learn more about technology. Nichole declares that she loves technology. She explains,

> If the principal asks me to try a new program or tool, I'm instantly excited. I know he will send me to get training, and if he loves it, it will be good for my kids.

Nichole shares the principal's enthusiasm for technology integration. Paige also feels good about technology and her ability to use it effectively. She describes the professional development that her principal offers are constant and ongoing. Paige enlightens,

> He has brought in the Nearpod educators to, you know, help us, and he's encouraged us by really bringing in that awareness of the new technology that is out there, suggesting certain people and programs to check out. I just want to be able to keep up with him.

The participants that have a love for technology use and share excitement to learn more report having an administration who saw the value in technology for teaching and learning. In contrast,

those seven participants who were hesitant to learn more about using technology for teaching did not feel supported, nor were offered training by the administration in their school.

Self-efficacy. The collected data presented that teachers who had a positive attitude toward technology were not only more apt to use it but had higher instances of teacher self-efficacy. Participants that had negative views about technology also lacked perceived efficacy. Anna was an example of a participant who has a negative attitude toward technology. She reports,

> I can barely use my email. So, I am not a fan of throwing something new out there. For example, I don't care for One Drive, and everyone else is like 'it is so wonderful; you don't have to save anything it is all automatic,' but I cannot ever find what I am looking for. I have lesson plans in there and can't find them! To me, if it works, let's just use what we have now.

Anna explained that she often has her daughter come in and help her with technology in the classroom. Anna shared that she has feelings of inadequacy and wishes that she was "better" at using technology to help her students. Anna is not alone. Julio also feels as though technology is unnecessary in the learning process. While Julio does not necessarily feel insufficient, he explains that technology is more of a distraction and often wastes precious instructional time. Julio states,

> I really don't think that technology is that important. It can be useful, but it is not necessary. We don't need these devices and apps and things to be successful in the classroom. I use the doc cam, but everything else can just be a distraction or waste of time, especially if I am not familiar with it.

Julio does not have an administration that encourages him to utilize technology with his Title I students. He believes that he must focus on preparing them for the next grade level. Cara agrees with Julio and Anna. She also considers herself uninformed about the latest technology and does not feel as though she is savvy enough to bring the most up-to-date tools to her students. She claims:

> I am not a techy person, but whatever programs we are instructed to be using, I try to learn them very well. That way, I can help the students and help myself to gather data. But there are times when I see other teachers using technology things that are not familiar to me, and I feel like I am not doing right by my kids.

Cara expresses the wish to be more knowledgeable about the technology that the administration is mandating her to use but does not have a clear course for training. She often must use YouTube or go to a peer teacher for help. However, when she notices that her peers are using other, more emerging technology tools to help their students, she feels insufficient in her teaching skills.

The data collected indicated that the attitude of the administration has a significant impact on the position of the teachers when it comes to technology integration in the classroom. In turn, the attitude a teacher takes toward technology use in teaching and learning directly affects the teacher's technological self-efficacy. When the administration puts an emphasis on technology and makes its integration a priority, the teachers will follow suit. If the administration is passionate about emerging technology trends and shares these with their staff, the teachers will share in this passion, which will create a higher self-efficacy in technology use. The teachers in this study who had a negative attitude about technology use or felt uncomfortable using technology did not have an administrative team that depicted value in technology. These seven

participants stated that they had little to no training and limited professional freedom when it came to using emerging technology in the classroom.

Administrative Support

In this study, the second sub-question asked: How do Title I elementary teachers describe their experiences with professional development and training initiatives designed for educational technology integration in the classroom? The theme that arose from this question was: administrative support.

Training. After the collected data was transferred into NVivo, the coding frequency of cited concepts was established (Appendix H). The most frequently identified concept was training. All fifteen participants established the importance of training. However, only eight of the participants felt that they had experienced adequate training in technology. Seven participants described little to no training in technology in the last three years. Anna has difficulty with simple technology tasks, such as email and the district grading system. She feels as though:

> Training is scattered. They [administration] just assume that you know about technology because people that are coming out of college now are much more computer savvy than some of us that have been there for a while. So, sometimes it is a little bit frustrating. They tell us to do something, and we have to figure it out on our own.

Anna explains that she must go to her peers to get help with any type of technology that she uses in her classroom. She is usually embarrassed to ask. Cara has had the same experiences as Anna and feels inadequately trained in technology. She also describes feeling ‘alone’ and on her own when it comes to having to figure out any school mandated programs. She explains that:

> They [administration] don’t usually give us training. Most of the time, they introduce the new program and basically say, “here is what we are going to be learning. Learn on your

> own, or find a friend to help you." There is little training. Many times, there are so many things you can do with that program, but if you don't know how to work the program or don't have the time to figure it out, are you really getting the full benefit of it?

Cara went on to add that she has been using a program for the last five years and only recently found new aspects of the program that would have been helpful. Had she had the opportunity to be trained appropriately, she would have taken advantage of these sooner. Debra and Felicia also report that their administration does not offer many training opportunities, nor do they perceive that technology is a priority at their school. Both explain that they have a technology person at their school; however, their job seems to deal more with technical issues with devices. Although this technology person does offer help on learning any programs that their administration mandates, the training is voluntary. Debra illustrated that:

> I mean they always make training available with our tech person, but it is something that you would have to do on your own time, like planning time on Wednesday. Also, it is optional. So if you want to get any technology help, see the tech person in this room on this date. But it always seems that some other pressing matter takes precedent.

While the school technology person is available during planning time and after school, it is not a priority of the administration for its staff to attain this training. Thus, the faculty may also not make it a priority. According to Debra, many of the teachers have too much to accomplish every week, and they will not take their personal time to seek help. Julio also felt as though his administration did not make technology a priority at his school. He shares that he, too, feels like technology is not an essential component in the learning process. He postulates:

> I really don't think we need to use so much technology. They [administration] do not prepare us well when it comes to technology at all. Especially our older teachers, they are

> the most resistant and give the most push back. I feel like they leave us alone when it comes to technology use, and I am good with that.

Many of the participants seemed to share the position of their administration. If the leadership of the school does not find value in technology integration, the teachers were less likely to identify its importance in the classroom, also.

In contrast, eight of the fifteen participants described their administration as highly supportive in technology integration and training. Not only did these participants disclose that they received a great deal of training in technology integration, but they also described their administration as passionate about technology and eager to create "teacher leaders" within their facility. Melissa explains that:

> The way that he [the principal] prepares us is by doing things himself and showing us how easy it is to do it. He makes it available to us both physically, or by helping us get those funds to make it [training] happen. He makes sure that we get trained and that we learn about the technology so that we can have groups of our peers come back and train the rest of the staff.

Melissa goes on to describe how her principal seeks out teacher leaders in his school that will help incentivize other teachers into wanting to learn more about technology. Natalie also reports that her principal looks to identify teachers in his school who are as excited about technology as he is. He seeks out instructors who want to learn and share with their peers. She explains,

> So he [principal] always makes sure to find those people [teachers] who are tech-savvy, who learn and want to learn, and then who will also teach and share with their team. He gets us excited about it, like 'look what this can do for our students!' Then he finds those

teachers who are just as hungry about it and sends them to training. Then he will give the rest of the staff opportunities to learn from the trained teachers.

Melissa, Natalie, and four other participants find that the administration plays a vital role in the attitude of the faculty when it comes to the enthusiasm of technology training and integration. All the participants find this administrative attitude contagious. Additionally, when the administration offers teachers the opportunity to become trainers and lead their peers, it increases teacher 'buy-in.' It allows teachers to feel a sense of control over their instruction.

What is clear from the data is that participants who felt supported by their administration reported receiving the training necessary to integrate technology into their classrooms effectively. Additionally, the administration also exhibited excitement and enthusiasm over technology use. They would create 'teacher leaders' within the school that would participate in technology training and then return to school to work with teachers who struggle with the technology. Some teachers described administration who created Ed Camps on their school campuses, invited representatives from technology companies like Nearpod or Flipgrid to speak to their faculty, or encouraged the use of Twitter and other social media platforms to find professional learning networks. One participant reported that her principal holds 'Tech Mex Thursdays' where he brings in Mexican food for his faculty while they are learning about new technology.

Alternatively, seven participants reported administration suggesting for them to seek out a peer for assistance or the technology person on their own time. Three participants explained how their administration told them that in the fall, they would be utilizing a new benchmark program and that, during the summer, they should explore the application and 'figure it out.'

Each of these participants felt as if they were on their own. These feelings impacted their attitude about technology as well as their perceived self-efficacy.

Mandated vs. Professional Freedom. All the participants discussed the district-mandated benchmark program utilized to gather data on students. The participants that reported administration giving professional freedom to incorporate other technology into the curriculum did not negatively view this mandated program. Those participants that had little to no technology training felt that the mandated benchmark program was a 'waste of time' or labeled it the least beneficial technology utilized in their classroom. Cara finds that her

> administration says that everything has to be related to the school and beneficial to the students. They [administration] check to see if we are giving students at least four lessons in Istation per week. They tell us we must use the Zearn program for math, Connect Ed for reading, and HMH for science. So, time is a problem. Our admin requires these programs, and they check to see if I am using it. So, when do I have time to find new technology for the students to learn with?

Cara feels as though there are so many mandated programs that she has little to no time to identify any new or emerging technology tools that would benefit her students. Julio also has an administration that dictates how and what programs he must use in his classroom. He reports that the program that is mandated by the leadership is not useful and explains:

> The school-wide data program, I would just get rid of that if I could. The students hate it, and I am sure that it costs a ton of money. I've seen teachers put the students all the program all day when they have substitutes. It is forced on us even though we don't find it useful. I am always resistant because I am sure that there are better programs out there.

Both Cara and Julio find that their administration has a ‘one-size-fits-all’ approach to technology, and there is little to no professional freedom. Conversely, teachers who have more freedom to identify what works and what does not when it comes to technology in the classroom have an overall better attitude toward the mandated programs. Tiffany confirms this by describing being allowed to find programs that work for her students. Tiffany states that her administration communicates their confidence in her by reminding her that ‘she is the teacher.’ They understand that she recognizes the needs of her students better than anyone else. Tiffany explains,

> They [administration] give me a lot of professional freedom. They ask questions about what I am doing [with technology], but they give me the freedom to explore. They will also take what I am doing, and if it works, they will allow me to train other teachers. They set aside a time for me to help others. For example, second grade can come in during their planning time and learn how I use Doceri to engage students in learning. They really support any and all technology that is effective and engaging for the students. Even though we don’t have a tech person or one-to-one technology, they support the teachers using and exploring new technology.

Tiffany is one of the seven participants that feel as though they have the professional freedom to identify and use technology that works for their specific students. Samantha’s administration not only encourages her to seek out peers within her professional learning network to find new ways to use technology in the classroom, but they are always eager to help her employ these new programs into the curriculum.

> I have a ton of professional learning networks on social media that I use to get resources from. I know it doesn’t look like I am researching, but I am always looking for ways to

enhance learning with technology and interactive lessons that keep students engaged. When I find something really great, I go straight to his [principal] office to tell him about it. He is always like, 'go for it!' If it works, I can bring it to my team, and if not, oh well.

Tiffany is one of seven of the participants that have an administration that is flexible when it comes to technology use in the classroom. Aside from the county mandated program, these participants state that they are encouraged to explore and find new technology programs that will assist in delivering the content to Generation Z students in an effective way.

In brief, seven of the fifteen participants felt as though they had the professional freedom to identify what areas of technology training that they found meaningful and were able to take part in these training opportunities. Meaningful training was a concept that was brought up quite frequently in the data collection. When teachers felt that the administration trusted them to recognize when and what type of training was needed to be successful, they felt as though they had a voice, and the administration valued their professional opinion. The gathered data demonstrates that when teachers are given a voice in technology integration and allowed to have the professional freedom to identify what works best for their students, they have a more positive disposition about technology in general.

Importance of Technology Skills for Title I Students

This study focused on Title I elementary schools and technology. The fifth theme derived from the third sub-question: How do Title I elementary Teachers describe the strategies they use to assist students in learning to utilize educational technology to enhance knowledge acquisition effectively? The theme of the importance of technology skills for Title I teachers emerged from the data collected.

Economically and Academically Disadvantaged. Every participant in this study understood that the students in their care had unique needs due to being economically disadvantaged. Each school represented by the participants in the study had a population of disadvantaged students that lacked many of the provisions needed to be literate in technology skills. All fifteen participants understood that while students had access to a cell phone, most families did not have other devices such as computers, iPads, or tablets. Fourteen of the fifteen participants considered this to be an additional challenge for teachers and students alike. During a focus group discussion, Cara declared this to be of utmost importance due to students already being at a disadvantage due to economic barriers. Debra agreed and added that while the students were well versed in applications such as TikTok or Instagram, they lacked the skills needed to be college and career ready. Debra stated, "We need to prepare all students regardless of socioeconomic status, race, or whatever it may be, for the global marketplace, because it is definitely going to be digitally driven. It is up to us to bridge this widening gap." In the same focus group, Felicia described the environment that her students lived in outside of the school campus and explained:

> Our students should be able to have the opportunity to break the cycle so that they are not always going to be the ones living in those trailers outside of the city limits. So that they can have opportunities and go to college, type a resume, something other than playing fortnight or scrolling through Instagram. We have to help them to break this cycle.

Julio, who is not a significant advocate for technology in the classroom, described the importance of preparing his students for the future. Julio adds, "I guess it is pretty important since they will probably use technology for the rest of their lives. Since many don't have technology at home, then schools should be exposing it to them in class. It may be the only time

that they are exposed to it effectively." One hundred percent of the participants in the study understood the importance of Title I students learning how to use technology for learning efficiently. Even participants who perceived themselves to be lacking in technology skills or had little motivation to use it in class still recognized the importance of providing training to students who are academically or economically disadvantaged. Each found it essential to be able to assist students in maintaining a 'level playing field' with traditional students.

College or Career Ready. Most of the participants understood that technology is a way of life. Any future career or college program will be inundated with technology. For Title I students to be competitive in college placement or the job market, they must have the technical skills necessary to succeed in both. Twelve of the fifteen participants assumed that they were responsible for teaching Title I students the technical skills needed to prepare them for the future. Each of these participants believed that their Title I students lacked technology resources, skills, and experiences outside of the classroom. During a focus group, both Jake and Samantha discussed teaching students real-world technology skills. Jake began to teach his fifth-graders how to use email efficiently. He not only teaches them how to send and receive an email, but proper email etiquette as well as digital citizenship. Samantha agreed, stating that she has begun to teach her 4th graders how to conduct research. She is instructing them on how to utilize the county database, how to identify trustworthy resources, and finally, how to write up research data in MLA format. Paige also agreed, stating,

> There are very few careers that they'll [students] go into in the future that won't need that technology piece. The sooner that we get them acclimated to using technology for real-world practice, the more likely they will be successful.

The consensus for all fifteen teachers was that "technology is not a fading trend, but is a concept that is here to stay." All the participants believe that technology is an essential component of learning and will be utilized in the everyday aspects of all college programs and future careers. Thus, it is critical for Title I students in elementary school to become familiar with real-world technology practices.

Technology Training for Students

Most of the participants found that the goal of technology training for students is proficiency in technology outside of the classroom. Title I students must also be prepared for middle school, high school, then college or career. All participants in the study not only understood the importance of technology training for Title I students, specifically each described ways in which they trained their students in how to use technology effectively. Twelve of the fifteen teachers use the first week of school to educate students on the technology that the class uses throughout the year. Melissa describes how she trains her first-graders in steps. She logs in as a student on the overhead projector and takes them through the process, step-by-step. She does this with all the programs that she uses; Nearpod, Zearn, and Flipgrid. Melissa explains, "the students who pick it up right away can assist other students."

During a focus group, each of seven participants described how they would model for students by using technology as the students would in the upcoming year. Three of the participants would explain to the students why they were using the technology and how it would benefit them in their growth and learning. Elijah explained that he not only feels that it is vital to model student technology at the beginning of the year but also to model enthusiasm for the use of technology throughout the year. He goes on to add:

> I think that there is another technology divide with the facilitators. Old school teachers who are not technology-savvy don't use technology as much in the classroom. When students see that their teacher is hesitant to use technology, they will also be hesitant. We have to model using technology by actually using technology, often and appropriately.

In both focus groups, all the participants describe modeling and practicing using technology in whole group and small groups. Many participants felt that if the teacher in the previous grade level gave an adequate technology foundation for the current teacher to build on, the chances of students being successful in technology use increased significantly.

The data gathered indicates students need to see their teacher modeling technology effectively. Some also believe that if students understand why they are using specific technology and how it can help them academically, the technology will be more meaningful to them. Finally, if the administration has all its faculty on the same page when it comes to technology integration and the importance of technology use for learning, each grade level will effectively build technology skills upon the previous technology training of students.

Research Question Responses

This section addresses the research questions that guided this study. Three sub-questions assisted in addressing the central research question: How do Title I elementary teachers describe their experiences utilizing educational technology in the classroom? The first sub-question sought to understand how teachers felt about their technological awareness. The second sub-question sought to identify how teachers described technology training. The final sub-question asked participants about strategies they use to train students on technology. The responses to these questions provided an understanding of educational technology integration in the participants' classrooms.

Central Question

The central research question for this study was: How do Title I elementary teachers describe their experiences utilizing educational technology in the classroom? The participants in this study described utilizing various technology tools, both traditional educational technology tools and new or emerging programs. These tools, programs, and applications are used for communication, collaboration, engagement, critical thinking, and data collection to drive instruction.

Many of the participants whom I interviewed reported that they found themselves to be technologically-savvy, using various modes of technology in their classrooms daily. While each participant uses some type of technology each day, eight of the fifteen participants use emerging technology compared with seven participants who only use traditional technology in their lessons. Participants such as Paige, Melissa, and Samantha reported using Nearpod, Flipgrid, and Google Classroom regularly. Whereas Anna, Beverly, and Debra reported using PowerPoint and YouTube as the technology they used each day. Those participants who describe themselves as significantly technologically-savvy reported using technology at least half of the day in some way.

All the participants utilized the overhead projector during instruction in the form of a SmartBoard, document cam, or Doceri. Seven of the participants use PowerPoint or internet applications during instruction. Eight participants utilize newer technology tools such as Nearpod, Flipgrid, simulations, and Google Classroom. All the participants felt that technology was relevant for engagement, collaboration, and data collection. Some of the participants used technology in small groups using differing platforms. Other teachers reported using technology

in whole group lessons. Most participants found that the most beneficial technology was any technology that facilitates reinforcing what the participants are currently teaching in class.

Seven of the participants utilize technology to communicate with both parents and students. She elaborates, “Classdojo has been the most beneficial tool since we have begun working from home [remote learning]. They [students] can post their portfolios and communicate. I can send them messages without going through their parents. Now that I am using it here, I can see how it would be beneficial when we go back to school. I really want to delve deeper into it when we go back to the classroom.”

Participants discussed the types of devices they provided students in the classroom. Most of the teachers had both iPads and laptops. Two of the participants also described having robots and coding devices. All the participants have access to technology tools in the classroom. However, fewer than half feel as though they are using these tools to the fullest potential.

All participants discussed utilizing the benchmarking program adopted by the district. Some identified this program as Istation or Iready. They use this program to determine where the students are academically and identify any gaps in learning. This data is utilized to directed instruction and differentiate learning. They administer a beginning-of-the-year, then mid-year, and finally end-of-year assessment to track growth and grade level equivalencies for students.

Sub-Question One

The first sub-question was: How do Title I elementary teachers describe their technological awareness and their ability to integrate current educational technology into their classrooms? An anticipated finding that developed from this sub-question is that the participants who felt that they had adequate training and a supportive administration felt better equipped to use technology in the classroom. When asked about how the participants perceived themselves

when it comes to being technologically-savvy, those who felt comfortable with technology and utilized more current technological tools were more apt to deem themselves as technologically literate. These same participants had no issues with using technology in the classroom for teaching or learning and felt significantly comfortable with technology integration. Conversely, the seven participants who had little to no technological training in the last few years and minimal support from their administration did not feel as comfortable using technology. Additionally, these same participants were extremely hesitant to experiment with new technology and often reported feeling guilty for not being able to offer more trending technology to their students. One such participant explained, "I am fairly familiar with the technology that I currently use, but feel guilty because I could be using it more effectively. I would also welcome new ideas to better engage my students, but I just don't have the time or even know where to begin."

Sub-Question Two

The second sub-question was: How do Title I elementary teachers describe their experiences with professional development and training initiatives designed for educational technology integration in the classroom? Seven of the fifteen participants described a supportive administration that gave adequate opportunities for technology training and professional development. These participants designated supportive administration who were enthusiastic and passionate about technology integration and offered a variety of training initiatives. Some administrators fostered teacher-directed training as well as the development of professional learning networks. These administrators would also provide training to teachers who were highly knowledgeable about technology and give them opportunities to be teacher leaders in the school. Natalie offers, "The principal gets himself really knowledgeable about the technology he wants

us to implement, and he sends teachers to train and become familiar. Then they will have a greater understanding of the program. When they come back to our school excited, we all want to learn more."

Conversely, eight of the participants felt that they had little to no technological training over the last three years. Each of these participants felt they needed additional and up-to-date training on current technology trends, however, there is insufficient time and technology is not a priority on their campus. All the participants, in general, understood the importance of technology training. When the administration made it a priority, teachers also conveyed the same sentiment. Some participants described their experiences with technology training as nonexistent or extremely limited. The participants who designated having a supportive administration described their training experiences as fostering teacher leadership and creating a positive culture that celebrates technology integration. These teachers described being offered Ed Camp trainings where they could choose which types of technology that they wanted to learn more about. Some described teacher webinars or trainings via Zoom. Eight of the participants had administration that would send them to technology conferences or encourage the development of online professional learning networks. One teacher described her technology training as 'Tech Mex Thursday' where the administrator would bring in Mexican food to feed the teachers while they learned how to integrate the latest technology trends into the classroom. There were several participants that had difficulty describing recent technology training since their administration had offered little to no training in technology in the last few years. Many described having to go to their peers or to research online ways to use mandated technology.

Sub-Question Three

The third sub-question asked: How do Title I elementary Teachers describe the strategies they use to assist students in learning to utilize educational technology to enhance knowledge acquisition effectively? Each participant in the study agreed that modeling at the beginning of the year was the most effective way to train students on the technology that they would use throughout the school year. Many participants described the importance of not only going through the technology program step-by-step, but also addressing the reason that the students are using a specific technology. For example, all the participants use a benchmark district-mandated program. Three participants in a focus group described explaining to the students the way that the program worked to gather data on each student. These participants felt that if students understood why a specific technology is essential and understand its purpose, they would be more apt to use it correctly.

Two participants in the focus group discussed training students in technology that will be necessary for higher education or careers. These participants felt that training their students in email etiquette and proper research methods while they are in elementary school will prepare them for middle and high school, then college and beyond. Every participant understood the importance of Title I students being familiar with current technology so that they could be college and career ready. Most felt as though it was their duty as teachers to give them a strong foundation in technology at the elementary school level.

Summary

The purpose of this transcendental phenomenological study is to describe the experiences of teachers' educational technology use in Title I elementary schools in Central Florida. Fifteen Title I teachers who had at least three years of experience participated in this study. I collected

data through one-on-one interviews, focus groups, and journal responses. The central research question was: How do Title I elementary teachers describe their experiences utilizing educational technology in the classroom? The sub-questions were: (a) How do Title I elementary teachers describe their technological awareness and their ability to integrate current educational technology into their classrooms? (b) How do Title I elementary teachers describe their experiences with professional development and training initiatives designed for educational technology integration in the classroom? (c) How do Title I elementary Teachers describe the strategies they use to assist students in learning to utilize educational technology to enhance knowledge acquisition effectively? Data collected during this study assisted in the development of five themes: emerging vs. traditional technology, benefits and barriers of technology use in the classroom, attitude toward technology influences teacher self-efficacy, administrative support, and importance of technology skills for Title I students.

This chapter comprises the findings and data analysis for this study. Descriptions of the data exposed the need for administrative support for the technology to be effectively integrated into Title I schools. Additionally, the findings reveal that the attitude of the administration when it comes to technology will be a motivational factor for teachers. Training is also a contributor to teacher self-efficacy and the overall success of technology integration in the Title I classroom.

CHAPTER FIVE: CONCLUSION

Overview

The purpose of this transcendental phenomenological study is to describe the experiences of teachers' educational technology use in Title I elementary schools in Central Florida. Chapter five begins with a summary of the conclusions derived from the data analysis of this study. The subsequent section will contain a discussion of the research findings, as well as how they relate to the current literature and foundational theories of this research. Next, a review of the methodological and practical implications of the study is discussed. Finally, the chapter concludes with a discussion of the limitations, delimitations, and recommendations for future research.

Summary of Findings

Analysis of data collected from one-on-one interviews, focus groups, and journal responses supported the development of five themes. These themes were: *emerging vs. traditional technology, benefits and barriers of technology use in the classroom, attitude toward technology influences teacher self-efficacy, administrative support, and the importance of technology skills for Title I students*. These themes correlated to the central research question and sub-questions. The central research question was: How do Title I elementary teachers describe their experiences utilizing educational technology in the classroom? The first theme, *emerging vs. traditional technology*, and the second theme, *benefits and barriers of technology use in the classroom*, answer the central research question. Participants described the types of technology they utilized in their classrooms regularly. Eight participants described more emerging technological tools, such as Nearpod, Flipgrid, Simulation programs, and Google Classroom. Seven of the participants designated traditional technology tools such as PowerPoint and

Microsoft Word as programs they typically use. All the participants utilized email and some other form of technology for communication purposes. Each of the teachers discussed devices that were available in the classroom, such as computers, tablets, document cameras, and Smartboards.

Additionally, all the participants utilized the district-mandated benchmarking program to monitor progress and assess students. However, participants that felt that they were more technologically savvy found great value in these benchmarking programs. Whereas participants that were less likely to be comfortable with technology considered the district-mandated programs to be a waste of time and energy. The most beneficial technology used in the classroom were the tools that fostered collaboration, critical thinking, and creativity. All the participants found that technology was essential for Title I students. Time and classroom management, collaboration, and communication were some of the benefits participants found with technology use. Other participants felt that time could also be a barrier to technology integration in the classroom. Some found that there was no time to learn about new technology trends or identified having difficulty fitting it into their already busy day.

Three sub-questions followed the central research question in this investigation. The first sub-question was: How do Title I elementary teachers describe their technological awareness and their ability to integrate current educational technology into their classrooms? This question is addressed by the third theme, which is *attitude toward technology influences teacher self-efficacy.* Of the fifteen participants, eight felt as though they were extremely comfortable with technology in the classroom. These participants were excited to explore new and emerging technology and often spent time outside of school researching new technological tools to bring back to their classroom.

Furthermore, the participants that had a positive attitude about technology integration were more likely to consider themselves technologically-savvy. The seven participants that did not have a positive attitude about technology use or only wanted to utilize technology that they were familiar with also identified themselves as less than technologically literate. Some of these participants are not fond of technology use and are hesitant to utilize anything new or unfamiliar. Of these two groups, the participants that had a positive attitude about technology also had an administration that made technology a priority in the school. The group of participants that had a negative view about technology and felt inadequate in using it for teaching and learning described their administration as offering little to no training in technology skills.

The second sub-question was: How do Title I elementary teachers describe their experiences with professional development and training initiatives designed for educational technology integration in the classroom? The third and fourth theme addresses this question. The third theme of *attitude toward technology influences teacher self-efficacy* is relevant to the sub-question in that most of the participants described their training, or lack of training, as correlating to their self-efficacy. The participants that described having suitable training in technology integration had a more positive attitude toward technology and described a greater sense of teacher self-efficacy. Participants that stated that they had little to no technology training described themselves as having low confidence in their technology skills. Furthermore, these teachers with little training did not positively view technology.

The fourth theme of: *administrative support* responded to this sub-question because each of the participants believed that training and professional development were necessary to integrate technology into the Title I classroom effectively. Six of the fifteen participants describe little to no support from the administration when it comes to training and motivation. Three of

these participants explain that they have had no technology training for the last three years and only used programs that have been in place for nearly a decade. They also described using only school mandated technology programs and little to no professional freedom. Their administration demands that students use specific applications for a given duration of time each day, leaving no additional time for teachers to explore more emerging and relevant technology. When a new technology is introduced, teachers are left to figure out how to use it on their own or seek the assistance of a peer. Some stated that there was a technology person on campus. However, their job was mostly to keep the computers working correctly. When the technology staff member was tasked with helping teachers learn about a program, it was voluntary and needed to be completed during the teachers' planning period or after school. Most of the participants stated that it was not a priority for them due to having more demanding tasks to accomplish.

Nine of the participants describe the opposite of their administration. These participants explained that they are offered training often and encouraged to research and explore new technology that would engage their students. Six of these participants have experienced more than one professional development opportunity in the last year. They have also been asked to take what they have learned and become teacher leaders at their school, leading training initiatives for the rest of the faculty. These six participants describe their administration as passionate about technology and offering support for professional freedom. The teachers feel as though they have a voice in which technology is more beneficial for their students and consider the administration respectful of their view and opinion. Most participants described administrative support, or lack thereof, as a significant component in the successful integration of technology in Title I schools. The participants also considered schools that have a leadership

team that believes technology training is a priority tend to have teachers who are more prepared for and passionate about the technology that they use in their classrooms.

The third sub-question was: How do Title I elementary Teachers describe the strategies they use to assist students in learning to utilize educational technology to enhance knowledge acquisition effectively? This question is addressed by the third, fourth, and fifth themes. The third theme of: *attitude toward technology influences teacher self-efficacy* responded to the sub-question in that the attitude toward technology can influence how teachers engage their students in technology training. The participants in this study who did not have a positive attitude toward technology or felt that technology was not considered an essential component for learning by their administration also felt as though they lacked the skills to train their students successfully. This lack of self-efficacy caused the participants who claimed little to no administrative support to be hesitant to learn or train their students in trending technology skills.

The fourth theme of: *administrative support* exposed the need for Title I school administrators to not only be aware of the importance of technology integration in the classrooms of their economically disadvantaged students but to understand that they must provide their educators with the tools necessary to address these technological needs adequately. The participants that did not consider their administrators as being supportive in technology integration, also felt that they were trained, or equipped to train their students in the latest technology trends effectively. Some participants stated that they were doing a disservice to their students by not being able to supply the support or training needed for these students to be successful in learning to utilize emerging technology to assist in knowledge acquisition. Even though these teachers felt that they did not have the training or support needed to be successful in

training their students, they each understood that there was a need to ensure that these students were prepared for 21st-century skills.

The third sub-question was also addressed by the fifth theme of: *the importance of technology skills for Title I students*. This theme revealed that all the participants understood the importance of technology training for Title I students. Regardless of the training that the participants received, support from administration, or attitude toward technology integration in the classroom, all the participants understand the unique needs of Title I students. The participants disclosed the knowledge of the academic and economic challenges of their students. They know that these students are already at a disadvantage when compared to traditional middle-class students. The participants were able to explain that while their students had access to a cell phone at home, they have limited access to other devices and lack the skills necessary to be fluent with 21st-century technology.

Participants in the study describe teaching their students how to use technology to collaborate with others, create video and other formats for presentations, and conduct relevant research that is nonbiased and credible. For younger elementary students, teachers describe giving them a strong foundation in technology by teaching how to use the mouse and Smartboard pen or taking proper care of devices. Each of the teachers in the study described training students by modeling how to use technology programs effectively. At the beginning of the year, teachers work with students in small groups and whole group instruction, practicing how to use a given technology tool. It is the goal for each of the participants that their students become literate in the necessary technical skills required to be college and career ready. It was the consensus of all participants that it is their responsibility as educators in a Title I school to do all that they can to assist in bridging the digital divide and academic gap.

Through the analysis of data, a significant amount of information was derived. I found that participants want their Title I students to be successful and understand the need for technology integration in the classroom. Even though many of the participants were able to identify barriers and challenges in effective technology integration, each participant exhibited the desire and dedication to continue to prepare their students for the 21st century.

Discussion

The following section will discuss the findings of the research as it relates to the theoretical foundations of the study and the empirical literature previously reviewed in Chapter Two. The theoretical literature focuses on the theories of Bandura (1977) and Mishra and Koehler (2006). The empirical literature connects this study to previous research.

Theoretical Literature

The theoretical foundation for this study is grounded in Bandura's (1977) social cognitive theory, more specifically, teacher self-efficacy, which is a significant component of social cognitive theory. The second theory that supported this study was Mishra and Koehler's (2006) Technological Pedagogical Content Knowledge, or TPACK, theory.

Social Cognitive Theory

Bandura (1977) gave a psychological perspective that focused on the influence of the social environment on an individual's motivation, learning, and self-regulation. In Chapter Two, I considered how environmental processes could impact a teacher's actions. Schunk and DiBenedetto (2020) explained that what an individual thinks or believes can influence their actions. These actions can then alter their thoughts, and the environment can impact a person's behavior and perceptions. The participants of this study were greatly influenced by the attitude of the administration when it came to technology integration. Those teachers who had

administrative leadership that placed great value on technology in the classroom also gave technology integration significant importance. Many participants described administrators offering their teachers sufficient technology training. Those teachers would become teacher leaders in the school who would then support their peers by providing training and assistance in the same technology. One participant explained how her principal created Tech Mex Thursday, where he brought in Mexican food for the faculty who would stay after school to participate in a chosen technology training. With sub-question two, I asked participants about professional development and training initiatives designed for technology integration. The environmental processes impacted the participants' thoughts and behaviors when it came to technology integration. Adequate support from the administration influenced the perceptions of effective technology use in the classroom. The overall culture of the school, the attitudes of the administration, and a school environment that celebrates the value of technology for learning will influence teachers to view technology integration more positively.

Furthermore, the social cognitive theory focuses on the importance of perceiving and modeling the behaviors and emotional responses of others (Bandura, 1977). The participants who reveal having a supportive administration described wanting to emulate the actions of the principal. One participant explained how passionate and enthusiastic her principal was about exploring new and emerging technology. She shared his enthusiasm and explained how she endeavored to 'keep up.' The participants who identified having a supportive administration sought informative feedback. They were able to formulate thoughts about which behaviors would help them to be successful; thus, feedback influenced their future actions (Bandura, 1977; Cox & Graham, 2009). All of which can influence teacher self-efficacy and the overall successful integration of educational technology.

Teacher Self-efficacy

A significant component of social cognitive theory is teacher self-efficacy. Past experiences or current school culture may influence the teacher's level of confidence in their ability (Brown, Lee, & Collins, 2014). One factor that participants described that had an impact on teacher self-efficacy was lack of perceived training. The participants in this study who felt as though they did not have adequate training to integrate new and emerging technology into the classroom effectively also revealed a lack of confidence in their technological abilities. Almost half of the participants lacked proper training and had feelings of inadequacy or felt as though they were letting their students down. These participants also felt alone and left to their own devices when learning about newly mandated programs. Bandura (1977) explained that self-efficacy connects motivation and refers to the individual's perceived ability. I asked each participant to describe how comfortable they were with technology and define their level of technological knowledge. The participants who had substantial administrative support also identified as being significantly technologically savvy. At the same time, the participants who lacked support from the administration felt inadequate and shared feelings of guilt for not providing more technology to their students.

Brown, Lee, & Collins (2014) found that when teachers have a high sense of instructional efficacy, they tend to be more resilient in their teaching and have higher expectations for their students. Administrators who had a high sense of technological efficacy had greater expectations for their faculty when it came to technology integration. One teacher who designated her principal as passionate about technology stated that her school has grown from a C school to B school in two years, and she gives credit to the technology component that her new principal brought to the campus. Another participant who has not had any type of technology training for

several years felt as though her school has been stagnant when it comes to academic growth, as evident from recent state standardized testing results.

The goal for many Title I teachers is to assist their students in bridging the digital divide. The components of the Teacher Self-Efficacy model (see Figure 2.1) provided in Chapter Two align with Bandura's (1977) social cognitive theory and teacher self-efficacy, as well as the findings in this study. Administrative support, professional development, and training incentives contribute to higher teacher self-efficacy. This increase in teacher self-efficacy will lend to an increase in successful technology integration, an increase in students' technological skills, and the overall goal of bridging the second digital divide.

Technological Pedagogical Content Knowledge

The Technological Pedagogical Content Knowledge (TPACK) model is a framework that gives teachers an understanding of the types of knowledge that is essential to teaching using technology (Mishra & Kohler, 2006). Students in this study are Generation Z students, who have never known a world without technology. The research participants understood that the most beneficial technology used in their classrooms were the tools that fostered collaboration and engagement while allowing students to think critically and creatively. Most of the participants understood that technology was an essential component of an engaging classroom. Even those participants who were hesitant to utilize new and more responsive technology understood the importance of using this technology to engage students in learning. The problem arose when the participants did not have adequate training and support to integrate this technology into the curriculum.

Each of the participants works diligently for their students. All the participants have the content knowledge and understand what materials and concepts that they are required to teach to

their students based on the academic level. I am confident that most have pedagogical knowledge since they are still thriving in the teaching profession. However, not all the participants had technology knowledge nor felt comfortable using technology to teach and enhance the curriculum. In this study, I sought to gain a better understanding of the experiences and perceptions of Title I teachers on technology integration. The marriage of content knowledge, pedagogical knowledge, and technology knowledge is critical in all classrooms when teaching 21st-century skills to Title I students successfully. Nearly half of the participants in this study did not have the training to make this goal attainable.

Empirical Literature

Upon reviewing the current literature, I found that there were a significant number of studies based on the integration of technology in secondary schools and higher education. However, there were little to no studies on technology integration at the elementary school level, more specifically, in Title I elementary schools. The following section will discuss the relationship between the empirical literature reviewed in Chapter Two and the results of the data analysis in the current study.

Generational Shifts and Generation Z

The participants in this study were aware of the new and unique educational needs of this cohort of students, Generation Z. These needs add to the challenges that Title I students already face when it comes to economic and academic barriers. During one focus group conversation, the participants discussed how they no longer can teach students in the same manner in which they learned while going through elementary school. This generation of students learns in a much different style in comparison to any previous cohort. Their life experiences, family dynamics, and culture add to the advancement of technology, thus making their learning needs quite

different (Turner, 2015 Seemiller & Grace, 2017). As teachers, the participants in this study understood that this generation of students thrive on technology and recognize the need to utilize these tools in the learning processes occurring within their classrooms. In earlier studies, researchers found that many teachers were cautious about changing their teaching practices and hesitant to try something unfamiliar to them (Varier et al., 2017). Previous research also found that as more technology begins to become implemented into the curriculum, students are driving their own instruction, and teachers feel as though they are losing some control of the learning process (Ruggiero & Mong, 2015). The current study added to the literature that focused on teachers' perceptions of traditional teaching and the importance of moving into a more technologically enhanced classroom. This research identified participants that wanted more training in technology due to feeling as though they were not meeting their students' technological needs. Six of the participants utilized a great deal of technology to enhance learning. Four participants felt as though they were inept in their teaching skills due to being unfamiliar with technology and described the desire to be trained in the newest technology trends to meet the needs of their Generation Z students better. The participants' teaching experience ranged from 4 to 26 years. However, fourteen of the participants felt the need to acquire more training and adjust their teaching styles to meet the needs of their Title I students, even if this transformation was outside of their comfort zone.

Digital Divide

Technology is used in schools to assist students in knowledge acquisition. However, technology is also a staple in homes where families utilize it for banking, shopping, and social communications. Cruz-Jesus et al. (2016) described how information communicating technologies (ICT) exist within nearly all daily economic and social activities. Therefore,

technology is available in virtually every American household. However, for many low-income families, it may only be in the form of a smartphone. Many traditional non-Title I students have adequate technology readily available, whereas economically disadvantaged students may not have access to acceptable technology tools. Previous studies researched this known phenomenon, which is called the digital divide. The gap that occurs between students who have ready access to technology and those students that do not is the digital divide (Cruz-Jesus et al., 2016; Dolan, 2016; Eisenman, 2018). In this study, every participant was intensely aware of this divide in student access to the technology necessary for students to be successful in the 21st-century world. However, many of the participants had not considered the second digital divide. Even though students have access to smartphones or may know how to use technology for social media, they do not understand how to utilize technology to increase skills necessary for college and career readiness. While previous studies focused on the first digital divide, or the "haves" and the "have nots," there are limited studies that focus on the second digital dived. Attewell (2001) and Van Dijk (2003) gave the classification of the first and second digital divide as "material" or physical access and "mental" or skills access. Since there have been limited studies that focused on the second digital divide, the current study addressed the strategies that teachers used to assist students in learning how to acquire the skills necessary to use this technology in a more meaningful way. Two of the participants discussed teaching their students how to utilize email for effective communication and how to conduct research and report findings using the MLA format. Four participants not only taught their student show to code but also how to use a variety of technology platforms to create presentations and collaborate with peers. The majority of participants in this study sought to find meaningful ways to train their students to not only be able to use technology in the learning process but also to be prepared for the 21st-century world.

During the data collection for this study, a global pandemic occurred. Schools were closed, and teachers had to scramble to instruct their students remotely. The topic of student access came up quite frequently. The participants in this study found that many of their students could not complete assignments at home due to lacking the devices necessary to log in to the assigned programs. Some teachers described students who did not have WiFi access or parents at home to assist them. This pandemic was an eye-opening event for each of them, as they were currently living through the effects of the digital divide. Some of the participants discussed how half of the students had to come to the school to pick up worksheet packets to keep up with other students who had access to assignments online. Many participants discussed how their students were falling further behind when compared to traditional middle-class students who had assistance from parents and access to technology tools. These students are not only economically disadvantaged, but now are struggling to keep up with their peers during the Covid-19 pandemic. Previous research referred to these students who fall into both categories as "double jeopardy" or "twice disadvantaged (Borman & Overman, 2004)." The current literature identified elementary children from low-income families who go to schools with fewer educational opportunities, having increased academic gaps due to the growing digital divide. Eisenman (2018) found that students from low socioeconomic and minority households tend to be (a) poor and (b) lack the technology necessary to bridge the educational achievement gap. This research study focused on Title I elementary schools that are now living through a growing technology divide due to the current pandemic global crisis.

Benefits and Barriers of Technology

Previous research studies identified both benefits and barriers to effective technology integration in secondary and higher education classrooms (Ruggiero & Mong, 2015; Wang et al.,

2014; Yenmez, 2017). Numerous studies addressed technology use at the middle school, high school, and college level. However, there is little research on the successful technology integration in Title I elementary schools (Urban & Falvo, 2016). The current study focused on the challenges and rewards of technology use at the elementary level.

Most teachers believe that technology is beneficial to both instructors and students because it augments students' learning (Doering et al., 2014; Urban & Falvo, 2016). The participants in this study identified numerous benefits of technology integration in the classroom. These benefits included increased engagement, collaboration, effective classroom and time management, student self-efficacy, and creativity. Six of the participants consistently seek new and emerging technology trends to keep their students engaged and enthusiastic about learning. They also disclose how technology makes their life easier by providing improved time management. Nine of the participants utilize data from technology to guide and differentiate their instruction.

Over half of the participants found that lack of time and training created a barrier to technology integration. Two participants considered technology to be too distracting. Others worried about technology tools getting broken or not working properly, which caused them to be hesitant about using it during lessons. Seven teachers explained that they had little support from the administration. This study sought to add to the existing research by bridging the gap in the current literature concerning elementary Title I teachers' perspectives of the benefits and barriers of educational technology integration. This discussion of the theoretical and empirical literature in this research leads to the implications of the study.

Implications

The participants in this study described the challenges that their students must overcome in order to bridge the academic and technological gap plagued by Title I school populations. Most were eager to find ways to incorporate the newest technology trends to help their students be successful in 21st-century skills. The participants understand the importance of technology integration in Title I schools. The following sections address the theoretical, empirical, and practical implications of this study.

Theoretical

The theoretical implications of this study are grounded in Bandura's (1977) social cognitive theory, with a focus on teacher self-efficacy, and Mishra and Koehler's (2006) Technological Pedagogical Content Knowledge (TPACK) model. The current research study contributed to these frameworks concerning how administrators and teachers implement technology in the Title I classroom.

Social Cognitive Theory

This study contributed to Bandura's (1977) social cognitive theory in that participants sought to find ways to complete technology professional development in order to learn new strategies that would assist their students in utilizing technology for the purpose of learning. The foundation of the social cognitive theory focuses on the belief that people look to identify a sense of acceptance that has an influence on important events in their life. They do this by setting goals and then creating strategies to achieve them. These individuals monitor their progress and readjust when need be (Schunk & DiBenedetto, 2020). The participants in this study wanted to learn new strategies for implementing technology and training their students on effective technology use for learning. Many participants researched and explored new technology tools

and sought professional development or individuals within a professional learning network to achieve this goal. Through these approaches to learn more about technology integration, participants were able to acquire new strategies and techniques to assist their students in technology use in the classroom. These participants set a goal of learning about new technology, sought to find training so that they could meet this goad, and monitored what worked and what did not to adjust to the specific needs of their students. These training and integration goals demonstrate evidence of Bandura's social cognitive theory (Bandura, 1977).

Teacher Self-efficacy

When an individual is in an agentic state, they direct their actions and take responsibility for the results. An important part of this agentic state is an individual's awareness of their ability to learn and achieve specific goals. One of the most significant internal motivational processes in the social cognitive theory is self-efficacy. Bandura (1977) suggests that self-efficacy stems from goal-oriented and progress monitoring self-reflection. In this study, participants described their comfort level with technology and teacher self-efficacy as it pertains to technology integration. Participants discussed their level of "technological-savviness" and how it influenced their desire to incorporate new and emerging technology tools into the classroom. The participants frequently expressed their desire for further professional development, and many defined ways that they went about attaining this training. Some described teacher-directed training while others discussed supportive administration that fostered teacher leaders within the school campus. Bandura (1977) describes an agentic state in which individuals seek to observe authority. Participants in this study discussed the school leadership teams that sought out ways to increase teacher self-efficacy through technology training. Effective administrators can identify teachers in need of training and listen when these instructors seek help. These and other social

cognitive factors influence a teachers' perceptions of self-efficacy, which can impact successful technology integration in the Title I classroom.

Technological Pedagogical Content Knowledge

This framework, created by Mishra and Koehler (2006), assists teachers in understanding the kinds of knowledge that are critical when effectively teaching with technology. The participants discussed creating greater technological pedagogical content knowledge because the TPACK model gives specific provisions for what is necessary to be efficient in the implementation of technology into the current curriculum (Koh, Chai, & Lee, 2015). The participants understand that each component of the TPACK is needed to integrate technology most effectively. Each of the participants expressed the desire to improve their instruction using technology. The teachers understood the need to assist students in bridging the digital divide and achievement gap by utilizing technology when possible. Participants used technology to teach students to present information in new and creative ways. They also discussed utilizing video platforms instead of having students write reports. Many sought real-world tools to practice math skills, like architectural applications and coding programs. The teachers in this study understood that the most effective way to deliver content knowledge pedagogically is using technology. Thus, applying Mishra and Koehler's (2006) framework when implementing technology into the curriculum.

Empirical

Numerous studies have been completed on the integration of technology in today's classrooms. Most research focuses on technology in middle schools, high schools, and at the college level. There has been a limited number of studies addressing educational technology

integration in Title I elementary schools. The information gathered from the data in this study added to the literature of previous research on technology integration.

Generational Shifts and the Introduction of Technology

Previous studies focused on technology integration, but there is little data derived from the elementary school setting. The goal of this study was to give a voice to teachers in Title I elementary schools in Central Florida. Participants were able to describe how they use technology to teach in the elementary classroom. They were able to discuss the importance of utilizing technology during the teaching and learning process due to the dynamic of this current generation of students. Participants revealed that it did not matter what grade level they currently taught; technology must play a vital role in the education of Generation Z students. Peres and Mesquita (2018) describe the mission of education is to prepare students to be successful. They go on to explain the importance of supporting the digital society and the direction that technology is going. The participants are seeking to prepare these students for the future, whether that future is a college education or a career. Participants described a technology-driven world and the need to prepare students who are academically and economically disadvantaged for a future where they are on a level playing field with their peers. This information adds to the literature on technology use in K-12 schools. The participants were able to share their opinions and views on the importance of technology integration for Title I schools, putting aside their teaching styles to address the individual learning styles of their students. Thought meaningful discussions, the participants were able to address the need to change their ways of imparting knowledge to adhere to the individual needs of the students.

Today's students live in a world driven by technology. Traditional teaching styles are teacher oriented. The goal of technology integration is to create a more student-directed

classroom experience. Logsdon (2016) examined that advanced students need to be challenged, and it is easy to lose engagement when these students are not offered a more interactive platform in the classroom. Previous studies indicate that teachers want their students to use technology successfully in the learning process (Ruggiero & Mong, 2015). The participants in this study are no different. They seek to utilize technology to keep their students excited about learning, collaborating with their peers, and finding creative ways to assess the content. The newest teacher in the study had been teaching only four years, while the most experienced teacher in the research had been in the classroom for over 26 years. No matter the participants years of experience, each understood and voiced that they "could no longer teach these students in a traditional fashion." This generation of students must have the ability to utilize technology when acquiring knowledge.

Generation Z

While there are various studies completed on Generation Z students at the high school and college level, there are little to no studies on elementary school-aged Generation Z students. Generation Z students have unique learning preferences and styles. They thrive on self-directed learning and have an average attention span of 8 seconds (Seemiller & Grace, 2017). The participants in this study described allowing their students to learn by observation and practice as well as solving real-world problems. The participants use a variety of technology tools to keep their students engaged (Williams, 2019). There are limited studies based on teachers' perceptions of technology use with younger Generation Z students. The participants in this study added their voices and perceptions of technology use for Generation Z students in the Title I elementary school setting. These teachers' perspectives also contributed to the current literature of the use of technology to educate Generation Z.

Digital Divide

There have been numerous studies that focused on the first digital divide; however, there are few studies conducted on the second digital divide. Dolan (2016) explained how the technology available at home compared with technology available in school was not equitable. Other studies have helped in identifying the characteristics of the digital divide. One such study found that the concept of access could be divided into four types (Van Dijk, 2003). The first is the absence of elementary educational technology due to disinterest or anxiety. Four participants expressed fear or hesitation when using technology within the curriculum. The second type of concept of access was not having computers or other devices. Each of the participants had ample access to technology due to funding for Title I schools, yet they describe their students as having limited access at home. The thirds concept of access identified the missing skills and insufficient training for students. Each participant in the current study revealed their desire to teach technology skills necessary for a 21st-century world. The final concept of second-order digital divide was a lack of opportunities for students to use technology. The teachers in this research use every occasion possible to use technology to address real-world problems. Analysis of the data collected in this study found that participants furthered the thought that there is a critical need to address the second-order digital divide through the effective technology integration in the Title I classroom.

Legislature

In 2001, the No Child Left Behind act ensured that technology became a critical component of education in today's schools (US Department of Education, 2010). Teachers in every grade level must utilize technology in the classroom and integrate technology into all forms of curriculum. The teachers in this study recognized that Title I schools get funding

contingent upon their use of technology in the classroom. Funds under Title I through IV of the Every Students Succeeds Act (ESSA) and the Individuals with Disabilities Act (IDEA), may support the use of technology integration that improves instruction and academic success. Teachers are on the front lines when it comes to successful technology integration in the classroom. Thus, their perceptions of technology use in the Title I classroom are critical to understanding how to successfully instruct students on effective technology use for 21st-century skills.

Benefits and Barriers to Technology Integration

Numerous studies have been conducted on the rewards and challenges of technology integration in secondary and higher education. The literature review in Chapter Two revealed that there are few studies on the benefits or barriers on technology integration at the elementary school level. It is clear that technology integration gives educators the ability to reach each student at their academic level (Doering et al., 2014; Jacobs, 2015). The teachers in this study described using technology and data to drive instruction when working with students in small groups and whole group lessons. Participants had lower-achieving students using technology to make gains and discussed how their advanced students used technology to enhance learning. Time and classroom management, as well as collaboration, critical thinking, communicating, and creativity, were just a few of the benefits that participants perceived as rewards of technology use in their elementary classrooms. There were few barriers that the participants discussed. Four of the participants explained that time and lack of training were barriers to technology integration. These are just a sampling of the benefits and barriers that these Title I teachers identified in this study. Their perceptions of these challenges and benefits of technology integration add to the current review of literature in that they are focused on integration benefits and challenges at the

Title I elementary level. Thus, this study finds a new understanding of technology integration in Title I elementary schools.

Practical

There are numerous practical implications of this study. This research gives valuable evidence to individuals who are invested in Title I schools. These individuals include school principals, faculty and staff, parents, and other community stakeholders. The practical implications concern how technology can be used in Title I classrooms for both teaching and learning, the importance of bridging the achievement gap for Title I schools, identification of technology that is most beneficial for students, and the professional needs of teachers. This study will lend to the perspectives of the participants due to adding their experiences with integrating technology into their Title I elementary classrooms.

Policymakers

The superintendent, board members, and other individuals who make district decisions must understand what teachers need in order to be successful in integrating technology into their curriculum. Teachers need devices, professional training opportunities, and technology support to create a technology-rich environment in which Title I students have ample opportunity to utilize technology for learning. Teachers also must have technology support at the school and district levels. This support should be ongoing and continuous so that the instructors can stay up to date on the latest technology trends. The participants in this study described using what was available to them. Seven of the participants described using second-generation iPads that cause frustration with the students due to the slow and insufficient storage or memory. Many participants suggested that technology should be updated frequently. Title I students are already at a great disadvantage. They need access to effective technology in their schools to be college

and career ready. The participants in the study understood the need to provide adequate devices and programs that will keep the students on par with their peers. School stakeholders must recognize the academic achievement gap between traditional middle- and upper-class students and Title I students that are from economically disadvantaged communities. Since a student's social class is a predictor of academic success, the school stakeholders at the district level must realize that it is already difficult for these students to make up lost ground. They must give them every opportunity to bridge the achievement gap (Butler & Votteler, 2016; Garcia & Weiss, 2017).

Administrators

This research study identified numerous benefits of educational technology use in the elementary Title I classroom. Title I students are already at a disadvantage due to academic and economic challenges. Most students in Title I schools have little to no access to educational technology outside of the classroom. Thus, to be prepared for college or career in the 21st century, they must be not only be introduced to technology in the classroom, but also be trained for technology skills that will prepare them for the future. Participants in the study had a strong desire for technology training. Seven of the participants felt as though they had little support from their administration when it came to professional development. These same participants not only lacked training, but they also were not encouraged to incorporate new and emerging technology trends into the classroom curriculum. The teachers did not have professional freedom, nor did they feel that they had a voice to decide which technology tools were a good fit for their specific students. Conversely, eight of the participants described administrators who fostered technology use in the classroom. These administrators not only offered technology training often, they gave continuous support to teachers who wished to continue to grow in their

technology knowledge and integration. These same administrators were described as enthusiastic about technology and created a culture that welcomed new ideas from the teachers. It is critical to see the impact that administrators have on the attitudes of the teachers and the overall self-efficacy they feel toward technology use for educational purposes.

Teachers

Every participant in this study was an educator in a Title I school. There were numerous participants who provided evidence of successful technology integration that fostered academic growth. Nine of the participants felt comfortable with technology use and considered themselves somewhat technologically savvy. Some of the participants explored new technology trends that would keep their students engaged in their learning and fostered collaboration. As future teachers look to begin integrating educational technology into their classrooms, it will be crucial to look at the factors that made this a success.

During the collection of data, the participants were directed to teach remotely due to the global pandemic, Covid-19. The participants understood the importance of students being technologically literate and having the skills to utilize educational technology. Many of the participants had students who lacked technological devices due to the digital divide, which was more evident during the pandemic. However, many noted that students who did have devices could not use them properly without explicit assistance from the teacher. Training opportunities, support from administration, adequate technology tools, and professional freedom to utilize specific tools that are fit for each students' needs are a few factors voiced by the participants in this study. While there were a few teachers who were not as eager to incorporate new technology into the classroom, they still had an understanding of the importance of this integration.

Delimitations and Limitations

For this phenomenological study, there were delimitations and limitations. The delimitations were the purposeful decisions made to define the boundaries of the research. The limitations of this study were the potential weaknesses of the study that may have been out of the researcher's control.

Delimitations

There were some delimitations in this study. The first delimitation was my choice of a transcendental phenomenology instead of hermeneutic study. I wanted to describe Title I teachers' experiences with technology integration instead of interpreting their perspective. To give the participants of this study a voice, I needed to obtain an unbiased description of the raw data.

The next delimitation was how participants were chosen for this research. I drew participants from social media, then, through purposeful sampling, I was able to identify prospective participants who met the criteria of being a Title I teacher, over the age of 18, having taught at least three years, and having familiarity with educational technology. Through maximum variation, I was able to gather a somewhat diverse sampling of participants to better understand how different groups of people view a specific topic (Patton, 2015). Since this study was based in Central Florida, there is a possibility that the experiences of the participants may be different in other parts of the country. However, for this study, it was convenient to maintain a localized area to gather participants.

Limitations

There were numerous limitations to this study. The first limitation is my bias as a researcher. I am an adjunct professor who teaches pre-service teachers how to integrate

technology into their future classroom. I also worked as a Title I teacher for fifteen years. Finally, I work with Generation Z students and understand their learning needs. Although I utilized the epoché to set aside my thoughts and beliefs, each of these factors influenced my perception of the issue (Moustakas, 1994). Being aware of these biases helped in my continuous self-reflection.

A second limitation was the global pandemic. Due to social distancing guidelines implemented by the Center for Disease Control (CDC), I was unable to meet participants face-to-face. I had to conduct interviews and focus groups via the Zoom teleconferencing program. Initially, I wanted to do observations of technology use in classrooms, however, the participants had moved to remote learning. Thus, the third type of data collection became journal responses. All data collection was able to be gathered remotely via the internet so that there was no danger of the participants contracting COVID-19.

The third limitation was the centralized location of the study. The participants were limited to Title I teachers in central Florida. Many of the teachers lived in more rural areas of Florida and did not represent all teachers across the country. The participants only illustrate the perspectives of some of the Title I teachers in Central Florida.

The next limitation was the time of year. Not only had the COVID -19 pandemic been ravaging the country, but participants were finishing the school year. While teachers had gone to remote learning, they were also working on completing end of the year tasks. Many participants had to reflect on the technology used throughout the year as they had not had access to the classroom or the technology tools they commonly utilized for teaching and learning.

The last limitation was the sample itself. While I sought to identify a wide range of diverse participants, I was only able to secure three male teachers. I also attempted to use an

ethnically diverse sample; however, I only had two Hispanic teachers and no black teachers in the study. All the teachers taught in rural areas. There were no teachers who taught in an urban setting.

Recommendations for Future Research

The purpose of this research was to examine the experiences of elementary Title I teachers' use of educational technology to gain a better understanding of the technology tools they used, how they perceived their technological self-efficacy, administrative support, and their perceived importance of technology skills for the Title I students. Little research has been garnered in technology use at the elementary level, more specifically, in Title I elementary schools. I hope this study assists in filling gaps in the literature. Repeating this study in other areas of the country or with a more diverse population will further add to this matter. Additionally, conducting research that includes the parents', administrators', or students' perspectives would afford a superior grasp of comprehension of the given phenomenon.

Moreover, further research should be conducted on the adverse effects of technology on young students. Cara, a third-grade teacher, raised this issue during her focus group. She noticed that some of her students were having eye strain and headaches when using the computer for a prolonged period. Felicia thought her fifth graders that were on social media were becoming disconnected from reality and often had self-esteem issues. She also described a student who was struggling with cyberbullying and identified how it impacted the student's mental health.

Finally, the effect of remote learning should be researched further. During this investigation, participants discussed the challenges that remote learning added to the established burden that Title I students face. Many Title I students did not have technology tools at home to complete assignments or the technology necessary to connect with the teacher online. Some of

the Title I students were given worksheets to complete since they did not have access to devices or WiFi. Researchers are aware of the digital divide; however, with the global pandemic, research should be conducted on how economically disadvantaged students were impacted academically and emotionally.

Summary

The theoretical framework of Bandura (1977) and Mishra and Koehler (2006) laid the foundation of this study as I sought to describe Title I elementary teachers' perceptions of educational technology use in the classroom. It was my goal to describe how the teachers use educational technology for teaching and learning. After data analysis, five themes emerged. These themes were: emerging vs. traditional technology, benefits and barriers of technology use in the classroom, attitude toward technology influences teacher self-efficacy, administrative support, and the importance of technology skills for Title I students. Through the data collection, participants were able to identify technology that was most beneficial and least beneficial, their perceived levels of technological knowledge, training and support from administration, and strategies used to train students on educational technology. I was able to give a voice to Title I teachers in Central Florida by focusing on the central question and the three sub-questions.

The participants in this study not only revealed their knowledge of technology tools and how they implement them into their classroom, but they are also aware of the training needed to be successful in this implementation. Many participants felt as though they had little to no support from their administration and lacked adequate training in effective technology integration. Some recommendations that have derived from this study include the need for school administrators to provide adequate and effective professional development opportunities for their teachers. This training will equip them with the knowledge and tools necessary to not only bridge

the digital divide but also to train students to be prepared for the 21st-Century world. While this study was only intended to provide a foundation, additional research is needed to attain a strong understanding of technology integration in Title I elementary schools.

REFERENCES

Adams, L. T. (2014). Teacher and policy alignment: A phenomenological study highlighting Title I high school teachers' professional development experiences. *Issues in Teacher Education*, *22*(2), 117-138.

Allen, D. (1995). Knowledge, politics, culture, and gender: A discourse perspective. *Canadian Journal of Nursing Research*, *28*(1), pp. 95-102.

Agbo, I. S. (2015). Factors influencing the use of information and communication technology (ICT) in teaching and learning computer studies in Ohaukwu Local Government Area of Ebonyi State-Nigeria. *Journal of Education and Practice*, *6*(7), 71-86.

Amstelveen, R. (2019). Flipping a college mathematics classroom: An action research project. *Education and Information Technologies*, *24*(2), 1337–1350. https://doi.org/10.1007/s10639-018-9834-z

Arora, N., & Dhole, V. (2019). Generation Y. *Benchmarking: An International Journal*, *26*(5), 1378–1404. https://doi.org/10.1108/bij-05-2018-0132

Arora, N., & Dhole, V. (2019). Generation Y. *Benchmarking: An International Journal*, *26*(5), 1378–1404. https://doi.org/10.1108/bij-05-2018-0132

Baek, Y., Zhang, H., & Yun, S. (2017). Teachers' attitudes toward mobile learning in Korea. *Turkish Online Journal of Educational Technology - TOJET*, *16*(1), 154-163.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191–215. https://doi.org/10.1037/0033-295X.84.2.191

Bandura, A. (1995). *Social foundations of thought and action: a social cognitive theory*. Prentice Hall.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* W H Freeman/Times Books/ Henry Holt & Co.

Bandura, A. (2001). Social Cognitive Theory: An Agentic Perspective. *Annual Review of Psychology*, *52*(1), 1–26. https://doi.org/10.1146/annurev.psych.52.1.1

Besser, H. (2004, January 15). *Teaching to Change*. http://presnick.people.si.umich.edu/cic/readings/BesserDigDiv.htm.

Blau, I., & Shamir-Inbal, T. (2016). Digital competences and long-term ICT integration in school culture: The perspective of elementary school leaders. *Education and Information Technologies*, *22*(3), 769–787. https://doi.org/10.1007/s10639-015-9456-7

Borman, G. D., & Overman, L. T. (2004). Academic Resilience in Mathematics among Poor and Minority Students. *The Elementary School Journal*, *104*(3), 177–195. https://doi.org/10.1086/499748

Boulton, M. J. (2014). Teachers' Self-Efficacy, Perceived Effectiveness Beliefs, and Reported Use of Cognitive-Behavioral Approaches to Bullying Among Pupils: Effects of in-Service Training with the I DECIDE Program. *Behavior Therapy*, *45*(3), 328–343. https://doi.org/10.1016/j.beth.2013.12.004

Bozkurt, A., Demir, S., & Vural, Ö. F. (2014). Comparison of Different Roles that Teachers give to Technology in Pre- and Post-training. *International Online Journal of Educational Sciences*. https://doi.org/10.15345/iojes.2014.03.008

Brown, A. L., Lee, J., & Collins, D. (2014). Does student teaching matter? Investigating pre-service teachers' sense of efficacy and preparedness. *Teaching Education*, *26*(1), 77–93. https://doi.org/10.1080/10476210.2014.957666

Butler, M. S., & Votteler, N. K. (2016). Disequilibrium: An instructional coach's reflection. *Texas Journal of Literacy Education, 4*(1), 29-36.

Campbell, M., Detres, M., & Lucio, R. (2019). Can a digital whiteboard foster student engagement? *Social Work Education, 38*(6), 735–752. https://doi.org/10.1080/02615479.2018.1556631

Cantrell, S. C., Almasi, J. F., Carter, J. C., & Rintamaa, M. (2013). Reading Intervention in Middle and High Schools: Implementation Fidelity, Teacher Efficacy, and Student Achievement. *Reading Psychology, 34*(1), 26–58. https://doi.org/10.1080/02702711.2011.577695

Cardullo, V. (2019). Technological resources in title 1 schools: The development of preservice teachers' professional identities. *Journal of Higher Education Theory and Practice, 19*(3), 11-23. https://doi.org/10.33423/jhetp.v19i3.2113

Carver, L., & Todd, C. (2016). Teacher Perception of Barriers and Benefits In K-12 Technology Usage. *INTED2016 Proceedings*. https://doi.org/10.21125/inted.2016.1845

Chai, C. S., Koh, J. H. L., & Tsai, C. (2013a). A review of technological pedagogical content knowledge. *Educational Technology & Society, 16*(2), 31-51.

Cho, M.-H., & Cho, Y. (2017). Self-regulation in three types of online interaction: a scale development. *Distance Education, 38*(1), 70–83. https://doi.org/10.1080/01587919.2017.1299563

Choi, S. B., Kim, K., & Kang, S.-W. (2017). Effects of transformational and shared leadership styles on employees' perception of team effectiveness. *Social Behavior and Personality: An International Journal, 45*(3), 377–386. https://doi.org/10.2224/sbp.5805

Contino, J. (2012). A Case Study of the Alignment between Curriculum and Assessment in the New York State Earth Science Standards-Based System. *Journal of Science Education and Technology*, *22*(1), 62–72. https://doi.org/10.1007/s10956-012-9376-x

Council for the Accreditation of Educator Preparation (CAEP). (2018). *CAEP accreditation standards.* Washington, DC: Author.

Corbin, J., & Strauss, A. (2015). *Basics of qualitative research: techniques and procedures for developing grounded theory*. Sage.

Cox, S., & Graham, C. R. (2009). Diagramming TPACK in practice: Using and elaborated model of the TPACK framework to analyze and depict teacher knowledge. *TechTrends, 53*(5), 60–69. https://doi.org/10.1007/s11528-009-0327-1

Creswell, J. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (5th ed.). Sage Publications.

Creswell, J.& Poth, C. (2017). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches* (4th ed.). Sage Publications.

Cristol, D., & Gimbert, B. (2013). Academic Achievement in BYOD Classrooms. *QScience Proceedings*, *2013*(3), 15. https://doi.org/10.5339/qproc.2013.mlearn.15

Crompton, H., Olszewski, B., & Bielefeldt, T. (2016). The mobile learning training needs of educators in technology-enabled environments. *Professional Development in Education, 42*(3), 482-501. https://doi.org.10.1080/19415257.2014.100103

Cruz-Jesus, F., Vicente, M., Bacao, F., & Oliveira, T. (2016). The education-related digital divide: An analysis for the EU-28. *Computers in Human Behavior, 56*, 72-82. https://doi.org.10.1016/j.chb.2015.11.027

Darling-Hammond, L. (2009). Teacher Education and the American Future. *Journal of Teacher Education, 61*(1-2), 35–47. https://doi.org/10.1177/0022487109348024

Davidson, L. J., Richardson, M., & Jones, D. (2014). Teachers' perspective on using technology as an instructional tool. *Research in Higher Education Journal*, 24.

Davis, N., Eickelmann, B., & Zaka, P. (2013). Restructuring of educational systems in the digital age from a co-evolutionary perspective. *Journal of Computer Assisted Learning, 29*(5), 438-450.

DeBell, M., & Chapman, C. (2006). *Computer and Internet use by students in 2003* (NCES 2006– 065). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

Delgado, A., Wardlow, L., O'Malley, K., & McKnight, K. (2015). Educational Technology: A Review of the Integration, Resources, and Effectiveness of Technology in K-12 Classrooms. *Journal of Information Technology Education: Research, 14*, 397–416. https://doi.org/10.28945/2298

Dellinger, A.B., Bobett, J.J., Olivier, D. F., & Ellett, C. D. (2008). Measuring teachers' self-efficacy beliefs: Development and uses of the TES-Self. *Teaching and Teacher Education, 24*(3), 751-766. https://doi.org.10.1016/j.tate.2007.02.010

De Smul, M., Heirweg, S., Van Keer, H., Devos, G., & Vandevelde, S. (2018). How competent do teachers feel instructing self-regulated learning strategies? Development and validation of the teacher self-efficacy scale to implement self-regulated learning. *Teaching and Teacher Education., 71*, 214–225. https://doi.org/10.1016/j.tate.2018.01.001

Doering, A., Koseoglu, S., Scharber, C., Henrickson, J., & Lanegran, D. (2014). Technology Integration in K–12 Geography Education Using TPACK as a Conceptual Model. *Journal of Geography*, *113*(6), 223–237. https://doi.org/10.1080/00221341.2014.896393

Dolan, J. E. (2016). Splicing the divide: A review of research on the evolving digital divide among K-12 students. *Journal of Research on Technology in Education, 48*(1), 16-37. https://doi.org.10.1080/15391523.2015.1103147

Dole, S., Bloom, L., & Kowalske, K. (2015). Transforming Pedagogy: Changing Perspectives from Teacher-Centered to Learner-Centered. *Interdisciplinary Journal of Problem-Based Learning*, *10*(1). https://doi.org/10.7771/1541-5015.1538

Domingo, M. G., & Garganté, A. B. (2016). Exploring the use of educational technology in primary education: Teachers' perception of mobile technology learning impacts and applications' use in the classroom. *Computers in Human Behavior*, *56*, 21–28. https://doi.org/10.1016/j.chb.2015.11.023

Dorfman, J. (2016). Music teachers' experiences in one-to-one computing environments. *Journal of Research in Music Education, 64*(2), 159-178. https://doi.org.10.1177/0022429416649947

Downes, J. M., & Bishop, P. A. (2015). The Intersection between 1:1 Laptop Implementation and the Characteristics of Effective Middle Level Schools. *RMLE Online, 38*(7), 1–16. https://doi.org/10.1080/19404476.2015.11462120

Dube, S., & Scott, E. (2017). A Survey of the University Students' Perspectives about Using Digital Technologies in Education: Zimbabwean Case. *IAFOR Journal of Education*, *5*(1). https://doi.org/10.22492/ije.5.1.07

Duff, M., & Wohlstetter, P. (2019). Negotiating intergovernmental relations under ESSA. *Educational Researcher, 48*(5), 296-308. https://doi.org.10.3102/0013189X19854365

Elliott, P. S. (2018). Practice what we teach: Using the TPACK framework to connect professional development and academic programs and processes. *College and University, 93*(4), 16-24.

Eisenman, R. (2018). Reducing the digital divide. *Journal of Information Ethics, 27*(1), 12-13.

Emmer, E. T., & Hickman, J. (1991). Teacher efficacy in classroom management and discipline. *Educational and Psychological Measurement*, 51, 755–765. https://doi.org.10.1177/001316449151302

Falloon, G. (2015). What's the difference? Learning collaboratively using iPads in conventional classrooms. *Computers & Education*, *84*, 62–77. https://doi.org/10.1016/j.compedu.2015.01.010

Fernandez, H., Ferdig, R. E., Thompson, L. A., Schottke, K., & Black, E. W. (2016). Students with special health care needs in K-12 virtual schools. *Journal of Educational Technology & Society, 19*(1), 67-75.

Florida Department of Education. (2018). Understanding Florida assessments reports. http://www.fldoe.org/core/fileparse.php/5663/urlt/Understand-FSA-Rpt18.pdf

Fox-Turnbull, W. H. (2015). The nature of primary students' conversation in technology education. *International Journal of Technology and Design Education*, *26*(1), 21–41. https://doi.org/10.1007/s10798-015-9303-6

Garcia, E., & Weiss, E. (2017). Education Inequalities at the School Starting Gate: Gaps, Trends, and Strategies to Address Them. *Economic Policy Institute*.

Gibson, R. (2013, March 20). Definition of Generation Y. Generation Y. http://www.generationy.com/definition/

Gibson, S., & Dembo, M. (1984). Teacher efficacy: A construct validation. *Journal of Educational Psychology*, *76*, 569–582. https://doi.org10.1037/0022-0663.76.4.569

Goh, E., & Lee, C. (2018). A workforce to be reckoned with: The emerging pivotal Generation Z hospitality workforce. *International Journal of Hospitality Management*, *73*, 20–28. https://doi.org/10.1016/j.ijhm.2018.01.016

Graham, R. C., Burgoyne, N., Cantrell, P., Smith, L., St Clair, L., & Harris, R. (2009). Measuring the TPACK confidence of inservice science teachers. *TechTrends*, *53*(5), 70-79.

Gunter, G. A.& Reeves, J. L. (2017). Online professional development embedded with mobile learning: an examination of teachers' attitudes, engagement, and dispositions. British Journal of Educational Technology, 48. https://doi.org.10.1111/bjet.12490

Habib, L., & Johannesen, M. (2014). Perspectives on academic staff involvement in the acquisition and implementation of educational technologies. *Teaching in Higher Education*, *19*(5), 484–496. https://doi.org/10.1080/13562517.2014.880679

Hammonds, L., Matherson, L. H., Wilson, E. K., & Wright, V. H. (2013). Gateway tools: Five tools to allow teachers to overcome barriers to technology integration. *Delta Kappa Gamma Bulletin*, *80*(1), 36.

Han, S. S., & Weiss, B. (2005). Sustainability of Teacher Implementation of School-Based Mental Health Programs. *Journal of Abnormal Child Psychology*, *33*(6), 665–679. https://doi.org/10.1007/s10802-005-7646-2

Harris, J. L., Al-Bataineh, M. T., & Al-Bataineh, A. (2016). One to one technology and its effect on student academic achievement and motivation. *Contemporary Educational Technology, 7*(4), 368-381.

Harris, J., & Hofer, M. (2009). Grounded tech integration: An effective approach based on content, pedagogy, and teacher planning. *Learning & Leading with Technology, 37*(2), 22.

Heath, M. K. (2017). Teacher-initiated one-to-one technology initiatives: How teacher self-efficacy and beliefs help overcome barrier thresholds to implementation. *Computers in The Schools, 34*(1/2), 88-106. https://doi.orf.10.1080/07380569.2017.1305879

Hennekam, S. (2016). Employability and performance: A comparison of baby boomers and veterans in the Netherlands. *Employee Relations, 38*(6), 927-945. https://doi,org.10.1108/ER-10-2015-0186

Henrie, C. R., Halverson, L. R., & Graham, C. R. (2015). Measuring student engagement in technology-mediated learning: A review. *Computers & Education, 90*, 36-53. https://doi.org.10.1016/j.compedu.2015.09.005

Henson, R. K. (2001). *Teacher Self-Efficacy Substantive Implications and Measurement Dilemmas*. Distributed by ERIC Clearinghouse.

Henson, R. (2002). From adolescent angst to adulthood: Substantive implications and measurement dilemmas in the development of teacher efficacy research. *Educational Psychologist, 37*(3), 137-150.

Hepp, A., Hjarvard, S., & Lundby, K. (2015). Mediatization: theorizing the interplay between media, culture and society. *Media, Culture & Society*, *37*(2), 314–324. https://doi.org/10.1177/0163443715573835

Hew, K. F., & Brush, T. (2007). Integrating technology into K-12 teaching and learning: current knowledge gaps and recommendations for future research. *Educational Technology Research and Development*, *55*(3), 223–252. https://doi.org/10.1007/s11423-006-9022-5

Hundley, H. L., & Shyles, L. (2010). US teenagers' perceptions and awareness of digital technology: a focus group approach. *New Media & Society*, *12*(3), 417–433. https://doi.org/10.1177/1461444809342558

Hsu, P.-S. (2016). Examining Current Beliefs, Practices and Barriers About Technology Integration: A Case Study. *TechTrends*, *60*(1), 30–40. https://doi.org/10.1007/s11528-015-0014-3

Ivanova, A., & Ivanova, G. (2009). Net-generation learning style. *Proceedings of the International Conference on Computer Systems and Technologies and Workshop for PhD Students in Computing – CompSysTech*, *09*(72), 1–6. https://doi.org.10.1145/1731740.1731818

Jacobs, J. (2015). Disrupting the education monopoly: A conversation with Reed Hastings. *Education Next*, *15*(1), 44-47.

James, L. (2014). The integration of a computer-based early reading program to increase English language learners' literacy skills. *Teaching English with Technology*, *14*(1), 9-22.

Janesick, V. J. (1998). Journal Writing as a Qualitative Research Technique: History, Issues, and Reflections.

Kayalar, F. (2016). Cross-cultural comparison of teachers' views upon integration and use of technology in classroom. *TOJET: The Turkish Online Journal of Educational Technology*, *15*(2).

Keppler, M., Weiler, S. C., & Maas, D. (2014). Focused ubiquity: A purposeful approach to providing students with laptops. *Journal of Educational Technology & Society, 17*(4), 278-288.

Kermani, H., & Aldemir, J. (2015). Preparing children for success: integrating science, math, and technology in early childhood classroom. *Early Child Development and Care, 185*(9), 1504–1527. https://doi.org/10.1080/03004430.2015.1007371

Koh, J. H. L., Chai, C. S., & Lee, M. (2015). Technological pedagogical content knowledge (TPACK) for pedagogical improvement: Editorial for special issue on TPACK. *The Asia-Pacific Education Researcher, 24*(3), 459-462. https://doi.org.10.1007/s40299-015-0241-6

Koivisto, J. (2014). Computers in education in Finland. In: A. Tatnall, & B. Davey (Eds.), *Reflections on the History of Computers in Education* (Vol. 424, pp. 239–245, IFIP Advances in Information and Communication Technology): Springer Berlin Heidelberg

Kolb, D. A. (1984). *Experiential learning: experience as the source of learning and development*. Pearson Education, Inc.

Kong, S.-C. (2017). Parents' perceptions of e-learning in school education: implications for the partnership between schools and parents. *Technology, Pedagogy and Education*, *27*(1), 15–31. https://doi.org/10.1080/1475939x.2017.1317659

Learning Point Associates (2007). Understanding the no child left behind act: Technology integration. http://stu.westga.edu/~bthibau1/MEDT 8484- Baylen/qkey3.pdf

Lee, J. & Spires, H. (2009). What students think about technology and academic engagement in school: Implications for middle-grades teaching and learning. *AACE Journal*, *17*(2), 61-81.

Lehiste, P. (2015). The impact of a professional development program on in-service teachers' TPACK: A study from Estonia. P*roblems of Education in the 21st Century, 66*, 18-28.

Lin, J. M.-C., & Wu, Y.-J. (2010). Netbooks in sixth-grade English language classrooms. *Australasian Journal of Educational Technology*, *26*(7). https://doi.org/10.14742/ajet.1034

Lincoln, Y. S., & Guba, E. G. (1986). But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. *New Directions for Program Evaluation*, *1986*(30), 73–84. https://doi.org/10.1002/ev.1427

Linnes, C., & Metcalf, B. (2017). iGeneration And Their Acceptance of Technology. *International Journal of Management & Information Systems (IJMIS)*, *21*(2), 11–26. https://doi.org/10.19030/ijmis.v21i2.10073

Lissitsa, S., & Kol, O. (2016). Generation X vs. generation Y – A decade of online shopping. *Journal of Retailing and Consumer Services*, *31*, 304-312. https://doi.org/10.1016/j.jretconser.2016.04.015

Lumpe, A. T., & Chambers, E. (2001). Assessing Teachers' Context Beliefs about Technology Use. *Journal of Research on Technology in Education*, *34*(1), 93–107. https://doi.org/10.1080/15391523.2001.10782337

Logsdon, C. (2016). *Internet Search Strategy Lessons and Their Impact on Elementary Student Research*. Saint Mary's College of California.

Manna, P. (2006). Control, Persuasion, and Educational Accountability. *Educational Policy*, *20*(3), 471–494. https://doi.org/10.1177/0895904805284055

Minshew, L., & Anderson, J. (2015). Teacher self-efficacy in one-to-one iPad integration in middle-school science and math classrooms. Contemporary *Issues in Technology and Teacher Education, 15*(3), 334-367.

Martin, J. (2004). Self-Regulated Learning, Social Cognitive Theory, and Agency. *Educational Psychologist*, *39*(2), 135–145. https://doi.org/10.1207/s15326985ep3902_4

Mirzajani, H., Mahmud, R., Ayub, A. F. M., & Wong, S. L. (2016). Teachers' acceptance of ICT and its integration in the classroom. *Quality Assurance in Education*, *24*(1), 26–40. https://doi.org/10.1108/qae-06-2014-0025

Mishra, P., & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge. *Teachers College Record*, *108*(6), 1017–1054. https://doi.org/10.1111/j.1467-9620.2006.00684.x

Mitchell, G. W., Wohleb, E. C., & Skinner, L. B. (2016). Perceptions of public educators regarding accessibility to technology and the importance of integrating technology across the curriculum. *The Journal of Research in Business Education, 57*(2), 14-25.

Moustakas, C. (1994). *Phenomenological research methods*. Sage Publications.

Murphy, J., Chang, J., & Suaray, K. (2016). Student performance and attitudes in a collaborative and flipped linear algebra course. *International Journal of Mathematical Education in Science & Technology*, *47*(5), 653-673. https://doi.com.10.1080/0020739X.2015.1102979

Mustapha, R., & Kashefian-Naeeini, S. (2017). Moving teaching and learning into the digital era. *International Journal of English Language and Translation Studies, 5*(3), 27-36.

Nepo, K. (2017). The Use of Technology to Improve Education. *Child & Youth Care Forum*, *46*(2), 207–221. https://doi.org/10.1007/s10566-016-9386-6

Nind, M. & Lewthwaite, S. (2018). Methods that teach: developing pedagogic research methods, developing pedagogy. *International Journal of Research & Method in Education, 41*(3). 398-140. https://doi.com.10.1018/1743727X.2018.1427057

Olson, J. (2000). Trojan horse or teacher's pet? Computers and the culture of school. *Journal of Curriculum Studies, 32*, 1-8.

O'Neal, L. J., Gibson, P., & Cotten, S. R. (2017). Elementary School Teachers' Beliefs about the Role of Technology in 21st-Century Teaching and Learning. *Computers in the Schools, 34*(3), 192–206. https://doi.org/10.1080/07380569.2017.1347443

Ottenbreit-Leftwich, A. T., Glazewski, K. D., Newby, T. J., & Ertmer, P. A. (2010). Teacher value beliefs associated with using technology: Addressing professional and student needs. *Computers & Education, 55*(3), 1321–1335. https://doi.org/10.1016/j.compedu.2010.06.002

Pamuk, S., Ergun, M., Cakir, R., Yilmaz, H. B., & Ayas, C. (2015). Exploring relationships among TPACK components and development of the TPACK instrument. *Education and Information Technologies, 20*(2), 241-263. https://doi.org.10.1007/s10639-013-9278-4

Patton, M. Q. (2015). *Qualitative Research and Evaluation Methods: Integrating Theory and Practice.* Sage.

Pendergast, D., Garvis, S., & Keogh, J. (2011). Pre-Service Student-Teacher Self-efficacy Beliefs: An Insight into the Making of Teachers. *Australian Journal of Teacher Education, 36*(12). https://doi.org/10.14221/ajte.2011v36n12.6

Peres, P., & Mesquita, A. (2018). Characteristics and learning needs of generation Z. *European Conference on e-Learning*, 464-XIX.

Persada, S. F., Miraja, B. A., & Nadlifatin, R. (2019). Understanding the Generation Z Behavior on D-Learning: A Unified Theory of Acceptance and Use of Technology (UTAUT) Approach. *International Journal of Emerging Technologies in Learning (IJET)*, *14*(05), 20. https://doi.org/10.3991/ijet.v14i05.9993

Pittman, T., & Gaines, T. (2015). Technology integration in third, fourth and fifth grade classrooms in a Florida school district. *Educational Technology Research and Development*, *63*(4), 539–554. https://doi.org/10.1007/s11423-015-9391-8

Poláková, & Klímová. (2019). Mobile technology and generation Z in the English language classroom – A preliminary study. *Education Sciences*, *9*(3), 203. https://doi.org.10.3390/educsci9030203

Pope, C. (2000). Qualitative research in health care: Analyzing qualitative data. *Bmj*, *320*(7227), 114–116. https://doi.org/10.1136/bmj.320.7227.114

Pousson, J., & Myers, K. (2018). Ignatian Pedagogy as a Frame for Universal Design in College: Meeting Learning Needs of Generation Z. *Education Sciences*, *8*(4), 193. https://doi.org/10.3390/educsci8040193

Prensky, M. (2001). Digital Natives, Digital Immigrants Part 1. *On the Horizon*, *9*(5), 1–6. https://doi.org/10.1108/10748120110424816

Price, L., Kirkwood, A., & Richardson, J. T. (2016). Mind the gap: the chasm between research and practice in teaching and learning with technology. In J. Case & J. Huisman (Eds.), *Researching higher education: international perspectives on theory, policy and practice* (pp. 227–245). London: Routledge.

Rehmat, AP. & Bailey, J.M. (2014), Technology Integration in a Science Classroom: Preservice Teachers' Perceptions, J Sci Educ Technol 23(6):744–755 https://doi.org.10.1007/s10956-014-9507-7

Ringstaff, C., & Sandholtz, J. H. (1994). Trading places: When teachers use student expertise in technology-intensive classrooms. *People & Education, 2*(4), 405.

Robinson, K. (2016). The effect of technology integration on high school students' literacy achievement. *Teaching English with Technology, 16*(3), 3-16.

Rowan-Kenyon, H., Aleman, A., & Savitz-Romer, M. (2018). *Technology and Engagement: Making Technology Work for First Generation College Students*. New Brunswick, Camden, Newark, New Jersey; London: Rutgers University Press. http://www.jstor.org/stable/j.ctt1sq5vg7

Rowsell, J., Morrell, E., & Alvermann, D. E. (2017). Confronting the Digital Divide: Debunking Brave New World Discourses. *The Reading Teacher*, *71*(2), 157–165. https://doi.org/10.1002/trtr.1603

Ruggiero, D., & Mong, C. J. (2015). The teacher technology integration experience: Practice and reflection in the classroom. *Journal of Information Technology Education*, 14161178.

Schroer, W.J. (2008, March/April). Generations X, Y, Z and the others. The Portal, 40, 9.

Schunk, D. H., & DiBenedetto, M. K. (2020). Motivation and social cognitive theory. *Contemporary Educational Psychology*, *60*, 101832. https://doi.org.10.1016/j.cedpsych.2019.101832

Schunk, D. H., & Usher, E. L. (2019). Social Cognitive Theory and Motivation. *The Oxford Handbook of Human Motivation*, 9–26. https://doi.org/10.1093/oxfordhb/9780190666453.013.2

Seemiller, C., & Grace, M. (2017). Generation Z: Educating and Engaging the Next Generation of Students. *About Campus*, *22*(3), 21–26. https://doi.org/10.1002/abc.21293

Seemiller, C., & Clayton, J. (2019). Developing the Strengths of Generation Z College Students. *Journal of College and Character*, *20*(3), 268–275. https://doi.org/10.1080/2194587x.2019.1631187

Sen, C., & Ay, Z. S. (2017). The views of middle school mathematics teachers on the integration of science and technology in mathematics instruction. *International Journal of Research in Education and Science*, *3*(1), 151-170.

Schwandt, T. A., Lincoln, Y. S., & Guba, E. G. (2007). Judging interpretations: But is it rigorous? trustworthiness and authenticity in naturalistic evaluation. *New Directions for Evaluation*, *2007*(114), 11–25. https://doi.org/10.1002/ev.223

Shatto, B., & Erwin, K. (2016). Moving on From Millennials: Preparing for Generation Z. *The Journal of Continuing Education in Nursing*, *47*(6), 253–254. https://doi.org/10.3928/00220124-20160518-05

Shulman, L. S. (1986). Those Who Understand: Knowledge Growth in Teaching. *Educational Researcher*, *15*(2), 4–14. https://doi.org/10.3102/0013189x015002004

Skidmore, S. T., Zientek, L. R., Saxon, D. P., & Edmonson, S. L. (2014). The Impact of Generational Status on Instructors' Reported Technology Usage. *Contemporary Educational Technology*, *5*(3). https://doi.org/10.30935/cedtech/6124

Suppes, P., Holland, P. W., Hu, Y., & Vu, M.-T. (2013). Effectiveness of an Individualized Computer-Driven Online Math K-5 Course in Eight California Title I Elementary Schools. *Educational Assessment*, *18*(3), 162–181. https://doi.org/10.1080/10627197.2013.814516

Tatnall, A. (2015). Computer education and societal change. *Information Technology & People*, *28*(4), 742-757. https://doi.org.10.1108/ITP-09-2014-0202

Tilton, J. & Hartnett, M. (2016). What are the influences on teacher mobile technology self-efficacy in secondary school classrooms? *Journal of Open, Flexible & Distance Learning*, *20*(2), 79-93.

Tirrell-Corbin, C., & Cooper, D. H. (2014). Deweyan inquiry as a means of transforming the culture of family involvement in a Title I professional development school. *Teacher Education Quarterly, 41*(3), 25-45.

Topper, A., & Lancaster, S. (2013). Common challenges and experiences of school districts that are implementing one-to-one computing initiatives. *Computers in The Schools, 30*(4), 346-358. https://doi.org.10.1080/07380569.2013.84464

Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: capturing an elusive construct. *Teaching and Teacher Education*, *17*(7), 783–805. https://doi.org/10.1016/s0742-051x(01)00036-1

Turner, A. (2015). Generation Z: Technology and Social Interest. *The Journal of Individual Psychology*, *71*(2), 103–113. https://doi.org/10.1353/jip.2015.0021

Urban, M. J., & Falvo, D. A. (2016). *Improving K-12 Stem education outcomes through technological integration*. Information Science Reference.

U.S. Department of Education (2010). No child left behind act. https://www2.ed.gov/policy/elsec/leg/esea02/index.html

U.S. Department of Education. (2015). Programs – Improving basic programs operated by local educational agencies (Title I, part A). https://www2.ed.gov/programs/titleiparta/index.html

Valenduc, G.; Brotcorne, P.; Damhuis, L.; Laurent, V., & Vendramin, P. (2010). The second order digital divide. Synthesis of the research report, Programme "Society and Future," FTU – Fondation Travail-Université (Namur).

van der Klaauw, W. (2005). *Breaking the link between poverty and low student achievement: An evaluation of Title 1*. http://www.unc.edu/»vanderkl/brlink.pdf

Van Dijk, J. V., & Hacker, K. (2003). The Digital Divide as a Complex and Dynamic Phenomenon. *The Information Society*, *19*(4), 315–326. https://doi.org/10.1080/01972240309487

Van Manen, M. (1990). *Researching lived experiences.* Albany, NY: State University of New York Press.

Varier, D., Dumke, E. K., Abrams, L. M., Conklin, S. B., Barnes, J. S., & Hoover, N. R. (2017). Potential of one-to-one technologies in the classroom: teachers and students weigh in. *Educational Technology Research and Development*, *65*(4), 967–992. https://doi.org/10.1007/s11423-017-9509-2

Vongkulluksn, V. W., Xie, K., & Bowman, M. A. (2018). The role of value on teachers' internalization of external barriers and externalization of personal beliefs for classroom technology integration. *Computers & Education, 118,* 70-81. https://doi.org.10.1016/j.compedu.2017.11.009

Wang, S.-K., Hsu, H.-Y., Campbell, T., Coster, D. C., & Longhurst, M. (2014). An investigation of middle school science teachers and students use of technology inside and outside of classrooms: considering whether digital natives are more technology savvy than their teachers. *Educational Technology Research and Development, 62*(6), 637–662. https://doi.org/10.1007/s11423-014-9355-4

Warschauer, M., Zheng, B., Niiya, M., Cotten, S., & Farkas, G. (2014). Balancing the One-To-One Equation: Equity and Access in Three Laptop Programs. *Equity & Excellence in Education*, *47*(1), 46–62. https://doi.org/10.1080/10665684.2014.866871

Wertheim, C., & Leyser, Y. (2002). Efficacy Beliefs, Background Variables, and Differentiated Instruction of Israeli Prospective Teachers. *The Journal of Educational Research*, *96*(1), 54–63. https://doi.org/10.1080/00220670209598791

Wiedmer, T. (2015). Generations do differ: Best practices in leading traditionalists, boomers, and generations X, Y, and Z. *Delta Kappa Gamma Bulletin*, *82*(1), 51-58.

Williams, C. A. (2019). Nurse educators meet your new students: Generation Z. *Nurse Educator*, *44*(2), 59-60. https://doi.org.10.1097/NNE.0000000000000637

Winslow, J., Smith, D., & Dickerson, J. (2014). Collaborative technology integration training: Graduate students and K-12 teachers learning together. *National Teacher Education Journal*, *7*(1), 45-52.

Woolfolk, A. E., & Hoy, W. K. (1990). Prospective teachers' sense of efficacy and beliefs about control. *Journal of Educational Psychology, 82*, 81–91. https://doi.org.10.1037/0022-0663.82.1.81

Wright, W. (2005). Evolution of federal policy and implications of No Child Left Behind for language minority students.

Yenmez, A. A. (2017). An examination of the effectiveness of instruction in which pre-service mathematics teachers use technology to overcome student difficulties. *Journal of Education and Practice, 8*(15), 1-21.

Yin, R. K. (2009). *Case study research: Design and methods* (4th Ed.). Sage.

York-Barr, J., Sommers, W., Ghere, J, & Montie, J. (2005). Reflective practice to improve schools: An action guide for educators. Corwin Press.

Zee, M., & Koomen, H. M. Y. (2016). Teacher Self-Efficacy and Its Effects on Classroom Processes, Student Academic Adjustment, and Teacher Well-Being. *Review of Educational Research*, *86*(4), 981–1015. https://doi.org/10.3102/0034654315626801

Zhang, J., Jin, S., Torero, M., & Li, T. (2018). Teachers and urban-rural gaps in educational outcomes. *American Journal of Agricultural Economics, 100*(4), 1207-1223. https://doi.org.10.1093/ajae/aay009

Zimmerman, B. J. (2013). From Cognitive Modeling to Self-Regulation: A Social Cognitive Career Path. *Educational Psychologist*, *48*(3), 135–147. https://doi.org/10.1080/00461520.2013.794676

APPENDIX A: PARTICIPANT EMAIL SCRIPT

Dear colleague,

Hello, my name if Rachel Hernandez. I am conducting research for my Doctor of Education dissertation with Liberty University and would love to invite you to participate. My study will be describing how teachers in Title I elementary schools integrate technology into the classroom. I think it is important to give Title I teachers a voice when it comes to technology integration in the 21st-century classroom. Your identity and responses to questions are entirely anonymous, and your input can assist future teachers and administrators in identifying and addressing the benefits and barriers to technology integration. To identify you as a potential candidate, please take the online survey by clicking the link below. There are limited risks associated with this research as the risks would be no more than you would encounter on any given day in your profession. Your participation can provide a better understanding of the perceptions of Title I teachers' integration of educational technology and improved support through professional development or training initiatives. Your input is vital in identifying the perceptions of Title I teachers' integration of technology. Please click here to take the survey:

Sincerely,

Rachel N. Hernandez

APPENDIX B: ONLINE SURVEY

1. How old are you?
2. What is your gender?
3. What is your ethnic background?
4. How many years have you been an educator?
5. What grade levels have you had experience teaching?
6. What are your current teaching credentials?
7. What professional educational degrees have you been awarded?
8. What is your comfort level when using technology in the classroom?
9. What types of educational technology tools are you utilizing in your current classroom?

APPENDIX C: CONSENT FORM
Consent

Title of the Project: #GENERATION Z: A PHENOMENOLOGICAL STUDY EXPLORING THE EXPERIENCES OF ELEMENTARY TITLE 1 TEACHERS' USE OF EDUCATIONAL TECHNOLOGY IN THE 21st CENTURY CLASSROOM

Principal Investigator: Rachel N. Hernandez, School of Education, Liberty University

Invitation to be Part of a Research Study

You are invited to participate in a research study. In order to participate, you must be a teacher who has at least 3 years of teaching experience and is currently teaching in a Title 1 elementary school in Central Florida. You must also be somewhat familiar with existing educational technology trends and use technology in your current classroom for the purpose of student learning. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research project.

What is the study about and why is it being done?

The purpose of the study is to describe the experiences of teachers' educational technology use in Title 1 elementary schools in Central Florida. This study is necessary because Title 1 elementary students are already at a disadvantage due to economic and academic challenges and may not have access to technology outside of the classroom. Additionally, these students may not know how to utilize technology effectively that is necessary to be college or career ready in the 21st century.

What will happen if you take part in this study?

If you agree to be in this study, I would ask you to do the following things:

1. Participate in a one-on-one interview. You will be asked to answer approximately 20 questions about technology use in your classroom. This interview will be about 20-30 minutes long. The interview will be audio and video recorded.
2. Join a group of teachers in a focus group where you will answer questions about technology integration and training. This focus group will last about 30-40 minutes and will be both audio-recorded and visually recorded.
3. Respond to three journal prompts. You will have two weeks to complete these prompts. They will be sent out to you via email. You will then have two weeks to answer three question about your experiences with technology use in the classroom. After completion, you will email these responses back to me.

How could you or others benefit from this study?

Participants should not expect to receive a direct benefit from taking part in this study. However, there could be findings that could benefit society.

Benefits to society include identifying strategies that may help to bridge the digital divide, which is the gap between students who have ready access to technology and technological skills and those who do not (usually minority and economically disadvantaged students). These strategies may help Title 1 students to later become more successful academically and assist in the preparation of college or career in the 21st century world. Additionally, this study may benefit Title 1 teachers, administrators, parents, and other Title 1 school and district stakeholders in a greater appreciation of the unique technological needs of Title 1 and Generation Z students. This study will hopefully contribute a deeper understanding of the developmental and educational needs of this generation.

What risks might you experience from being in this study?

The risks involved in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

How will personal information be protected?

The records of this study will be kept private. Research records will be stored securely, and only the researcher will have access to the records. Data collected from you may be shared for use in future research studies or with other researchers. If data collected from you is shared, any information that could identify you, if applicable, will be removed before the data is shared.

- Participant responses will be kept confidential through the use of pseudonyms. Interviews will be conducted in a location where others will not easily overhear the conversation.
- Data will be stored on a password-locked computer and may be used in future presentations. After three years, all electronic records will be deleted.
- Interviews and focus groups will be audio and video recorded and transcribed. Recordings will be stored on a password locked computer for three years and then erased. Only the researcher will have access to these recordings.
- Confidentiality cannot be guaranteed in focus group settings. While discouraged, other members of the focus group may share what was discussed with persons outside of the group.

How will you be compensated for being part of the study?

Participants will not be compensated for participating in this study.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether to participate will not affect your current or future relations with Liberty University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study, please contact the researcher at the email address/phone number included in the next paragraph. Should you choose to withdraw, data collected from you, apart from focus group data, will be destroyed immediately and will not be included in this study. Focus group data will not be destroyed, but your contributions to the focus group will not be included in the study if you choose to withdraw.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Rachel N. Hernandez. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at 352-348-5347 or email at rhernandez15@liberty.edu. You may also contact the researcher's faculty sponsor, Dr. David Vacchi, at dvacchi@liberty.edu.

Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515 or email at irb@liberty.edu

Your Consent

By signing this document, you are agreeing to be in this study. Make sure you understand what the study is about before you sign. You will be given a copy of this document for your records. The researcher will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

☐ The researcher has my permission to audio-record/video-record me as part of my participation in this study.

_____ _____

Printed Subject Name Signature & Date

APPENDIX D: INTERVIEW QUESTIONS

Interview Questions	Research Questions
1. What do you find most rewarding about being a teacher?	
2. Describe how you utilize educational technology in the classroom for academic purposes.	CQ
3. How many hours per day do you engage in technology use?	CQ
4. What types of educational technology tools do you utilize most often?	CQ
5. Which educational technology tools do you utilize that you perceive are most beneficial? Why?	CQ
6. Which educational technology tools do you feel are the least beneficial? Why?	CQ
7. Elaborate on how comfortable or uncomfortable you feel using educational technology in your classroom daily?	SQ1
8. Describe your attitude toward educational technology as an instructional tool for students in your classroom?	SQ1
9. How often do you research or experiment with new technology for future use in your classroom?	SQ1
10. How do you feel when you are tasked with utilizing new technology with your students?	SQ1
11. Describe how technologically savvy you perceive yourself to be?	SQ1
12. How does your administration prepare you for technology use in the classroom for instruction?	SQ2
13. Describe the ways that you have participated in training that targets the use of educational technology?	SQ2
14. What are your perceptions of the training, or lack of training, that you have received that will assist you in effectively using educational technology in your classroom?	SQ2

15. How often are you given opportunities for training initiatives for technology integration in your classroom? Describe these trainings.	SQ2
16. Describe the opportunities that you have outside of the classroom that allow you to explore and learn about educational technology.	SQ2
17. What opportunities do you offer students to use technology outside of the classroom for the purpose of learning?	SQ3
18. How does educational technology use impact student learning in your classroom?	SQ3
19. How do you train your students to use technology in the classroom?	SQ3
20. Why it is important for your Title I students to have access to technology in your classroom?	SQ3
21. What strategies do you use to ensure that your Title I students are trained in effective technology use that will allow them to be prepared for 21st-century learning?	SQ3

APPENDIX E: FOCUS GROUP QUESTIONS

Focus Group Questions	Research Questions
1. What are your thoughts on the influence of technology on student learning?	CQ, SQ1
2. What technological tools to you use most often in the classroom?	CQ
3. Which technology tools are most/least beneficial? Why?	CQ, SQ1
4. How has your view of technology use in the classroom changed over the course of your career?	SQ1
5. Describe a time when you were uncomfortable using technology in the classroom for instruction or learning?	SQ1
6. What are the advantages of technology use in the classroom for the purpose of learning? Disadvantages?	CQ
7. What obstacles do you find are common when teachers are learning to use new technologies in their classroom?	SQ1
8. Describe both positive and negative experiences with technology training (or lack thereof) or technology implementation in the classroom?	SQ2
9. How do students use educational technology in the classroom for the purpose of learning?	CQ
10. Describe how you teach your students to use new technology for learning?	SQ3
11. How are your Title I students' technology needs different when comparing them to non-Title I students? (SQ3)	SQ3
12. What other information would you like to add concerning educational technology integrating in the classroom?	SQ1
13. What other information would you like to add concerning technology training for both instructors and students?	CQ, SQ2

APPENDIX F: JOURNAL PROMPTS

Journal Entry Prompts

Journal Entry 1:

1. **Describe the technology you used in your classroom today.**
2. **How much of the day was spent using technology?**
3. How familiar were you with the technology being used?
4. Describe the level of student engagement that occurred during the lesson(s) that used technology?
5. What distractions may have occurred?
6. List any technology you frequently use (on a daily or weekly basis) and its purpose.

Journal Entry 2:

1. **Discuss the professional development training you have been offered this school year.**
2. **What training was beneficial?**
3. Which seemed like a waste of time?
4. Describe the level of support that your administration has offered when it comes to the use of technology in your classroom?
5. Describe the ways that your administration has offered or given training opportunities necessary for you to make integration successful?
6. In what ways has this training helped you to feel more comfortable with the use of technology for learning?

Journal Entry 3:

1. **Describe a situation where you were uncomfortable using technology in a lesson.**
2. **What made you feel uncomfortable?**
3. Describe how this situation may have hindered the success of the lesson?

APPENDIX G: PARTICIPANT BACKGROUND INFORMATION

Participants Background Information

Name	Age	Current Grade level	Years of Experience	Comfort Level Using Technology	Level of Administrative Support
Anna	49	Pre-K	26	Low	Low
Beverly	68	Kindergarten	24	Medium	Low
Cara	42	3rd Grade	5	Low	Low
Debra	54	4th Grade	15	Medium	Low
Elijah	33	2nd Grade	4	High	Medium
Felicia	35	4th Grade	13	Medium	Low
Helena	69	1st Grade	14	Medium	Medium
Jake	44	5th Grade	17	High	High
Julio	34	3rd Grade	9	High	Medium
Melissa	34	2nd Grade	13	High	High
Natalie	52	K-5 Steam	14	High	High
Nichole	58	4th Grade	26	High	High
Paige	41	3rd Grade	10	High	High
Samantha	32	4th Grade	8	High	High
Tiffany	26	5th Grade	5	Medium	Medium

APPENDIX H: CODING FREQUENCY

Coding Frequency of Cited Concepts

Code	Frequency
Training	71
Administrative Support	65
Technology Tools	58
Attitude	51
Benefits of Technology	42
Teacher Efficacy	37
Barriers of Technology	29
Modeling and Training for Students	19
Time	18
Mandated vs. Professional Freedom	17
Most Beneficial Technology	13
Emerging vs. Fading Technology Trends	12
Least Beneficial Technology	12

APPENDIX I: THEME DEVELOPMENT

Theme and Corresponding Categories

Theme	Corresponding Categories
1. *Emerging vs. Traditional Technology*	Technologically-savvy
	Technology tools used
	Most beneficial technology
	Least beneficial technology
2. *Benefits and barriers of technology use in the classroom*	Time (benefit and barrier)
	Training (benefit and barrier)
	Student engagement (benefit)
	Student efficacy (benefit)
	Collaboration and communication (benefit)
3. *Attitude toward technology influences teacher self-efficacy*	Attitude of administration influences teachers
	Attitude of teachers influences technology use
	Attitude and technology use influence teacher self-efficacy
4. *Administrative support*	Training
	View on the value of technology
	Incentives
	Teacher leaders
	Mandated vs. professional freedom
5. *Importance of technology skills for Title I students*	Economically disadvantaged
	Academically disadvantaged
	College and Career Ready