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Special Education Teachers' Experiences Integrating Mobile Devices in their Classroom

Regina Malz
Walden University

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College of Education

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Regina Malz

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the review committee have been made.

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Abstract

Special Education Teachers' Experiences Integrating Mobile Devices in their Classroom

by

Regina Malz

MA, Walden University, 2008

BS, Saint Thomas Aquinas College, 2006

Proposal Submitted in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

Richard R. Riley College of Education and Leadership

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Abstract

The problem for this study is the increasing number of students identified as special need learners in U.S. schools and the critical need to prepare them for success in the 21st century workplace. The purpose of this study was to examine the experiences of special education teachers while they integrate mobile tablets into the classroom. The conceptual framework was based on constructivism, andragogy, experiential learning models and Roger's diffusion of innovation. The research questions focused on understanding the experiences of special education teachers during their implementation of mobile tablets. This study was a qualitative multiple case study involving the interview special education teachers before and after lessons during which they integrated mobile devices into their classroom. These interviews and curriculum artifacts were analyzed using thematic inductive analysis. Results identified that all the teachers were generally in favor of integrating mobile tablets and believed they were integrating them successfully. However, the teachers who believed in their personal ability to utilize mobile devices in their classrooms were able to navigate multiple issues and integrate them more effectively. The level of integration was also influenced by the usability, functionality and accessibility of the technologies. Additionally, all teachers related their ability to integrate technology successfully with the type and quality of professional development they received. Understanding how special education teachers successfully integrate innovative technologies has the potential to support special needs learners for their future success in the 21st century workplace.

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Dedication

This research is dedicated to special educators who want to make a difference in their students' lives. Integrating mobile tablets is an opportunity to lessen the academic, social, and motivational gaps between students with special needs and those without.

Acknowledgments

I would like to thank Dr. Russell for helping me throughout my research. During my time at Walden I had many different committee members, but Dr. Russell went above and beyond. She always answered my questions, gave sage advice, and helped to guide this research to what it is today.

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Chapter 1: Introduction to the Study

Introduction

There has been a rapid integration of new technologies into U.S. classrooms. According to Education Market Research, there are approximately 13.2 million computing devices in K-12 U.S. schools (Simba Information, 2015). This 13.2 million includes 4.7 million desktop computers, 3.9 million laptop computers, and 2.3 million mobile tablets (Simba Information, 2015). A report by Project Tomorrow stated that one-third of U.S. public school students used mobile devices for schoolwork in 2014 (Nagel, 2014). Mobile tablet purchases by schools increased by 8.6% during the 2014-2015 school year (Simba Information, 2015). According to a study by Futuresource Consulting Ltd, half of all U.S. public school students during the 2015-2016 school year had the opportunity to work one-on-one with mobile devices during the day (Molnar, 2015).

Additionally, there is an increasing number of students who have special needs. During the 1990-1991 school year, 4.7 million students received special education services. This increase in students came to about 11% of all public-school students between the ages of three to 21 years old (National Center for Education Statistics, 2015). During the 2012-2013 school year, 6.4 million students receiving special education services which amounted to about 13% of all public-school students between the ages of three to 21 years old (National Center for Education Statistics, 2015).

The productive integration of new technologies is dependent upon understanding multiple issues of reform, such as aspects of teacher professional development and the real-world practical act of using the technology in the classrooms to support diverse

learners. Students with special needs require a different type of teaching and learning to reach their potential, which cannot be achieved in a regular education classroom. This study was designed to understand how mobile devices are being integrated into an innovative school to support special needs learners from the perspective of teachers who are integrating the technology into their classrooms. This real-world perspective may provide new understandings on practical implications of using new technologies to support special needs learners.

The major sections of this chapter include background information regarding technology integration and mobile tablet integration. Following the background is information on educational reform, the problem statement, and the purpose of the study, the research questions, and the conceptual framework. I review the conceptual framework for this study, including the constructivist learning theory, andragogy, and experiential learning theory. Technological pedagogical content knowledge is also considered as it relates to teachers and their ability to integrate mobile tablets. Lastly, the nature of the study, operational definitions, assumptions, scopes, limitations, and the significance of the study are described.

Background

Teachers and administrators have struggled with implementing technology-based reform in schools. Graham pointed out that throughout history when a need for educational reform became popular, there were significant delays between when the educational reform was introduced and when it changed the classroom (as cited in Ravitch & Vinovskis, 1994, p. 17). Graham explained that in the early twentieth century, public

schools were initially directed to accommodate the rising number of students being accepted into their classrooms. The federal policy required schools to include all students in the least restrictive learning environment by requiring that public schools accommodate the varying academic needs of each student (as cited in Ravitch & Vinovskis, 1994, p. 18).

There has been a rapid increase in technology in the classroom. During an interview conducted in 1985, Papert explained that computer integration was critical in the classroom because students will have the opportunity to engage in tasks that are not possible without computers (Fiske, 1985). At that time, the computer to student ratio was one computer to 70 students. and Papert explained that the reality of students improving from such limited computer time is comparable to 70 students sharing one pencil and trying to write (Fiske, 1985). In 1998, the ratio of computers to students was 12 students to one computer and in 2001 it was five students to one computer.

Mobile tablets, such as the iPad, have a touch-screen interface that allows students who lack hand-eye coordination to practice their letters independently (Flewitt, Kucirkova, & Messer, 2014, p. 109). Independent learning, especially for students with disabilities, is important to help increase motivation and cognitive skills. Additionally, a study by Flewitt, et al., (2014) showed that students could use the iPads to communicate ideas in a variety of ways that were not possible without the iPads. For example, a student who cannot generate words and write them on a piece of paper to create a story could use the iPad to draw, take pictures, and record verbal descriptions to create a story (Flewitt, et al., 2014, p. 110).

There are several research studies relating to students' achievement and motivation when mobile tablets are integrated into the classroom (Carr, 2012; Chen, 2013; Eichenlaub, Gabel, Jakubek, & McCarthy, 2011; McMahon, Cihak, et al., 2016; Riley, 2013; Shih-Hwa & Gwo-Guang, 2013). These studies showed that mobile tablet technologies could support learning. The studies by Eichenlaub, et al., (2011), McKenna, Schulz, Otieno, Wang, and Williams (2015), Musti-Rao, Cartledge, Bennett, and Council (2015, and Lowman and Dressler (2016) showed that mobile tablets helped students to reach achievement levels that they were unable to reach without mobile tablets.

The Individuals with Disabilities Education Act (IDEA) governs how schools provide early intervention, special education, and all related services to children from birth until the age 21 (U.S. Department of Education, 2004). In 2004, The IDEA act required that children with disabilities should be allowed to learn in the regular education classroom without having to keep up with students in the class who do not have disabilities. In regard to special education, the number one goal is always to lessen the achievement gap between students without disabilities and those with disabilities (U.S. Department of Education, 2004). Integrating new technologies has the potential to close that gap for special education students if teachers can integrate these new technologies to their potential (Chiu & Churchill, 2016; More & Travers, 2012; Spaulding, 2014).

Teacher professional development is a necessary component for using new technologies. Research has shown that teachers unfamiliar with technology often are unprepared to use it (Herold, 2015). National surveys have shown that teachers would like to use technology to make their jobs easier, but do not want to leave traditional

instructional strategies (Herold, 2015). A study by Blackwell (2014) showed that teachers felt ill-prepared to implement the iPad, which is a mobile tablet, into their classrooms. One teacher explained that at her school, she was distributed the iPads on the first day and was left to her own devices to implement them in the room (Blackwell, 2014, p. 13). Some of the teachers in this study did not have access to professional development in their schools before they were required to implement mobile tablets.

In another study, teachers attended an Apple workshop on how to use the iPads in their classroom, but they chose to attend this on their own; it was not mandated by the school (O'Malley, Lewis, & Donehower, 2013). Despite doing this, teachers remarked that the integration took a great deal of time (O'Malley et al., 2013, p. 6). Additionally, this study showed that students benefited the most by using the iPads to reinforce skills they were already taught before using the iPad. For example, they participated in innovative ways to increase their mathematical skills and promote independence, but the iPads were not used to teach new skills (O'Malley et al., 2013, p. 2). Also, Hesser and Schwartz (2013) and Eichenlaub, et al. (2011) studied teachers' abilities to integrate mobile tablets without changing their instructional design. Both studies found that student learning was not changed if the tablets were integrated without changes in instructional design.

A mixed-methods study by Dalal, Archambault, and Shelton (2017) examined the results of a semester-long professional development training for technology to international teachers from developing nations. The course was designed based on Shulman's (1986) concepts regarding pedagogical content knowledge. Dalal et al. (2017)

used Shulman's theoretical framework and how it relates to teaching to design a professional development course that included pedagogical knowledge, technological knowledge, and content knowledge (p. 119). Their study showed that results from coursework during an entire semester improved international teachers' understanding of how to integrate technology. The study also showed that even when teachers know how to create student-centered lesson plans with technology integration, limited access to technology in the classroom influences what happens when the technology is integrated (Dalal, Archambault, & Shelton, 2017, p. 128). Additionally, survey results showed that teaching abilities across all the domains showed an improvement (Dalal et al., 2017, p. 128).

Therefore, the mobile tablets were ineffective if the new technology was integrated into an already functioning instructional design. Cuban (2013) pointed out that unless the technology is integrated successfully and instructional practices change to use this technology to its utmost potential, there is no true value to integrating the technology (p. 60). Graybeal's (2013) study focused on teacher experiences with iPads and indirectly on their learning. Graybeal explored how mathematics teachers have been ill-prepared to implement the Common Core Standards in their classroom. Graybeal discovered the need to help teachers become more knowledgeable about mathematical procedures and practices. An iPad App was created to help teachers learn the procedures and document their students' progress with the Common Core Standards. The study found that 17 of the 22 participants increased their understanding of the Common Core Standards. Understanding how teachers in an innovative private school teaching special needs

learners integrate mobile devices may help other teachers develop effective practices for integrating mobile devices.

Problem Statement

The research problem is that there is dearth of research describing special education teachers' experiences when mobile tablets are integrated. Special education teachers' experiences are the specific object of investigation in this study. Teachers are a critical component to the successful integration of mobile tablets, so understanding their experiences is important. By studying this problem, future educators and administrators can better prepare for technology integration.

This study is designed to understand the experiences of special education teachers in the United States. These eight teachers work at different schools across the United States that serve special needs learners using innovative technologies and non-traditional constructivist learning environments. The increasing number of special needs learners have resulted in pressure on special education teachers to integrate technology. Mobile devices have been shown to support special needs learners, but the teachers require a higher quality of professional development to integrate mobile devices effectively. There is a gap in research because, after an extensive literature review, there is no information on mobile tablet integration in non-traditional special education schools. This is a major area of interest because, with the rising number of special needs students, public school districts are utilizing non-traditional private schools to help their students.

The potential of technology, in general, and mobile devices, specifically, to support special needs learners, has been identified (Graybeal, 2013). However, there are

few studies that are designed to understand the teachers' experiences as they integrate mobile devices. This study may provide important information about how teachers experience the real-world of integrating mobile devices to support the development of effective technology programs for closing the learning gap for special needs learners. Additionally, this study was concerned with understanding the experiences of these teachers in an innovative, non-traditional private school that is contracted to teach special needs learners.

Purpose of the Study

The purpose of this exploratory case study was to examine the experiences of special education teachers while they integrate mobile tablets into the classroom. This study was a qualitative single case study of special education teachers who have integrated and are integrating mobile tablets into the classroom at a school for students with special a

Secondary questions include:

1. What are the perceptions of special education teachers integrating mobile devices into their classrooms?
2. How do special education teachers describe their experiences while integrating mobile devices into their classrooms?

The second research question is: How do special education teachers integrate mobile tablets in special education classrooms?

Conceptual Framework

The purpose of this study was to examine the experiences of special education teachers while they integrate mobile tablets into the classroom. The study will connect

constructivism, adult learning, experiential learning, and Roger's theory of diffusion of innovations to explain how teachers learn and construct their understanding and knowledge to integrate mobile devices into their classrooms.

Constructivism is a theory that explains how people construct their knowledge through personal experience. According to Jonassen, Peck, and Wilson (1999), constructivist learning involves knowledge that is constructed not transmitted, embedded in activity, and anchored in the context of the activity. In a special education classroom, using constructivism as a learning theory would mean allowing students the freedom to create their knowledge while using active techniques, such as experimenting and real-world problem-solving.

Adult learning was researched extensively by Malcolm Knowles, who suggested four principles: adults must be involved in the planning of their instruction, experiences are the basic learning activities, adults have the most interest in subjects that they have a personal connection to, and it must be problem-centered rather than content-oriented (Knowles, Elwood III, & Swanson, 2015). These principles are critical as they apply to teachers' experiences with mobile tablet integration and how teacher classroom experience relates to professional development. Following these principles, the professional development needed to successfully integrate the mobile tablets should allow teachers to be involved in the planning, the professional development should involve problem-solving and learning activities with mobile tablets, and teachers should be emotionally invested in the implementation.

Experiential learning theory combines experience, perception, cognition, and behavior (Kolb, 2014). The first concept of experience would be when special education teachers experience the use of the mobile tablet the first time, they are introduced to it. This could be when they use it for personal use or if they receive it for the first time and are asked to experiment with it. Perception would be when the special education teachers reflect on their experiences with the mobile tablets. Cognition is when they envision what it would be like to incorporate it into their classroom. The last stage, behavior, is when they plan how they are going to use it in their classroom.

Roger's theory of the diffusion of innovations (2003) will be used to structure the analysis of the data set (Rogers, 2003). By defining both the process of diffusion of innovations, such as mobile tablets, with the concept of differing levels of change agents, I will be able to use these concepts to analyze the data set and respond to the research questions guiding this study.

Nature of the Study

This proposed study will utilize a single case study method with multiple participants because case studies allow for analyzing the information provided by a small group of individuals who are in current, real-life situations (Khan, 2014, pp. 226-227). This study will use the Yin model of a case study (1994) for data structuring and analysis. Interviews and analysis of a lesson plan will be used to get an in-depth understanding of the experiences of these teachers. This choice was made because a case study with interviews will allow the researcher to ask questions that could not be answered through

large group surveys (Khan, 2014, pp. 226-227). The analysis of the lesson plan will also provide concrete examples of how mobile tablets are being used.

For my study, I will interview 8-10 teachers. This will allow the researcher to gain an in-depth understanding of these teachers' experiences for analysis. One of the interviews will take place prior to the execution of a lesson that involves mobile tablet integration. The second interview will take place sometime after the lesson plan has been used. Each teacher will submit a copy of the lesson plan used that includes mobile tablet integration. To make sure that the sample is not too narrow, the researcher will sample for diversity, including gender, years of experiences, grade level, or ages taught. (Miles, Huberman, & Saldana, 2014, p. 36).

Definition

The following words are used throughout the study and have the following definitions:

Developmental disabilities are defined by the Office of People with Developmental Disabilities in New York as any special conditions that occur in a student from birth up until the age of 22, which is when a student maxes out of free specialized education. It is defined as taking on different forms and different developmental delays, and can cause the student to develop more slowly, have physical limitations, and/or trouble learning and growing like other children. Some of the qualifying conditions include intellectual disability, autism, cerebral palsy, epilepsy, familiar dysautonomia, and/or neurological impairment. Students with developmental disabilities will be using the mobile tablets in this study (Office for People with Developmental Disabilities, 2016).

Educational technology is defined as a component used to help teach students in a way that could not be done without that specific technology. The educational technology is referred to in this report is the mobile tablet (Aziz, 2010).

Professional development is defined as the educational opportunities provided to teachers to assist them in developing skills for use in their classroom (NYSED, 2016). In this study, it applies to technology education and technology integration.

Special education is defined as schools in which every student has developmental disabilities and all teachers are certified special education teachers (Private School Review, 2016; Special Education Guide, 2016).

Special Education Teachers are teachers who are certified in special education and carry a current teaching degree in the state they teach (Private School Review; 2016).

Technology integration is defined as the act of incorporating technology into the classroom to help the students learn in a way that could not be done without that technology (Aziz, 2010).

Assumptions

The qualitative case study methodology will allow the researcher to gain in-depth insight and identify patterns and themes surrounding the teachers' experiences integrating mobile tablets. This single case study with multiple participants will enable the participants to describe their individual experiences in the context of their integration. This study may add to the existing literature by gaining a deeper understanding of the experiences of special education teachers integrating mobile devices. The assumptions that underlie this study's design include:

1. The design of the interview would provide opportunities to understand the nature of the participants' experience.
2. Participants will be open and honest describing their experiences.
3. The researcher will ensure the participants' confidentiality to protect against this assumption.

Scope and Delimitations

The research problem is that there is a lack of information about special education-specific teachers' experiences when mobile tablets are integrated into the classroom. Teacher interviews will be used to learn more about their experiences. The boundary of the study was limited to special education teachers. These teachers are in a variety of different school settings throughout the United States. The students must have developmental disabilities. Teachers must have already integrated the mobile tablet into their classroom. Teachers from regular education and those without the involvement of the mobile tablet are excluded from this study.

The boundaries of the study include the participants only being located in the United States. Although the small number of participants means an opportunity to focus on experiences, it also means that broad generalizations cannot be concluded. The study may provide great details on experiences, but it cannot be concluded that all people will share the same experiences.

Limitations

Limitations are all the potential weaknesses in a study, which are out of the researchers' control (Simon, 2011). Findings from the study may not be generalizable to

other settings because qualitative studies are done in real-world settings; then there is limited transferability (Wiersma, 2000). The limitations of this study are related to a single case study design with multiple participants. Limitations of the study include the relatively small sample size, limited diversity of participants, and geographical location, as well as the bias of the researcher toward the participants. Additionally, I have used mobile tablets in my classroom before conducting this study. The small number of participants means that no percentages will be determined during the results as they would in a qualitative study. The specificity of having only 8 participants means their experiences will receive all the focus. Transferability is limited solely to special education specific teachers. To address these limitations, a large amount of information will be collected from each participant to contribute to a detailed description of the experience. A lesson plan will be collected, and member-checking will all be used to limit bias.

Significance

The purpose of this study was to examine the experiences of special education teachers while they integrate mobile tablets into the classroom. This is a single case study that focuses on eight special education teachers with experience implementing mobile tablets in their classrooms. This is an appropriate approach to this study as qualitative research allows me to understand the experiences of the teachers. Through this study, the researcher aims to understand the experiences of teachers involved with the integration of technology into the special education environment. It has relevance to special education and other educational areas as technology, specifically mobile tablets, are increasingly being integrated into classrooms.

This study will fill the gap identified in the problem statement. The contribution of this study was the detailed description of teachers' experiences in the classroom during mobile tablet integration. There are currently no research studies describing mobile tablet integration in a non-traditional private school for children with special needs. This research will support reform-based professional practice as teachers and administrators will know more about how special education teachers integrate mobile tablets. Teachers and administrators can learn from the experiences of others about how to integrate technology successfully and meaningfully. Teachers and administrators can also connect how professional development has effects on the success of mobile tablet integration. They can also learn ways to use mobile tablets within instructional designs. This aligns with the problem statement and reflects the potential relevance of this study to society because the U.S. government has been stressing the need for technology integration (U.S. Department of Education, 2004). Understanding technology related issues from the perspective of the teacher is critical. This information may lead to better experiences and preparation in the future.

Summary

In this chapter, the background of the problem was introduced, including the need to study teachers' experiences when mobile tablets are integrated into the special education classroom. I also discussed professional development opportunities for teachers. I summarized the background of technology in special education was summarized. The purpose and significance of the study were discussed. The research design, research question, and conceptual framework were listed. A case study was identified as the nature

of the study and the assumptions and limitations were explored. The most common terms were defined, and the expected findings were described. The purpose of Chapter 2 is to explore literature that relates to special education and technology integration. Chapter 3 will provide a thorough description of the methodology and methods for this study.

Chapter 2: Literature Review

Introduction

The purpose of this study was to examine the experiences of special education teachers while they integrate mobile tablets into the classroom. The problem that this study address is the increasing number of students identified as special need learners and the related issue of integrating advanced technologies in classrooms to support these learners. Research has identified integration as the technology with varied learning results as it relates to students with special needs.

The problem underlying this study was the lack of research as it applies to special education teachers' experiences when mobile tablets are integrated. The purpose is to provide more information on these experiences so that decisions can be made about the type of professional development and the amount of preparation time that will be needed to make mobile tablet integration successful. This chapter will cover 1) the historical perspectives on educational reform, 2) current perspectives, 3) special education initiatives, 4) technology integration, 5) technology integration and professional development, 6) teacher perceptives/experiences with technology integration, and 7) the research methodologies rationale.

Literature Search Strategy

The following library databases were accessed: Walden University Library, ERIC, and SAGE Premiere. The search engine used was www.google.com. The keywords used to search for articles were: *mobile tablets, mobile device, iPad integration, special education and mobile tablets, iPad integration for special education, iPad integration for*

classrooms, constructivism, teacher education, experiential learning, tablet computers, special education or students with disabilities, qualitative or case study, pedagogical content knowledge, professional development, technology, integration, andragogy, professional development andragogy, and technology integration. When no articles came up related to teachers' experiences in a special-education specific school, the Walden University librarian and the librarian at Mahwah Public Library were consulted for references. Neither librarians could find specific peer-related journals related to this topic.

Conceptual Foundation

The overarching concepts related to the design of this research are 1) constructivism to understand the nature of learning in the classrooms during the integration of new technologies, 2) andragogy to understand the teachers' acquisition of new technologies, 3) experiential learning classrooms as the focus on classrooms' design, and 4) Roger's diffusion of innovation to understand the teachers' integration of new technologies.

Constructivism

Jean Piaget first used the expression constructivist epistemology to explain that knowledge is constructed by experiences (The Basics of Philosophy, 2008). There are a few major theoretical propositions that apply to each of the three theories. For constructivism, a theoretical proposition is that if teachers are given ample time to construct their knowledge while using mobile tablets, they will be able to integrate the mobile tablets into their classroom. Research by Cuban (2001) has shown that computers were not easily integrated into the classrooms and when they were, little was done to

change the teaching/learning routines. In other words, the same instructional designs in classrooms were in place, and computers were used minimally throughout the day (Cuban, 2001). It is a theoretical proposition that if teachers had more time and quality guidance, they could construct an instructional design that incorporates mobile tablets to enhance their teaching strategies in ways that could not be done without the mobile tablets.

A study by Judson (2006) showed that teachers who were motivated to integrate technology into their classrooms were more likely to already utilize constructivism in their classrooms. The study showed that teachers' instructional designs reflected constructivism principles and teachers', through a survey, connected their teaching objectives to constructivism. However, through observation, it was shown that there was little connection to constructivism while technology was being integrated (Judson, 2006). This showed that teachers who are already utilizing constructivism in their classroom might not have to change their instructional designs to integrate mobile tablets. In Judson's study, it was concluded that constructivism was not the theory used to describe teachers' learning. It was believed to be at first, but further examination led to other conclusions.

Andragogy

Adult learning theory, also known as andragogy, originated from Malcolm Shepherd Knowles (Knowles, Elwood, & Swanson, 2015). He made five assumptions about adult learning, which led to four principles to follow when teaching adults. The assumptions were that as adults mature they become self-directed rather than dependent, they accumulate more experiences and increase their resources for learning, they become more ready to learn, they prefer immediate application and problem centeredness, and

their motivation is internal (Knowles et al., 2015, p. 72). According to Knowles' theory of andragogy, adults need to understand the value behind learning something new and, when they are given the opportunity to voice their expectations and what they want to be able to do with technology, they will be more committed to learning (Knowles et al., p. 35).

Adults need to learn how to be self-directed because they may not have experience learning independently.

Per adult learning theory, if the theoretical proposition is that if the principles described by Malcolm Knowles are put into action when providing professional development for special education teachers to incorporate mobile tablets, integration may be more successful. In other words, the professional development needed for successful integration of mobile tablets should allow teachers to be involved in the planning and the actual professional development should involve problem-solving and learning activities while using the mobile tablets, so teachers are emotionally invested in the implementation (Knowles et al., 2015). If one or more of these elements are not in place, it decreases the likelihood that mobile tablet integration will be successful.

Experiential Learning Theory

Experiential learning theory originated from David Kolb, who believed that knowledge is created through the transformation of experience (Kolb, 1984, p. 38). Kolb's theory revolves around four stages: concrete experiences, which are in the do stage, reflective observation, which is the observe stage, abstract conceptualization, which is the thinking stage, and active experimentation, which is the planning stage (Kolb, 2014). For experiential learning theory, the major theoretical proposition is that if experience,

perception, cognition, and behavior are combined during the process before mobile tablets are integrated, teachers will successfully integrate, but their instructional designs may not need to change. This is because during the third stage, of cognition, teachers envision what it would be like to incorporate mobile tablets into their classrooms (Kolb, 2014). They may think of a way to successfully integrate mobile tablets without needing to change their instructional design. Ultimately, this would be tested out during the last stage of behavior, which is when teachers plan how they are going to use mobile tablets in their classroom (Kolb, 2014).

Crompton, Olszewski, and Bielefeldt (2016) distributed a survey to assess the need for professional development as it relates to technology integration of mobile devices. Their study showed that at first the focus in schools is on technology integration and pedagogical coaching, but over time the focus shifts to ongoing support during implementation (Crompton, Olszewski, & Bielefeldt, 2016, p. 483). Their research also showed that although mobile technologies have capabilities to enhance learning, they are not always integrated effectively to make this possible (Crompton et al., 2016, p. 484). Their study also showed that teachers lack the confidence needed to successfully implement technology meaningfully (Crompton, et al., 2016, p. 484).

Hope, Hunter, Douglas, and Wighting (2015) studied a school using the Nook Initiative, which promotes the implementation of the Nook tablet to Kindergarten through 12th-grade students resulted in a positive impact on teacher integration skills. The Regent University School of Education decided to continue using the Nook in their Special Education and Reading Specialist Programs. One major asset to using the Book is that the

local Barnes and Noble provided free training classes and assistance to every teacher integrating (Hope, Hunter, Douglas, & Wighting, 2015, p. 31). This service was available every day of the week. They also decided to use the iPad mini in their Career Switcher Program, which is a program that gives teacher's a license to teach (Hope et al., 2015, p. 33). This way the tablets were deliberately integrated into teacher professional development programs. The goal is for progress to be recorded and analyzed in the future to improve this system long-term (Hope et al., 2015, p. 35).

Rogers' Theory of the Diffusion of Innovations

Rogers' theory of diffusion of innovations (2003) contains the concepts to frame this study. The concepts will help to explain the accessibility, functionality, and usability of mobile tablets as they are integrated into the classroom. The concepts explain how these attributes of the mobile tablets are perceived by teachers. This is an important aspect to understand if the integration of mobile tablets is successful. Rogers defines adoption of technology as the "full use of an innovation as the best course of action available" (Rogers, 2003, p. 177).

There are four elements in Rogers' Theory of Diffusion. In this study, the first element, innovation, include the ideas and practices that teachers perceive mobile tablet adoption. The next element is communication, during which teachers both create and share information to help aid in understanding how to integrate the technology (Rogers, 2003). The third element is time and explains the amount of time needed for teachers to accept the innovation of mobile tablets. In other words, the rate of adoption (Rogers,

2003). The fourth element is the social system, which is the teachers involved in the study as well as the other teachers and administrators in the school system.

Penjor and Zander (2016) studied different educators who were required to help integrate a Virtual Learning Environment (VLE) at the Royal University of Bhutan. Different instruments were used to categorize the participants to determine the type of adopter they were. For example, if one of the staff said that he/she tries "new available features of the VLE on their own," that staff could be categorized under the adopter type of innovator (Penjor & Zander, 2016, p. 76). For people who replied, "I am not interested in VLE for my teaching," would be categorized as a laggard (Penjor & Zander, 2016, p. 76).

The conclusions of these studies showed that although the Royal University of Bhutan required that all staff adopt the VLE, they did not assist in the process of integrating. The staff with less experience with technology may have fallen into the laggard category because they did not know how to do it. The study also lacked information on communication channels, which Penjor and Zander point out could have explained for the slow adoption process in general. Penjor and Zander (2016) also point out that when exploring the nature of the social system, the lack of interconnectedness in the university could also explain the difficulties with complete acceptance and successful integration.

Rationale for Conceptual Framework

Constructivism, adult learning theory, and experiential learning theory were chosen because they relate to adult learning and the ability to create learning

opportunities. Regarding adult learning theory, constructivism, and experiential learning, it is not possible for adults to learn without the ability to self-direct. This relates to the researcher's study because teachers' experiences when mobile tablets are integrated will be analyzed through the multiple participants in the single case study method. The special education teachers' experiences will be shaped by what teachers feel learning is and how they react based on constructivism, adult learning theory, and experiential learning. The theory of diffusion of innovations will be used as a lens to understand the teachers' experiences as they integrated the mobile tablets into their classrooms.

Literature Review Related to Key Concepts

In this literature review, I will review the following topics related to my study design including 1) pedagogical content knowledge, 2) teacher professional development 3) research on the integration of mobile devices, and 4) the characteristics of special needs learners.

Pedagogical Content Knowledge

Pedagogical content knowledge is the blending of content knowledge and pedagogical knowledge to create high-quality learning opportunities for students (Shulman, 1986, 1987). Shulman explained that teachers could learn to present information in a way that makes it understandable for each student by confronting content knowledge and pedagogical knowledge at the same time (Shulman, 1986). Mishra and Koehler (2006) combined technology with this concept, which they refer to as, technological pedagogical content knowledge. It is explained that this concept means using technology in conjuncture with combining pedagogical techniques with content

knowledge to help students learn more than they could have learned without the technology (Mishra & Koehler, 2006). A qualitative study by Gropen, Kook, Hoisington, and Clark-Chiarelli (2017) explored the difficulties that preschool teachers face when they have to integrate science.

In the study, the authors of the study explained that the science content knowledge that teachers already harbor are indicators of how their students' science learning will progress (Gropen, Kook, Hoisington, & Clark-Chiarelli., 2017, p. 608). In other words, if teachers have a great deal of knowledge, passion, and/or professional development for science they will help their students to learn it. However, teachers who lack experiences and training in science, therefore, do not have the support needed to develop their understanding or their students' understanding of science (Gropen, et al., 2017, p. 608).

A comprehensive teacher quality program called Foundations of Science Literacy (FSL) was created using the theories of Pedagogical Content Knowledge to help teachers with their "understanding and skills in science and science teaching" as well as their ability to plan, facilitate, and assess their students (Gropen, et al., 2017, p. 609). Some of the activities in FSL included an inquiry learning cycle, an exploration framework, an engage-explore-reflect cycle assignment, and sets of Talk Tips (Gropen, et al., 2017, p. 611). In addition to the coursework, it also provided curriculum guidance, classroom-based assignments, and coaching (Gropen, et al., pp. 612-613). The results of this study showed that after completing the FSL program teachers compared better to teachers who have been exhibiting higher quality teaching techniques (Gropen, et al., p. 627).

Professional Development

The study of the professional development needs of educators integrating mobile tablets has resulted in a mix of results. The qualitative study by O'Malley et al. (2013) found the barriers of integrating mobile devices included teacher difficulty with the technology integration, the amount of time it took for them to learn how to use the mobile device, how to integrate it into the classroom, and the amount of technical support they needed during the integration . Although the study does not state whether teachers' instructional designs were changed when the iPads were integrated, the results imply that the instructional designs did change (O'Malley et al.

This is because it was stated in the findings that, “students achieved goals that they could not achieve without the use of technology” (O'Malley et al., p. 12). This implies that the current instructional designs were not effective for all the students. Since it was also reported that a massive amount of time was needed for the teachers to receive professional development it also implies that there were many changes to the instructional design. Otherwise, it would have taken less time to learn how to use technology that was supplementing lessons already in place.

In a separate study, the Brown Mackie College System required that all their students and faculty use iPads for learning (Fuhrman, 2013). The school started with a small number of students and faculty before requiring integration for everyone. It was determined through their integration efforts that a great deal of planning and professional development is required to make the integration successful (Fuhrman, 2013). However, starting with a small number of students and then integrating it to the larger student body made it easier.

As an educator, Ingle (2014) searched for a way to accommodate the special needs of some of her students while still being able to challenge the advanced students. Ingle explained that it was much work writing the grant to earn the iPads for the classroom, but the harder part was then learning how to use them and how to integrate them into the classroom. She began by reading as many blogs as she could to determine which reading and mathematics apps to use (Ingle, 2014). This was very time-consuming, but her desire for integrating the iPads successfully is what motivated her to self-educate in this mission. She began by using the iPads for one specific mathematics lesson: multiplication. She found that the multiplication games that allowed students to practice their times tables while challenging each other encouraged healthy competition and students improved (Ingle, 2014).

After becoming comfortable with using the iPads for this lesson, Ingle (2014) found an app, Book Creator, on the iPad that would help students to develop their writing skills. After a few months of using the iPad to type, edit, and revise, every student in the room, including those with disabilities, could write a novel. Additionally, their writing scores on standardized testing improved (Ingle, 2014). Ingle observed that students used the iPads to meet their needs without needing assistance. She reports that they would access the embedded dictionary if they did not understand the text or would watch a video if they did not understand the meaning (Ingle, 2014). From the experience of using the iPads, Ingle realized that she could integrate subjects together. For example, using graphic organizers on the iPads to collect information on habitats, life cycles, and food chains, while reading a book on the iPad on gorillas and elephants (Ingle, 2014). By the end of the

school year, the students were using the iPads for independent and cooperative learning (Ingle, 2014).

One case study showed that teachers who were integrating the iPads experienced intrinsic barriers that prevented them from using the iPads to their potential (Andzeng & North, 2013). Participants reported having difficulty finding a way to use the iPads for specific content lessons and found difficulty finding a way to use one iPad amongst several students (Andzeng & North, 2013). Both participants felt that their school needed to provide more support as well as collaboration opportunities (Andzeng & North, 2013).

Teachers may not have access to professional development in their schools before they are required to implement mobile tablets. Other teachers may gain experience with using iPads in the classroom on their own, such as by attending an Apple workshop (O'Malley et al., 2013). Other teachers may implement iPads with no experience at all. iPads could be used for multi-sensory interactive apps that to supplement a lesson that was already taught, for entertainment purposes, and for cooperative learning and socialization. Even using the iPad for those purposes requires a great deal of professional development, as shown through a study by O'Malley et al. (2013).

This study found that by using the iPads students learned skills that allowed them to participate in innovative ways to increase their mathematical skills and promote their independence (O'Malley et al., 2013). It was also identified that teachers remarked that this integration took a great amount of time (O'Malley et al., 2013). A conclusion was that quality professional development could support teachers to more effective integration of iPads in their classrooms.

Spaulding (2014) conducted a quantitative study to learn more about teachers' perceptions and how those perceptions altered the effectiveness of their ability to integrate iPads in their classrooms. Of the 29 teachers surveyed, 54% had never used an iPad before integration. Surveys showed that prior to integration 69% of the teachers were concerned about using the iPads and after the integration 44.4% were still concerned (Spaulding, 2014). This means that 24.6% of the educators became more comfortable with the iPads just from using them.

Yet, 44.4% is still a large percentage of teachers to be concerned with technology that they are required to actively use in their classroom every day. One statement in the survey was, "I would like to know what resources are available to manage all that iPad technology requires" and before the integration 41.4% answered that question as true and afterwards 32.1% answered that question to be true (Spaulding, 2014). This means that there was still a high percentage of teachers who felt they needed professional development to use the iPads successfully.

According to a qualitative study by Chiu and Churchill (2016), teacher beliefs, attitudes, and anxiety changed after mobile devices were integrated into their classrooms. Chiu and Churchill focused on secondary school teachers in Hong Kong. Their surveys showed that teachers who had good technology skills had a positive attitude towards integrating mobile tablets, but some reported having strong anxiety after integrating them (Chiu & Churchill, 2016). It also showed that teachers gained experience while using the mobile tablets and that teachers with higher anxiety levels will likely require longer periods of time to learn how to integrate (Chiu & Churchill, 2016). The study also

concluded that attitude towards the mobile integration did not change even when teachers were more comfortable integrating them. Chiu and Churchill (2016) concluded that further studies need to be conducted to learn the key factors affecting teachers' attitudes when mobile tablets are integrated.

In a quantitative study, Crichton, Stuewe, Pegler, and White (2012) studied the opportunities and challenges that teachers and students in a K-12 urban Canadian school district faced when handheld devices were used in the classroom. They first introduced iPods and laptops to the classroom. After several weeks they added the iPad. Although Crichton et al. (2012) believed the students and teachers would have experience outside of school with these technologies, 60% reported that they did not. Of those people, 70% reported that it took them less than an hour to become familiar with it and be able to use it throughout the day.

The results showed that no teacher nor student preferred one piece of technology for schoolwork. The elementary school students and teachers indicated that the iPod Touch was useful for recording and listening to sounds related to learning, such as podcasts of information or recording lectures. They preferred the laptop for researching on the internet, writing papers, or creating multimedia, such as for a visual presentation. They struggled to find ways to use the iPad in the classroom except for ways already being used by the iPod and laptops. However, the high school students and teachers both stated that it was difficult to find educational uses for all of the devices and found it easier to work in the classroom without them.

Riley (2013) explains that she did not need professional development to integrate iPads into her classroom. As an owner of a MacBook Pro, she used her own working knowledge of Apple products to purchase an iPad and download familiar apps that she felt would enhance her music lessons. Riley was motivated by the iPad's ability to enhance student-centered pedagogy by connecting students to their classroom no matter where they were. She found that the iPads allow students to collaborate on building their curriculum together. Riley found that her students met their weekly objectives by interacting with the iPad and they created music in a visual way, which was not possible without the iPad.

More and Travers (2012) conducted a qualitative study on how some teachers explored the app store of mobile tablets to choose the best apps available to reinforce skills they are teaching in the classroom. However, some teachers find that some apps do no more than regular flashcards would do. Some teachers choose trial and error methods while choosing apps. Teachers would select apps that they feel would be appropriate, but then they need to observe their students using them before determining whether the apps are worthy of classroom time (More & Travers, 2012). More and Travers recommended examining apps to identify their accessibility and flexibility that allows access for all students, they are simple enough for all students to understand and take initiative using and had the appropriate size for writing and artwork.

Other major aspects of the apps include equitable use, which means the students can manipulate the content easily, that the information is communicated in a variety of ways, such as through text, sound, and words (More & Travers, 2012). In a quantitative study, Ok, Kim, Kang, and Bryant (2016) evaluated apps even more thoroughly by

exploring objective, strategy, examples, practice, error correction, error analysis, progress monitoring, motivation, navigation, visual/auditory stimuli, font, customized settings, and content error/bias. The researchers included an evaluation form that could be used to analyze the apps prior to integration.

Teachers identified non-technology specific issues when integrating new technologies. Teachers in a qualitative study by Maher (2013) used the iPads for both teaching the non-teaching activities. Teachers learned how to use the iPad and integrate it if they had a good understanding of pedagogical content knowledge and technological pedagogical knowledge (Maher, 2013). A qualitative study by Courduff, Szapkiw, and Wendt (2016), showed that gradual and intentional experimentation with technology integration resulted in teachers' ability to effectively use technology throughout lessons. Teachers discovered that technology integration provided opportunities for differentiated instruction, which helped meet the needs of each student who has a disability (Courduff, Szapkiw, & Wendt, 2016). Teachers also identified specific obstacles they responded to while trying to integrate, but no obstacle was named by more than four participants. The issues identified were time, student basic knowledge of technology, the available technology, the technology support, and the lack of professional development for teachers (Courduff et al., 2016).

Integrating Mobile Devices

There are several definitive studies related to the integration of mobile tablets in the classroom. Min Liu, Navarrete, Jina, Yujung, and Mihyun (2016) conducted a qualitative study to see how 342 teachers chose to use mobile tablets in their classrooms.

These teachers were given iPads by their school district and the study examined teachers' comfort levels and perceptions during the time they integrated and how these teachers used the iPads to support their instruction (Min Liu, et al., 2016). Teachers in this study used the iPads for group work, such as having the students write their answers on the iPad and pass it rather than using a piece of paper. Classroom management apps, such as ClassDojo, was used to record student behaviors and performances (Min Liu, et al., 2016).

The district required that all teachers take workshops conducted by instructional technology staff. They participated in this professional development both in person and on-line. All teachers were required to demonstrate full competency using the iPad before they were permitted to use it in their classrooms. Competency was defined by their ability to ace a proficiency plan, which involved simple tasks, such as turning it on/off, adding apps, utilizing email, and so forth. However, the teachers also had to attend three different one-hour trainings on what to do with it in the classroom, 20 free iPad apps that teachers should use, and 15 great iPad tips for teachers. Additionally, the district also provided more professional development throughout the year the iPads were integrated (Min Liu, et al., 2016).

The study showed that novice teachers were significantly more comfortable implementing than veteran teachers, but that veteran teachers' comfort level increased as the year went on (Min Liu, et al., 2016). Novice teachers also showed a higher level of excitement to implement than veteran teachers, but all teachers had a drop of excitement towards the middle of the school year (Min Liu, et al., 2016). Excitement was reported as increased by the end of the year. More novice teachers than veteran teachers agreed with

the statement that mobile technology is important in their classroom. More novice teachers than veteran also agreed that the iPad changed the way they teach (Min Liu, et al., 2016). Teachers also noted that there were logistical challenges finding sufficient time for each student to use the iPad because the iPads had to be shared. They also found there was not sufficient time to integrate iPads effectively.

In another qualitative study, Reese, Bicheler, and Robinson (2016) examined music teachers' experiences integrating mobile tablets to their curriculum. Most teachers reported feeling tension while they were trying to integrate mobile technologies into their classroom. Some of this tension caused them to change their current practices to accommodate meaningful mobile tablet integration (Reese, Bicheler, & Robinson, 2016). Other found it too difficult to adopt at all and ended up disregarding the mobile tablets (Reese et al., 2016). Teachers explained that tensions were caused by their inability to get an app to do what they were wanted it to do, and/or when apps would crash and require re-installation, and when differences in student needs required different use of the mobile tablets (Reese et al., 2016).

In a qualitative study by Kaur, Koval, and Chaney (2017) teachers' instructional designs were completely forfeited when one iPad was distributed to each child in the classroom. Teachers needed to use the mathematics apps available to teach lessons and if students had difficulty understand the work the teachers used the step-by-step instructions in the app (Kaur, Koval, & Chaney, 2017). Teachers noted that the iPads were appropriate for all different types of learners and the headphone option was great for students who were easily distracted and/or were auditory learners (Kaur et al., 2017). Students were not

required to use the same apps but worked on the same skills using a variety of different apps.

This was very different from a qualitative study by Anderson, Griffith, and Crawford (2017) where teachers reported that although the apps were good, they could not use them for a whole lesson. The teachers only used the apps a few days. One way was to represent information, such as showing a picture, another was for repetition, and the third was to assess students' progress (Anderson, Griffith, & Crawford, 2017). The teachers also found that writing lesson plans to integrate the iPads were more complex and time consuming than if they had written a lesson without them.

The study also showed that teachers engaged in two types of teaching strategies when integrating the iPads including planning and the in-the-moment decisions, which would occur while teachers observed student interactions with the apps. Some teachers reported that they were not always able to find apps that successfully supplemented the lesson and other teachers reported using as many as 30 apps during one lesson (Anderson et al., 2017).

In a qualitative study by Mourlam and Montgomery (2015) teachers reported that they allowed the apps on the iPads to dictate their instructional design. It was also noted that even after five months of integrating the iPads, many of the teachers were still using it as a glorified projector including to show videos, pictures, and simple documents. During a mid-year professional development session in which teachers were taught to reinvent ways to use the iPads some teachers thought of drawing an idea instead of writing, recording audio instead of writing, and doing research (Mourlam & Montgomery, 2015).

Additionally, the participants were asked to look at the iPadagogy Wheel, which is an extensive graphic that shows the five categories of Bloom's cognitive domain categories, action verbs that describe them, activities that come from those, and then the apps that can be used for those categories (iPadagogy Wheel, 2014). It was described that participants were stunned at the ideas presented (Mourlam & Montgomery, 2015). They found that the iPadagogy Wheel could be used by many teachers who struggle with identifying apps that would be effective in their classrooms. Not all apps are appropriate for all students and it takes a long time to search through the effectiveness of every app (Maich & Hall, 2016).

Teachers in a qualitative study by Flewitt, Messer, and Kucirkova (2015) reported being able to use the iPads across a variety of different subjects and settings but explained that it took time to successfully integrate. Lessons needed to be well-planned with apps carefully selected that helped to increase student motivation and concentration. Some teachers noted that their students' self-image improved because they saw how successful they were completing the lessons with use of the iPad.

The Ryerson Library was able to conduct a qualitative iPad project in which they distributed mobile tablets to students so that the students could personally integrate the iPads into their academic lives (Eichenlaub et al., 2011). The students had to blog weekly about their experiences so that the research librarians could track whether the use of the iPads enhanced the students' learning (Eichenlaub, et al., 2011). Four students were chosen by applying for the study by submitting essays explaining why they want to participate.

They were given the iPads before the winter break so that they could familiarize themselves at home with how the iPads worked (Eichenlaub, et al., 2011). Regardless, students stated that it took them at least one to two months to fully learn how to use the iPad (Eichenlaub et al., 2011). Students reported that they believed the iPad was better than a laptop because of its ability to be easily transported, its quick startup, and its extended battery life (Eichenlaub et al., 2011).

There are a few tasks that students can use a mobile tablet for that cannot be completed without the mobile tablet (Eichenlaub et al., 2011). For example, the students could read websites and iBooks while commuting to and from school whereas before they could not. One student, Bonita, used an app called iBrainstorm to organize all of her notes. She was able to scan in handouts, draw pictures, and type notes so that everything was saved in one neat place in her iPad. Another student, Kris, used apps Mendeley, iAnnotate, and Instapaper to take notes on PDF files, save websites without advertisements, and include personal notes (Eichenlaub et al., 2011).

The third student, Ashley, liked using the app my PANTONE to create and retrieve colors for printing assignments. The last student, Sarah, stated that she could learn more information at a quicker pace while studying from the iPad (Eichenlaub et al., 2011). All four of the students concluded that conducting long term research projects it would be better to use a computer because of the larger screen and the option to switch between multiple windows at the same time (Eichenlaub et al., 2011).

They found that as the iPads were distributed to students who were challenged to integrate the iPads into their own academic lives that teachers' instructional procedures

did not need to be altered for these students to benefit from the iPads (Eichenlaub et al., 2011). However, the iPads were almost exclusively used by these students as note-taking devices that improved the information visually and organized the work more effectively.

The researchers concluded that the iPad is not as "integral to academic life as a computer" but is still considered a powerful tool for students (Eichenlaub et al., 2011, p. 21). As one student stated, this helped her to retain the information better than she would have with a notebook (Eichenlaub et al., 2011). It could be concluded believe that if the iPad is used as a word-processed devise it is not being used to its potential. This may have been different had the teachers' lessons require iPad interaction. However, no one else in these students' classrooms had iPads. It is not determined whether instructional design would need to change to integrate iPads for more use than note-taking, research, and organization.

There are two different main strategies as they apply to iPad integration: having each individual student use their own iPads and having several students use one iPad at the same time (Chen, 2013). A school in the central valley in northern California, in a low economic area, distributed iPads to an entire grade of students with the goal of having them use it for every assignment and for their homework. The main goals of the school district were to increase student engagement and thus decrease distractibility and behavior problems, increase test scores, help expose students to new information, and eliminate paper-waste (Chen, 2013). The study found that students benefited from having every material they needed for all classwork and homework in one place, the iPad, but the disadvantage was that sometimes the iPads were forgot at home, were not charged, and

were used for cyber-bullying and non-educational internet surfing. There was no information included about student test score achievement (Chen, 2013).

An elementary school in central valley northern California tried the method of having multiple students use one iPad (Chen, 2012). Teachers reported issues on how to get the iPads to students equally and how to monitor that iPads are used for educational purposes only. The disadvantages of using the iPads identified were entirely technical including how to sync all the iPads, how to apply the restrictions, putting on protective covers (Chen, 2012). There was no information provided on whether students were more engaged, motivated, or if they were achieving at a higher level. Chen (2012) explained that the iPad is a popular choice for special education because of its features and functionality.

In earlier research, Chen (2011) identified multiple apps that would benefit children with special needs, Chen draws on the literature of other researchers who provided advice on how iPads can be integrated into the classroom. The qualitative study by Lowman and Dressler (2016) showed that students who used an iPod to learn vocabulary words could learn many more words than they did through traditional teaching methods. Students exposed to only the iPod learned two words whereas when they were exposed to traditional methods of reading alone, they learned none of the words (Lowman & Dressler, 2016).

Soykan and Ozdamli (2016) conducted a quantitative study, which showed that teachers' participating in mobile tablet learning had an increase in test scores between their pre-tests and post-tests. During the study the mobile tablets were integrated for 10 weeks.

Teachers created lessons that were carried out digitally and students participated in projects using the mobile tablets. The study showed an increase in the success of the students using the mobile tablets.

Herbert (2010) explained that if each student has his/her own iPad the students can work on a variety of different subjects at the same time. Kelly (2011), explained that there are iPad apps that allow students to easily collaborate with other students and document their progress. This study focused on children with special needs and how the iPad can document, both through work samples and video, the students' progress to be shared with parents. However, none of these three studies provided information on what educators will need to do to have the tools to successfully integrate the iPads.

McKenna, et al., (2015) conducted a qualitative study at a college with students from a course titled The Integration of Technology in Second Pedagogy program. The students kept recorded journals on their experiences throughout the integration process and it was noted that most of their frustrations were built around technical problems. For example, the bandwidth of the internet cannot accommodate all the iPads using the internet at the same time. Additionally, because the lessons were planned solely on the iPads, anytime the iPads were not able to be used, such as the internet being down or because another class was using some of the iPads, it meant instructors could not teach the lesson planned for the day.

There were many reports on students showing their cooperating teachers how to use the iPad to enhance lessons in their classrooms or how they discovered a tool to use on the iPad that helped them in another class. From this standpoint, it can be concluded that the

iPads did increase student involvement and achievement. The study also noted that although there are many resources that provide instruction for implementing the iPads, it takes a long time to figure out which one will be beneficial for each specific classroom.

Hesser and Schwartz (2013) explored the results of a qualitative study when iPads were integrated into a science laboratory for Chemistry Honors at the University of New Haven. The study took place during the fall of 2012, and 20 students were studied. Apps were chosen and loaded to the iPads prior to distribution. The apps were chosen based on which ones could be best used in the science lab to eliminate the need for paper (Hesser & Schwartz, 2013). There were fast and cheap ways to make the iPads safer to use in an environment with exposed liquids. For instance, the students could place the iPads into a zip-lock plastic bag (Hesser & Schwartz, 2013). The iPads can still be used while in the bags and the bags protected the iPads from liquid.

Hesser and Schwartz (2013) found that if teachers wanted to implement iPads into their science labs, they need to research the apps prior to the start of the course. This is because apps need to be researched, evaluated, and tested to determine which would be the best for the course. Additionally, the time required to teach students how to use the apps on the iPad if they are unfamiliar with them needs to be considered. The study showed that students, although motivated to use the iPads, still needed instruction on how to use the apps selected (Hesser & Schwartz, 2013). They found that students were frustrated with having to use the iPad because two apps could not be kept open and viewed at the same time, whereas with a regular notebook, pages could be lined up and viewed simultaneously (Hesser & Schwartz, 2013). Several students also reported that they had

difficulty writing on the tablet with the stylus due to the amount of time they needed to zoom in and out to complete tasks (Hesser & Schwartz, 2013).

Instructors reported issues retrieving the files for grading and then delivering the files back to the students. Retrieving the files from the Dropbox meant having to open them in the app they came from, then deleting the current files from the Dropbox, and then uploading the graded project back (Hesser & Schwartz, 2013). However, it was concluded that over 120 pieces of paper per student were saved throughout one semester by switching to the iPads (Hesser & Schwartz, 2013). Additionally, the iPads were less expensive than a laptop, there were more apps available, and it is easier to transport them throughout lessons because they are smaller in size (Hesser & Schwartz, 2013).

Hesser and Schwartz (2013) found that if teachers wanted to implement iPads they would need to spend a lot of time determining which apps would work for their course. Teachers would look for iPad apps that could fit into their current instructional design (Hesser & Schwartz, 2013). Apps needed to be researched, evaluated, and tested to determine which would be the best for the course.

Additionally, the study showed how students used the iPads to replace ways they commonly used paper during science experiments. For example, UPAD was an app chosen to replace paper notebooks that were normally used in experiments (Hesser & Schwartz, 2013). Therefore, the apps were used to supplement the lesson already in place to eliminate the need to use paper. It seemed that during the process of choosing the apps the teachers became experienced with the apps. However, a time for teachers and students to learn the technology was required for this program to be successful. This would need to

be considered when planning the curriculum because class time would be needed to be used to teach the students how to use the apps.

Special Needs Learners

There are several studies that researched using mobile devices with special needs learners. A quantitative study by Musti-Rao, et al., (2015) showed that teaching with technology improves active student response while increasing student motivation. The study found that technology helps to bring individualized instruction to students and to consistently deliver instruction. It also noted that teachers must carefully choose the programs students use because the programs need to be aligned with what the teacher is teaching as programs should reinforce and strengthen skills already being taught in the classroom.

A quantitative study by Vogelgesang, Bruhn, Coghill-Behrends, Kern, and Troughton (2016) showed that students with Attention Deficit Hyperactivity Disorder (ADHD) showed improvements in academic achievement when the students practiced math and reading skills on the SCORE IT app on the iPad. In Australia, the Victorian Department of Education and Early Childhood Development integrated iPads in a school for children with intellectual disability in 2010 (Ellis, 2016). They began by teaching children how to use certain apps and the use of the apps throughout the entire day. Teachers in this study found that the iPads enabled differentiation as attention as the iPad allowed them to participate in self-directed learning (Ellis, 2016).

In an inclusive classroom at the fourth-grade level, iPads were used during mathematics to bridge the gap between non-special education students and those with

special needs. In a quantitative study by Zhang, Trussell, Gallegos, and Asam (2015) they found that over the course several years, the students with special needs improved their mathematics skills and the achievement gap between the two groups diminished.

In a qualitative study by Chen (2012), 10 special needs students were given an iPad. The students had no experience with the iPads prior. The teacher sought out help from her college-age son to learn more about the iPad. It was found that students made great educational advancements throughout the year, especially through rote-memorization skills, such as counting (Chen, 2012). In this case study, it was explained that the iPads were used as incentives for the students to use once they finished their classwork (Chen, 2012). They were also used to reinforce lessons that were already taught (Chen, 2012).

Kaur, et al., (2017) implemented a five-week learning project during which ten different teachers participated in undergraduate education programs and implemented one-on-one mathematics tutoring services using iPads. They concentrated on improving the math skills of ten fourth grade students from a self-contained classroom (Kaur, Koval, & Chaney, 2017). Specifically, the teachers used lesson plans that correlated to the math topics that the classroom teacher provided. They taught the skills through traditional methods (non-mobile tablet lessons) then used the apps on the iPad to reinforce what was learned (Kaur et al., 2017).

The conclusions showed that both teachers and students benefit from using the apps to reinforce information learned. The apps provided problems and step-by-step instructions. They were also able to be used as an assessment to determine whether or not

the students retained how to complete the problems. Additionally, the apps were beneficial to a variety of learning needs to because visual, auditory, and tactile learners were able to maintain their attention (Kaur et al., 2017). The iPads also improved student motivation, participation, and independence (Kaur et al., 2017). The teachers benefited from the opportunities that the iPads provided to show students individual attention through hands-on activity (Kaur et al., 2017).

O'Malley, Jenkins, Wesley, Donehower, Rabuck, and Lewis (2013) conducted a four-week qualitative single-case study to investigate the effects of using the iPad to increase mathematical fluency and to identify any consequences or bonuses for iPad integration (O'Malley et al., 2013). The study took place in a special education school in Maryland, in an urban school district (O'Malley et al., 2013). The students used were classified with autism spectrum disorder and/or multiple disabilities (O'Malley et al., 2013). There were ten 7th and 8th grade students who ranged in ages of 12 to 15 years old; more specifically, three girls and seven boys (O'Malley et al., 2013).

The researchers documented the students' demographic information through questionnaires, their current level of technology experience through three surveys, and their math scores were collected from the Numbers and Operations Subtest of the Brigance Comprehensive Inventory of Basic Skills II (O'Malley et al., 2013). The results showed that the iPad increased all the students' fluency in mathematical computations. Teachers surveyed stated they felt it was worth the time and effort to integrate because of the increase in student achievement (O'Malley et al., 2013). The advantages to using the iPads included student acceptance and motivation, the ability to progress to a learning

objective that was not possible without the iPad, and teachers' teaching skills were enhanced (O'Malley et al., 2013).

Mobile tablets can be used to improve student behavior in classrooms. For example, a study by Bruhn, Vogelgesang, Schabilion, Waller, and Fernando (2015) showed that students could self-monitor their behavior through an iPad app called SCORE IT. This app provides a visual aid to students to help monitor their behavior and progress towards appropriate behavior goals (Bruhn et al., 2015). A study by Rivera, Mason, Jabeen, and Johnson (2015) also showed that mobile tablets could increase positive behavior. In their study teachers used prompts on mobile devices to increase praise from educators. The praised helped students with autism to reinforce good behavior (Rivera, et al., 2015). The study also showed that the programs were beneficial for teachers who are not appropriately trained to handle significant behavior problems (Rivera et al., 2015).

In a study by Kelley, Rivera, and Kellems (2016) Google Glass was distributed to students with Intellectual Disability. Google Glass is a relatively new technology designed by Google that is worn as glasses and sends messages and videos to mobile tablets. The study was designed just to see if students with Intellectual Disabilities could learn how to use a completely new technology that they had no prior experience (Kelley et al., 2016). The researchers found that the students could learn how to successfully use the Google Glass and enjoyed their time interacting with it (Kelley et al., 2016).

Cihak et al. (2016) conducted a qualitative study to learn more about the effects of augmented reality when teaching step by step tasks to students with Autism Spectrum Disorders. The researchers discovered that students could use mobile devices to see a

Boardmaker picture that triggered a video model to start playing (Cihak et al., 2016). The Boardmaker picture included step by step information on how to prepare the toothbrush, brush the teeth, and clean off the toothbrush. From there the students would watch a video model clip of a student brushing her teeth. The students with Autism Spectrum Disorder could learn how to brush their own teeth by watching the video and after nine weeks later they were still able to brush their teeth independently (Cihak et al., 2016).

Ozbek and Girli (2017) conducted a quantitative study to explore the effectiveness of mobile tablets in a classroom designated for improving reading fluency. The study focused on three students with learning disabilities who struggle with reading. The results of the integration showed that during the intervention phase all the students' fluency increased because they improved on the number of words, they were able to read per minute (Ozbek & Girli, 2017). Their words per minute decreased during later sessions. It was determined by the study that reading fluency had no significant benefits. However, incorrect reading was seen to also increase as the lessons went on and teachers and parents reported that students had positive attitudes towards reading.

Summary and Conclusions

In summary, constructivism, adult learning theory (andragogy), and experiential learning theory relate to this research study because they are used to explain teaching and learning as it relates to technology integration. These theories of constructivism, adult learning theory, and experiential learning theory were not used in most of these cases to support the integration of the technology. Both studies by Hesser and Schwartz (2013) and Eichenlaub, et al. (2011) involved integrating the iPads without changing the instructional

design. Both studies showed that the iPads enhanced learning, but the iPads were being used as glorified notebooks. The studies showed that the students improved learning due to having better organization skills, note-taking opportunities, and could learn better from the notes.

The study by O'Malley et al. (2013) showed that there was improvement in the focused skill area of mathematics due to the iPad integration. It is implied that instructional design had to change to accommodate the intensive one-on-one use for which the students would be using the iPads. It is also implied because of the amount of professional development that was needed before and during iPad integration. However, it does not clearly state that teachers' instructional designs were changed, nor does it state how the iPads were used in correlation to lessons. Through his research, Spaulding (2014) found that teachers' perceptions are influenced by their experiences and these perceptions provide valuable information on the beliefs that the teachers hold (p. 2868). The study by Cuban (2001) showed that computers were not easily integrated because teachers did not change their instructional designs. Teachers were not learning how to integrate computers and were simply just adding them to the classroom.

However, the study by Judson (2006) showed teachers who were truly motivated to integrate technology into their classrooms and tried to change their instructional designs and teaching objectives to encompass the opportunities the iPad allows to enhance lessons. It appeared that teachers were using the principles of constructivism to change their classroom, but when Judson examined the results thoroughly it was determined that constructivism was not being used. The research showed that there are quantitative studies

detailing student achievement and motivation when technology is integrated. There is also student-centered research to study their needs, concerns, and success integrating mobile tablets. There is not significant research about teachers' experiences when mobile tablets are integrated.

One theme throughout the research studied is that researchers were looking for how student achievement and motivation increased using mobile tablet integration. Researchers wanted to collect information on this phenomenon to show how much technology could enhance the classroom. Some of the studies also focused on students' difficulties and success in the classroom while using mobile tablets. There was also consistent feedback from students stating that they wanted to know more about the mobile tablets, so that they could have used them to their potential (Chen, 2013; Eichenlaub, Gabel, Jakubek, & McCarthy, 2011; Herbert, 2010; Kelly, 2011; McKenna, et al., Schulz, 2015).

The research that was reviewed shed insight on many phenomena surrounding mobile tablet integration and some on technology integration in general. A methodological strength in a study by Spaulding (2014) included quantitative surveys that produced the percentage of teachers who were concerned versus comfortable using iPads, which are a mobile tablet, in the classroom. This research is valuable because the numbers are a representation of the general population and it gives strength to the concept that teachers' experiences need to be studied. The methodological weakness is that it was not a qualitative study and thus information about teachers' experiences were not examined. The methodological strength of the study conducted by the Ryerson Library was that they

identified the experiences students had when iPads were fully integrated into their academic and personal lives (Eichenlaub et al., 2011). The weakness of this study is that it did not focus on teachers' experiences and teachers were only involved by allowing students to use the iPads in their classrooms, they were not required to integrate them into lessons.

The study by McKenna, et al., (2015) was also student-focused and had the same methodological strengths and weaknesses. The study by Hesser and Schwartz (2013), was also student-centered, but involved the professors using the iPads for specific tasks during lessons so that they had to be knowledgeable about the iPads as well. The methodological strength of this lesson was the fact that both students and teachers were equally involved with the planning, but the weakness was that teachers' experiences and their prior knowledge of iPad implementation was not studied.

The conclusion that can be drawn is that mobile tablets overall were not used to their potential as teachers struggle with conflicting pressures of innovation and standardization and the lack of professional development. There are also a few studies that were designed to understand the teachers' experiences while the mobile tablets were integrated..

There is a gap in research literature as it applies to special education teachers' experiences in non-traditional private school settings who are were found about special education teachers in private schools that are supporting special education learners. Due to the rising number of special education students, public schools are considering non-traditional private schools to help their students including paying private schools to teach

special education students. After an extensive literature review, the researcher was unable to identify any studies of these types of schools. This study may develop new understandings of technology integration in innovative private schools supporting special needs learners. All of these studies provided a solid foundation to create the research method for this study. In chapter 3 I will describe my methodology for this research.

Chapter 3: Research Method

Introduction

The purpose of this study was to examine the experiences of special education teachers while they integrate mobile tablets into the classroom. The research problem is a lack of information about special education teachers' experiences when mobile tablets are integrated into their classroom. The first research question is: What are the experiences of special education teachers integrating mobile tablets into the curriculum? Secondary questions include:

1. What are the perceptions of special education teachers integrating mobile devices into their classrooms?
2. How do special education teachers describe their experiences while integrating mobile devices into their classrooms?

The second research question is: How do special education teachers integrate mobile tablets in the special education classrooms? This study was a single case study using Yin's (2012) model for data structuring and analysis. As a result of this design, this research may provide new understanding of the topic of study.

Research Design and Rationale

This study will utilize the case study method because case studies allow for analyzing information provided by a small group of individuals who are in current, real-life situations (Yin, 2012).

This choice was made because a case study with interviews will allow me to ask questions that could not be answered through large group surveys. This will allow me to

gain an in-depth understanding of teachers' experiences for analysis. The researcher will interview teachers who are integrating iPads into their special education classrooms. The researcher will interview the teachers three times, 1) before they begin their instruction of a specific unit of study that integrates the iPad; 2) once during the unit, 3) and after a unit of study was completed. The researcher will interview 8-10 teachers for this multiple case study. The researcher will observe the lesson between the interviews.

This study will use a single case study with multiple participants with the design based on Yin's (1994) research model. This model was used to provide a logical process to ensure consistency throughout both the data collection and analysis procedures. The first phase in conducting a case study was planning the case study. In planning to conduct a case study, one must first identify the rationale for using the design. Yin indicated three criteria for identifying if the case study design is appropriate. The three criteria are: (a) if the researcher seeks to answer a how or why question, (b) if there are no requirements to control behavioral events, and (c) if the study focuses on a contemporary event (Yin, 2012). I have worked closely with my mentor and my committee to design and develop this proposed study. I will gain Walden University IRB approval before initiating data collection.

A case study approach was a logical choice for this research. According to Yin, when the central research question is explanatory, a case study is the most appropriate design (1994). Case studies are useful for expanding the understanding and describing a phenomenon and often used to examine people predominantly in education (Stake, 2005). A case study may provide an enhancement of understanding of the setting in which

educators are mobile devices as a teaching tool. Stake (2005) highlighted that the case studies depends on the inquiry purpose. I will use a case study in order to offer multiple perspectives on this topic. This approach allows for the collection of multiple sources of data to recognize patterns and themes. Collecting data from multiple classrooms will provide better authenticity to the findings (Yin, 2012)

The purpose of this study was to examine the experiences of special education teachers while they integrate mobile tablets into the classroom. A case study approach will be used to conduct an in-depth holistic investigation. A qualitative method is the most suitable for the study because in-depth interviews with open-ended questions and the analysis of classroom documents are needed to develop a complete understanding of the phenomenon of integration of new technologies within U.S. elementary public schools (Bogdan & Biklen, 2003).

In contrast, a quantitative method that requires standardized methods with the closed-ended questions (Patton, 2002) might have limited participants in their responses. In addition, a quantitative process might leave important outcomes missed in case the research data will not fit into a pre-established category (Patton, 2002). For these reasons, I chose not to use a quantitative methodology.

Different qualitative methods could have been suitable for the current research -- for example, a phenomenological or narrative approach. However, I chose a case study design instead of a phenomenological one because phenomenology intends to present an understanding of the structure, meaning, and essence of the lived individual experience through reflection (Patton, 2002). In concentrating on a vibrant participant experience

description, a phenomenological approach might miss important information about outcomes and consequences of this experience (Smith, 2015). A narrative approach was not chosen as well because the focus of the current research was not to retell teacher participants' stories and interpret them from my perspective (Yin, 2012).

According to Smith (2015), case study research is appropriate when a researcher seeks to explore, describe, interpret, and explain experiences. Quantitative studies are statistical because they used a numerical analysis of data with the purpose of learning more information about a phenomenon. This information is collected through polls, surveys, and questionnaires. This study cannot be quantitative because the purpose is to gather information on the experience's teachers have before, during, and after the integration of mobile tablets. Statistical information does not pertain to the purpose of this study.

This case study methodology coincides with this study's objective, which is to describe personal, behavioral, and environmental factors that influenced the experiences of these teachers integrating the mobile tablets. Using two separate interview meetings, a review of the lesson plan used in class, and an observation of the classroom, the researcher will be able to explore, describe, interpret, and explain the experiences of the teacher as mobile tablets are integrated. This study was a qualitative case study instead of a quantitative study because it was designed to develop an understanding of teachers' experiences while mobile tablets are integrated. The researcher studied case studies on similar topics and chose to use the case study method to answer the research questions by

gathering multiple sources of information to understand both the teachers' experiences and the process of integration of mobile devices in their classrooms.

Role of the Researcher

The role of a qualitative researcher is to provide a safe environment for individuals to share their experiences. All interviews will take place via the phone or Skype. The researcher also will increase trust by describing the methods of de-identifying the data set in her consent form. As recommended by Yin (2012), the researcher will implement a protocol to impose the necessary discipline on the investigator to increase the reliability of the study. The protocol includes the following sections (Tellis, 1997, p. 5):

1. An overview of the case study project - this includes project objectives, case study issues, and presentations about the topic under study
2. Field procedures - reminders about procedures, credentials for access to data sources, location of those sources
3. Case study questions - the questions that the investigator will keep in mind during data collection
4. A guide for the case study report - the outline and format for the report.
5. The reporting process during the interview will be the contact point between the participant and researcher, which is an important aspect of a case study.

The interviews will be audio recorded and transcribed by the researcher.

The researcher is a special education teacher and will interview teachers from the school in which she is employed. The researcher will not interview anyone whom which she has worked. The researcher has no authority over any of the other teachers. The

researcher will reduce bias by creating a reflective journal, memoing in it, and by member-checking.

Methodology

This study is a case study using Yin's model for data structuring and analysis (1994). I will recruit 8-10 special education teachers from all over the United States via a Facebook recruitment post and email. In this proposed study, the context of the study was a unique educational setting, the teachers are integrating mobile tablets, specifically the iPad, and the learners are special needs learners. For this study, the researcher collected comprehensive information on the individuals' experiences and analyzed how their experiences influenced their abilities to use the mobile tablets to their potential in the classroom through intensity sampling. This small sample will ensure that the researcher can analyze the multiple interviews for depth of understanding and analysis.

Participant Selection Logic

The study will be conducted via the Internet and phone interviews to interview special education teachers from all over the United States. The students range in age from pre-school through 21. There are currently 18 classrooms in the building. All teachers can use school-owned iPads throughout the day as they feel such devices are appropriate. The population for this study was special education teachers using mobile tablets in their elementary classrooms. The participants will be chosen based on these inclusion criteria:

- 1) Teachers with two or more years' experience teaching special education to include teachers who have multiple years of experience teaching special education learners,

- are certified to teach special education to define a common level of training,
- 2) And are currently using mobile tablets in their classrooms.

The researcher will use purposeful sampling to select information-rich cases to ensure that enough data is collected from the phenomenon that is being studied (Patton, 2002, p. 230). The sample will include eight special education teachers from special education schools around the country. The participants will be recruited by sending an email describing the study and the purpose of the interviews to teachers who have integrated mobile tablets in their classrooms at the identified school. The recruitment email will include my email address so they can respond if they are interested.

In these classrooms, teachers are currently integrating mobile tablets, such as the iPad. Intensity sampling is the best method for data collection because it allows the researcher to choose “cases that manifest the phenomenon of interest intensely” (Patton, 2002, p. 234). Small sample sizes, selected purposefully, are the essence of most qualitative research studies (Patton, 2002, p. 230). The teachers who meet these criteria will have the experiences that are the focus on this study. The goal is to develop a broad range of opinions, ideas, and reflections on the topic of the study (Percy, Kostere, & Kostere, 2015). Data saturation will be defined as no new code emerging in my thematic inductive data analysis.

Instrumentation

To collect data for this case study, I conducted two on-line interviews with eight participants. I collected lesson plans for the lesson they will taught using mobile devices. The focus of the interview questions was based on the conceptual framework. Questions

related to the teachers' beliefs about integrating tablets are the focus of the initial questions. Questions about the interactions in their classroom are the focus of the second set of questions including questions on student motive and engagement.

Finally, the third set of questions are focused on the support of administration including defining support for technology integration through professional development. The questions in the Pre-Interview are focused on anticipated responses to the lesson and the Post Lesson Interview is focused on their responses after the lesson was implemented. Interview are included in Appendix A.

Interview questions 1-3 address the teachers' concepts prior to implementing the Lesson in reference to Roger's Diffusion of Innovation. Questions 4-6 relate to the nature of their classroom during the integration of the Lesson based on the concepts of constructivism, and experiential learning related to the integration of the mobile tablets. The final questions are related to the school's support for the integration of new technologies and defining how the teacher acquired the skills and knowledge to integrate the mobile table based on the concept of andragogy. The Follow-up Lesson Interview follows these concepts but is focused on what the teacher did or did not accomplish during the Lesson.

Triangulation

Three sets of data were collected to achieve triangulation in order to increase validity. First, participants emailed a lesson plan detailing the use of the mobile tablets, learning objectives, state standards, description and activities, and materials. This was important so that I could see what the teachers' purposes were for using the mobile tablets,

if the tablets were being used in a way that the lesson could not be conducted without them, and how the activities tied into objectives and standards. When I received the lesson plans, I highlighted any parts I had questions about so I could clarify during the first interview. I also made notes on the side of the lesson plan for activities that would not require the use of the mobile tablet.

Second, participants chose a day and a time that they were available to participate in a pre-lesson phone interview. These interviews included a list of questions that helped to focus on the purposes of the lesson and clarify any information from the lesson plan. This interview helped to collect information about the teachers' beliefs on mobile tablets.

Third, the participants chose a day and time for another phone interview that took place after their lesson. I collected information as a comparison to what happened versus what they wrote down in their lesson plan and what they believed would happen, which was stated in their pre-interviews. Teachers reflected during this post-interview and discussed aspects they would do again or aspects they would do differently.

I used all three forms of data to write a detailed description of teachers' experiences. The information was critical for determining what happened in the classroom without physically being there to witness it. When all of this information was transcribed and then uploaded to Dedoose I looked for themes related to the lesson plans and interviews.

Interview Protocol

I conducted two interviews, one before a lesson taught by the teacher using mobile devices and one after the lesson was taught. The teacher was asked to submit the lesson

plan for the lesson. I scheduled the interviews over the phone, and they lasted approximately 20-50 minutes each.

The teachers signed the Informed Consent form via email prior to the beginning of the interview and prior to submitting the lesson plan to me. I let all participants know that if they had any questions about what I am doing, they were welcome to ask. I encouraged all participants to elaborate on all questions and/or to stop the interview at any point if they did not want to continue.

The interviews were recorded on two devices, the lap top audio recording software and the cell phone recording program. As the interviews were being conducted the speaker's statements were transcribed into Microsoft Word. The interview recording was played back later to fill in any gaps that occurred during transcription. I discussed the process of member-checking with the participant. I emailed a copy of the transcribed interviews to the participant to confirm the answers were recorded correctly. Each participant responded that the interviews were accurate. This helped eliminate misunderstandings and therefore increased credibility of the study. The entire process of interviewing and member-checking took approximately one week per participant. The interviews were uploaded to Dedoose, which is where I analyzed my data.

The strength of using the semi-structured over the phone interview approach was so I would have the opportunity to observe the participants' verbal reactions to questions and to ask them to elaborate (Patton, 2002, p. 341). This protocol is beneficial because each participant was asked the same questions so that I could use a systematic and comprehensive approach to my analysis.

Lesson Plans

The teachers chose a lesson that they taught using mobile devices. I interviewed them before and after the lesson was taught. I requested the lesson plan to be emailed. I analyzed the lesson plan for patterns and themes. I compared what was written to the experiences the teachers described during the interviews. The lesson plans were a vital piece of data collection because it allowed for triangulation. The lesson plans brought forth the learning objectives, state objectives, the methodology, and activities that tied into mobile tablet use.

There are several findings that are expected based on the literature review for this study. The researcher, based on research identifying the need for professional development for teachers integrating technology, anticipates that the teachers will describe a need for further professional development to integrate iPads effectively. Additionally, based on Rogers theory of the diffusion of innovation, the teachers will experience multiple changes in their classrooms because of integrating technology including changes in their instructional practice, student behavior, amount and quality of student learning, and changes in motive and engagement of students.

Research has identified innovation clusters when technology is integrated that requires teachers to respond to multiple changes in the classroom as a result of integrating technologies (Russell, 20015). The teachers described feelings of dissonance during their teaching of the unit resulting from changes in their classrooms as a result of integrating iPads. Their responses, however, varied dependent upon their readiness to innovate according to Roger's Theory of the Diffusion of Innovation. I used reflexive journaling

and memoing throughout my study to identify covert bias throughout the process of data collection, data analysis, and presentation of results.

Procedures for Recruitment, Participation, and Data Collection

Upon IRB approval, the researcher will take the following steps:

Recruitment

1. I recruited 8 teachers from the open Facebook page for special education teachers.
2. The sample included 8 special education teachers who had integrated mobile tablets.
3. The inclusion criteria for this study included: 1) special education teachers who are certified to teach special education, 2) have at least 2 years experiences and 3) are integrating mobile devices into their classrooms.
4. Of the teachers who responded, I emailed the teachers who met the inclusion criteria. I chose the teachers who have the most range of experience and differed in grades and diversity to provide a further depth to the study. Only women contacted about the study so there was no way to include both genders.
5. I emailed all of the teachers who qualified an Informed Consent Form (see Appendix B). The email included information about the lesson that they needed to provide and a request for them to submit a day/time they would like for the first interview.
6. It was explained that each interview would take about 1 hour, but interviews actually ended up ranging between 20-50 minutes.

7. At the end of the first interview I scheduled the Post Lesson Interview, which is the second interview. It needed to occur after the teacher had taught the lesson integrating mobile devices. I memoed in Microsoft Word before and after the interview.
8. The interviews were transcribed into a Microsoft Word document.
9. The information was emailed to each individual participant for verification as part of the member-checking process. This helped eliminate misunderstandings and therefore increased credibility of the study.
10. I used hand coding in Dedoose to structure the data set.
11. I analyzed the data establishing major patterns for each participant.
12. I completed analysis of each participant's interview for cross-case themes.
13. I constructed my research finding.

Data Analysis Plan

This study followed Yin's model of data structuring and analysis. According to Yin (2012), "data analysis consists of examining, categorizing, tabulating, testing or otherwise recombining evidence, to draw empirically based conclusions" (p. 126). Analyzing case study data can be especially difficult as the techniques, to date, are not well defined. Yin identified five analytical techniques which are as follows: (a) pattern matching, (b) explanation building (c) time-series analysis (d) logic models and (e) cross-case technique. Of the five techniques, the cross-case technique was the only that applied specifically to the analysis of single cases (Yin, 2012). The technique allowed the researcher to treat each case as a separate study. The cross-case data analysis that will be occur is as follows:

The first phase consists of eight steps, which are summarized below:

1. Familiarization: Once the data was collected via audio recorder and through the reflexive journaling, I read and listened to the recordings several times to become familiar with the collected data. Once the information was transcribed, I checked the transcribed information against the original audio for accuracy and as another means of familiarization. After conducting the interview, I transcribed the interview into Microsoft Word.
2. Creation of word tables: Phrases that are meaningful units were highlighted in the transcript and then copied into Dedoose. There they were labeled with coding words that were relevant to the research question. I used mind-maps to connect words to labels. Information seen as irrelevant were placed on a separate list and later discarded.
3. Examination of word tables: I reviewed information to identify patterns that existed within each participant's interviews. A separate classification scheme was created for each individual case.
4. Write individual case reports: Based on the information from the word tables and classification system, a detailed individual report was constructed for each case. After I conducted the interviews, I listened to the recordings and transcribed the words into Microsoft Word. As I defined meaningful units for coding, I copied these coding structures into Dedoose for analysis. The researcher designed two interviews to be used during two of the three phases of the unit that integrated mobile tablets.

5. Create additional word tables: Once each individual case report was constructed, I created additional mind-maps using data from all case studies to create an overall scheme of the information.
6. Examination of additional word tables for cross-case patterns: I reviewed each word table and organized them in a classification system based on the frequency of related data to the label or base word. I reviewed data to identify the major differences among the data.
7. Draw cross-case conclusions: Finally, I made assertions about the experiences of these special educational teachers based on the major patterns as well as the oppositions within the collected data.
8. Write the report: In this phase, I took all the results and findings of the study to closure (Yin, 1994). I used the linear-analytic compositional structure to compose a report.

Issues of Trustworthiness

Shenton (2004) outlined several provisions (i.e., triangulation, tactics to help ensure honesty in informants, iterative questioning, and frequent debriefing sessions), as strategies for ensuring trustworthiness in qualitative research projects that are said to enhance the researcher's potential for achieving credibility within his or her research. In this study, I followed recommendations of Shenton (2004) by including iterative questioning. If any concerns were raised or there was a need for clarification, I used the questioning method to increase the validity of participant's answers. Shenton (2004) also expressed the importance of the qualifications and experience of the researcher, to the

concept of credibility. This aligns with information provided by a Patton (2002). Prior to beginning the process, I completed several courses on research methods as well as several trainings on interviewing. This led to the second concept referred to as dependability.

Dependability is the ability of the study to be repeated. According to Shenton (2004), to achieve this concept sections should be devoted to three aspects 1) research design and its implementation, 2) operational detail of data gathering, and 3) reflective appraisal of the project. The research design and its implementation, which is a description of what was planned, were outlined in a step-by-step process in the research plan as a guideline to follow in case anyone was interested in repeating the study. To address the concept of operational detail of data gathering, which refers what was done in field, I used field notes, and the transcripts of the interviews to organize data. For the reflective appraisal of the project, I maintained open lines of communication with my mentor and other committee members. The next concept is transferability.

Transferability and confirmability are the abilities of the research findings to be generalized to other settings. Shenton (2004) identified several issues that should be taken into consideration prior to any attempt for transference. The issues include the types of data methods employed, period when data was collected, restrictions to the types of participants that contributed data, variability of organizations that participated, and the number of participants involved. I established a set of inclusive criteria to enable others to understand eligibility criteria for participation. I also addressed this issue by acknowledging the limitations of the study based on the aforementioned factors.

Member Checking

I used member checking to ensure trustworthiness to verify I collected the correct information from all participants. Harper and Cole (2012) defined member checking as a quality control process, often used in qualitative research, to enhance the researcher's ability to collect and analyze information as well as reduce researcher bias. During the process I summarized information from the participant, to determine accuracy of the data (Harper & Cole, 2012). Harper and Cole (2012) indicated that member checking provides an opportunity for participants to approve aspects concerning the interpretation of the collected data. The process of member checking is meant to reduce the bias of the researcher and increase validity.

The researcher used Doyle's nine-step member checking technique (Birt, Scott, Cavers, Campbell, & Walter, 2016).

1. Preparing for member checking: Doyle indicated the member checking can take several forms, as it can be continuous or a single event. In either instance, researchers should prepare prior to conducting a member's check, in order, to execute the member check with precision. I transcribed both interviews with my notes for each participant (Birt, et al., 2016).
2. Confirmation of the interview content: I emailed each participant her transcribed interview. I asked for the participants to read them over to verify that I have their answers correct (Birt, et al., 2016).
3. Modifications to the interview to support participant requirements and preferences: I made modifications to my interview transcription based on the feedback from the participants to ensure the credibility of my response.

4. Changes to transcripts as requested by participants: If the participants had requested any changes (i.e., removing information, corrections to unclear information on the tape during the transcription process) to their interview transcripts, I would have made the change.

5. Discussion of the overall pattern from the interview: Each participant will be presented with a list of relevant patterns that were identified from his or her interviews as reflected in my notes (Birt, et al., 2016).

6. Discussion of selected words and narratives from the interview: Participants also can select one or two narratives from his or her interview and briefly summarize them.

7. Discussion of the preliminary analysis of concepts using the concepts of constructivist learning, andragogy, experiential learning and diffusion of innovation. Participants will be given a simplified explanation of each theory and/or concept presented and reasoning for the relevance of the concepts to their interview.

8. Closure of the member check: At the end of the discussion of identified patterns and interpretations, the researcher will check with participants to ensure that participants were comfortable with my transcription and notes.

Confirmability

Confirmability is the qualitative counterpart to objectivity that describes appropriate strategies to establish confirmability, such as reflexivity (Shenton, 2004). To

remove bias from the findings, I used member checking to ensure that the participants find my transcripts of their interview accurate.

Ethical Procedures

1. Research began after IRB approval was given.
2. The participants signed an Informed Consent Form that described their participation activities, the voluntary nature of participation, and information on the protection of their confidentiality.
3. I created a master list with all pseudonyms linked to the participant's name, P1, P2, P3. This was written down and locked in a safe located at my house.
4. I transcribed the audio files from the interviews using Microsoft Word.
5. The Word documents were kept in my login protected home computer. A copy is kept on a password protected Microsoft OneDrive folder.
6. I did my analysis on my login protected home computer using Dedoose.
7. After all the data was analyzed, I transferred the documents onto a flash drive. This drive is locked in a file drawer in my home office.
8. After 5 years, I will shred all paper documents and destroy the flash drive with a hammer.

As recommended by Yin (1994) the researcher will implement a protocol to impose the necessary discipline on the investigator to increase the reliability of the study.

The protocol includes:

1. An overview of the case study project - this includes project objectives, case study issues, and presentations about the topic under study

2. Field procedures - reminders about procedures, credentials for access to data sources, location of those sources
3. Case study questions - the questions that the investigator will keep in mind during data collection
4. A guide for the case study report - the outline and format for the report.
5. The reporting process during the interview was the contact point between the participant and researcher, which is an important aspect of a case study. As previously mentioned, the interviews will be audio recorded and transcribed by the researcher (Tellis, 1997, p. 5).

Summary

This study utilized the case study methodology because case studies allow for analyzing information provided by a small group of individuals who are in current, real-life situations (Yin, 2012). I used triangulation to assure validity for this research. I analyzed the responses of the individuals during two interviews, one before the individuals taught a lesson using mobile devices and a second after the lesson was completed. The third component was when teachers submitted a lesson plan for the lesson where they integrated mobile tablets. I received this lesson plan prior to the first interview and therefore had the opportunity to familiarize myself with the teachers' objectives, tasks, and materials. Using the conceptual framework of constructivist theory of learning, andragogy, experiential learning, and Roger's theory of the diffusion of innovation to in order to respond to the research questions, this study will develop new understandings of the experiences and perceptions of special education teachers in an innovative school. In

Chapter 4, I will review the study, identify triangulation as the data collection process, and present my findings.

Chapter 4: Results

Introduction

The purpose of this qualitative case study was to examine the experiences of special education teachers while they integrate mobile tablets into the classroom. This study was a qualitative single case study of special education teachers in the United States who have integrated and are integrating mobile tablets into their special education classrooms. The first research question was What are the experiences of special education teachers integrating mobile tablets into the curriculum? Secondary questions included What are the perceptions of special education teachers integrating mobile devices into their classrooms? and How do special education teachers describe their experiences while integrating mobile devices into their classrooms? The second research question was How do special education teachers integrate mobile tablets in the special education classrooms? This chapter includes a summary of the interviews with the special education teachers and analysis of their experiences as well as the similarities and differences between their experiences.

Setting

The participants were recruited through open Facebook groups for special education teachers. The groups titled “Special Education Teachers” and “Special Education Teachers Unite!” were used to recruit the participants. These two groups were found by Facebook searching “special education teachers.” They were the first two open groups to come up on the search. I received IRB permission to post my recruitment flyer to these groups.

A recruitment brochure was posted to interview any special education teachers who have been teaching for at least two years and have experience integrating mobile tablets was posted in both groups. At the time, “Special Education Teachers” contained 28,838 members and “Special Education Teachers Unite!” contained 4,764 members. After posting, 31 people responded. Specific criteria for the study was sent to them, regarding time commitment and interviews. After reviewing the criteria, only eight teachers agreed to participate. Those eight teachers are the eight who were chosen for the study.

There were some difficulties recruiting participants. Advertisements for the studies were posted on the Facebook groups, but it took 65 days to get enough participants. As a result, the advertisements were posted a total of four times on each board in order to recruit more participants. After the fourth post, a total of 31 people responded, but once they read the criteria for the study and understood the time commitment required, only 8 teachers were willing to participate.

Demographics

The participants were recruited from all over the United States. P1 is a female from New Jersey who has been teaching special education and science for 16 years. P2 is a female from Nevada who has been teaching special education for eight years and taught regular education for one year. P3 is a female from Missouri who has taught three years in regular education and three years in special education. P4 is a female from North Carolina and has been teaching special education for seven years. P5 is a female from Texas who has been teaching special education for 15 years and regular education for 15 years. P6 is

a female from Arkansas who has been teaching special education for six years. P7 is a female from California who has been teaching special education for four years and regular education for 10 years. P8 is a female from Minnesota who has been teaching special education for 16 years. All participants were female.

Data Collection

Eight special education teachers participated in this study. Each special education teacher participated in two interviews, one prior to the lesson they integrated for mobile tablets and one after the lesson. They also supplied a copy of their lesson plan describing the lesson they planned to conduct. Together, these three units of data made of the triangulation of the study to improve validity.

Pre-Lesson Interviews

All data collection was conducted over the Internet and I used my cell phone to record the interviews. The length of the interview ranged from 10 minutes and 12 seconds, being the shortest, and 29 minutes and 30 seconds, being the longest. The days and times were chosen by the participants, at their convenience.

The interviews were conducted over speaker phone while Voice Recorder, a free app on the Microsoft Office package, was used to record the interview. Simultaneously, the dialogue was typed as the speaker was answering the questions. In order to audio record the interviews, the participants were placed on speaker phone and the Voice Recorder program, which comes standard on Microsoft computers, was used to record everything the interview. I transcribed the audiotapes.

Afterwards, the interview was played back to ensure all information was recorded

correctly. I listened to the recordings to update my transcription to ensure that it was correct. The documents were saved in Microsoft Word and then member-checking was done. I emailed the transcribed interviews to the participants to verify that their answers were as they intended. Afterwards, the transcripts were uploaded into Dedoose, an online qualitative analysis software program.

The lesson plans were contributed by each of the participants before they taught their chosen lesson. They were from a variety of subjects including science, language arts, alphabet/reading readiness skills, tactile skills to improve functional fingers, leisure activity, mathematics for addition and subtraction, reading, and Phonics.

The post lesson interview helped me to understand how the teachers described their experiences after the lesson was conducted. The teachers explained what they felt went well, what they felt went poorly, and what they would do differently in the future. The post interview lesson was more specifically about the actual lesson, whereas the pre-interview was also about the teachers' experiences all the time when mobile tablets are integrated and their professional development.

Because the research participants were recruited from the Internet, their interviews had to be conducted over the phone. This is an unusual circumstance because initially I had planned for the interviews to be completed in person. However, lack of local participants meant I had to increase the search to include special education teachers in an open Facebook Group for special education teachers. Fortunately, including teachers from other parts of the United States meant developing a more diverse picture of teachers' experiences.

Data Analysis

I used Yin's (2012) model of data analysis for multiple case studies. I began with the process of familiarization. After transcription, described above, I listened to each audiotape and updated the transcribed interview. I sent these transcripts to each participant for review for accuracy. After multiple reviews, I uploaded the interviews into Dedoose.

Next, in Dedoose, I created identifying phrases that are meaningful units that are paragraphs with a meaningful association to the research question. I did initial coding for each participant's interviews and lesson plans. Next, I did an examination of word tables. I reviewed the initial codes from all data for each participant to identify patterns that existed within each participant's interviews. I created a separate classification scheme for each individual case. I then wrote each participant's individual case report based on the information from the word tables and the classification system prior to conducting the next case study. These reports are below.

Once each individual case report was constructed, I took notes and then looked for themes from across the case studies to create an overall schematic view of the information. I reviewed these tables for cross-case patterns. I reviewed each word table and organized them in a classification system based on frequency of related data to the label or base word. I also reviewed data to identify the major differences among the data.

Summary of Participants' Interviews

Below is a summary of the participants' interviews.

Participant 1

Participant 1 has been teaching special education and science in New Jersey for 16 years, believes that the mobile tablets are good for enhancing a lesson, but feels that students become too dependent on them and then the students are unable to function without them. She gave the example of how students use them to calculate numbers and do not know how to calculate numbers without them. As a science teacher, she feels the mobile tablets provide a cost-efficient way to participate in laboratory experiments that are unaffordable to do with real-life materials/tools. She also feels they can be used for actual practical reason, such as visiting the sun via the tablet because that could not be done in person.

One important benefit that she pointed out was, "Introverted students who do not raise their hand or want to participate can participate while using the mobile tablet." This teacher stated that she has never had to change her teaching style in order to integrate the mobile tablets and has received professional development provided by the district, which taught her how to teach a new science unit with the tablets. She found this training useful because she learned how to complete the interactive aspects of the units. She found that the lesson would have been great, but the Internet and Network dropped during the lesson, so no one was able to complete it.

P1 is an advocate for integrating mobile tablets and uses them to conduct science experiments that students would not be able to participate in without the tablets. She felt

the students benefit through higher achievement, engagement, independence, and motivation. However, she was wary that students would get addicted to using it for cognitive abilities that they should be doing on their own, such as calculations. Her class used it to conduct a science experiment to crossbreed two organisms and create a Punnett square, which would not have been possible without the technology. The professional development she participated in was provided by the district, which specifically taught how to integrate a science unit using the mobile tablets. The one issue she faced was when the Internet dropped.

Participant 2

One female teacher from Nevada has been teaching for a total of 9 years and has been teaching just special education for 8 years. She feels the mobile tablets are great, but also explained that they can be bad if students need them as a motivator. She explains that if time runs out during the day or the child does not earn the mobile tablet, it could be the end of the world. This is an interesting perspective because other teachers talked about how they are great for improving student motivation and engagement but did not mention what would happen in the chance that the child does not earn it. Aside from students becoming upset if they do not earn the incentive of the mobile tablet, this teacher stated that not having enough tablets to share is difficult in the lower grades, such as Kindergarten to second grade.

Other negative experiences included when students would act out by using an iPad as a weapon or by breaking it. This teacher described many innovative ways to use the mobile tablets. For example, using a QR code program that allows students to take a

picture of a book from the classroom, which links to a YouTube video of someone reading the actual book. Students can then listen to the book and follow along with their own copy of the book.

This teacher also said, "I've also noticed their typing has gotten better," but mentions that the type of tablet dictates the level of success and the types of activities that can be done. A full-size iPad is much bigger than a Samsung tablet, which she stated are too small to type on. She recommended, "Only get an iPad. Do not get a Samsung or a Kindle Fire. They are not as powerful and honestly the programs are best supported on an iPad."

This teacher also said her students use Google Classroom, which is a website they can log on to so they can see their assignments and complete their assignments and submit them on-line. She also explained that in Nevada her students all need to take the standardized tests. They are not permitted to use a multiplication chart or a calculator.

However, they can use voice to text on the mobile tablet. She said the greatest component of the mobile tablets is a program called Proloquo2, which is for non-verbal students. It is a program that allows students to push a picture or type words to express thoughts. The program speaks this information aloud. In terms of professional development, this teacher has spent a lot of her own time and money attending events and workshops

She described going to Teach Your Heart Out, which is a National Conference of Instagram Teachers. She also went to an NJEA convention that taught her a lot about using iPads. There she learned how to use a feature called Clickers, which is found on

Clickers.com. She explained, "the kids have QR codes and depending on how they answer you just take your iPad or phone and you scan the room." This pools all of their results immediately on the board. It is a quick way to get fast data. This also speeds up her process of assessing students and their goals. She can quickly find out who knows their alphabet by asking them to type it on their tablet and then using Clickers to scan the room and get the answers quickly.

She shared that every professional development her school district provided was unhelpful for her classroom. She gave an example about how her district required that special education teachers attend a workshop on how to help students get better at a program called iReady. She said the App is not appropriate for lower functioning students and training them to be better at the program still does not help them get better at the program.

P2 is an advocate for iPads specifically and uses the iPads for the majority of the day, including for communication. She feels they can be used to enhance every lesson in ways that cannot be enhanced without the use of them. In the lesson, P2 has her students use an iPad compatible with Flash to complete a lesson that they participate individually while following along as a group on the Smartboard. However, during the lesson they occasionally have a task come up that requires use of the computer and there is no foreshadowing of the task so at times the teacher is caught off guard and it takes a while for each student to take a turn on the computer so that they can continue on their unit on the iPad. The professional development she sought out on her own time and resources

were helpful to her integrating the mobile tablets for the whole day, but the district never provided her with any she could use in the classroom.

Participant 3

Participant 3 has been a teacher for six years in Missouri. She has taught for three years in general education and three years in special education. She explained that her instructional design has never had to change because she has never used the mobile tablets to teach a new skill. She has only used them to reinforce a skill. "Reinforcing and independent practice is important on the tablets," she explained. Allowing these students independence is critical for their generalization of a skill and self-confidence.

She is in a classroom at times with 5-year-old children with autism, all of which require constant attention. However, the mobile tablets are one of the first things they can do on their own. She expressed that the most negative aspect she has encountered is that there is no way to lock an App. So, if the student is supposed to be tracing letters, the student will just hit the home button and get on another activity.

The teacher stated that the school requires teachers to go to the district and participate in a one to two-day professional development before being allotted the iPads for their classroom. She said that during this training, they learned about programs that the school did not even purchase to use.

As a result, those were not included on the iPads and none of the information they were given applied to what was available on the iPads. She also stated that her students have shattered a few screens by throwing them even though they have cases on them. She

also explained that some of her special needs students struggle with traditional methods, but the mobile tablet helps them achieve at a level they could not achieve without it.

For example, one of her students assessed at a much higher level when she asked him to write out the alphabet on the tablet, whereas with pencil on paper, he was unable to write any. During the lesson she did on the mobile tablets, she stated that the students who stayed on the correct App and participated needed minimal assistance and reinforced the skills they learned earlier. The ones who constantly switched off and went onto apps they preferred needed a lot of one-on-one attention to stay on track. She recommends not allowing a free-for-all with the students and the mobile tablets. Instead, "Set the standards, norms, and rules for the tablets to determine when/how they should be used."

P3 is an advocate for mobile tablets because she has discovered that her special needs students can show knowledge and skills they have with the mobile tablets and are unable to show these skills without them. The negative experience she had was not being able to lock the apps, but that was because the professional development the district provided her did not relate to what she was doing on the iPads. The lesson she integrated was part of a curriculum she designed, and it enabled the students to understand and identify emotions. She did not anticipate that so many students would need one-on-one assistance while utilizing the App so if she had to do it all over again, she would only have a few students at a time participate in this lesson while the others worked on something else. Then they could rotate.

Participant 4

Participant 4 is a teacher in North Carolina who has been teaching special education for seven years. She said the mobile tablets have been a major advancement in her classroom for students who are nonverbal because they are a much cheaper version of the communication devices the school had to invest in previously. She explained, "Dynabox was the device most commonly requested by parents of people with special needs who are non-verbal." They were \$7-8,000 apiece." The Dynabox was considered to be the best option for communication because it could be programmed with different voices and all the person needed to do was touch buttons or picture symbols to create sentences.

On the cheap end, a Samsung tablet can be purchased for \$80-\$100 and there are numerous free apps available for non-verbal communicators, such as Let Me Talk. This apps are customizable to the students' environment because pictures can be added to represent words. There are also apps that can be purchased, such as the Proloquo2Go, which was mentioned in another interview.

The teacher also explained that students can have a Switch User, which enables students who do not have use of their hands, to successfully use the tablet and any apps for it. The teacher shared that the only negative aspect she has experienced is the tablets breaking from students throwing them or drooling on them. Because she works with students who have severe profound disabilities the most profound achievement is that they are able to gain independence whereas in other areas of their life they never experience independence.

Therefore, the tablets are important to them because they can do work, they could not do without them. She recalls a time when she first started teaching and only the higher-functioning students with disabilities were given tablets. Now, her school district recognizes the great need for students with profound disabilities to use tablets as well. She explained that did not have any professional development regarding tablets. She researched information on her own. She said the district only provides IEP-based training. She feels there are many good resources on Google and suggested that people, "type in 'free communication apps for students with autism' because a lot of apps will come up right away with a lot of good options."

This teacher's experiences were much different from the other participants because she works with students who have much more profound disabilities. Her lesson involved teaching students to recognize what to do with their hands. These students only use their hands when chewing on their fingers, sitting on them, or playing with articles of their clothing. They are resistant to holding objects, such as a pencil. As a result, the teacher does a lesson called Functional Fingers and students use the tablet to trace letters or press buttons that cause music to play. This not only works on giving their hands more meaning, but the lessons help the students to retain this information in their functional memory, so it lasts longer.

This teacher explained that she needed to change her instructional practice because so much of the tablets need to be used throughout every lesson. She also said that she worked with the Occupational Therapy and Physical Therapy Department to develop styluses that were able to be attached to the students' hands who have misshapen or

atrophied hands. There was one student who refused to touch it at all, so he works individually with the teacher and he picks up her hand and touches what needs to be touched. Every student has different accommodations needed and she needs to build those unique differences into her lesson plans.

P4 is an advocate for mobile tablets because she has seen the great improvements in her students from use of the tablets. She works with students who have profound disabilities and, for some of them, the mobile tablets are their only ways to communicate. Her lesson involved students learning how to use the correct functioning of their hands and she stated that this is a lesson they will do repeatedly throughout the school year to increase muscle memory. When confronted with an obstacle, she finds ways to work around it so she could not think of any negative aspects to the use of the tablets. For example, when a student refused to touch the screen, she found ways to modify it so he would be able to use it. She advises using the Internet to self-teach how to use the mobile tablets. She was not provided professional development.

Participant 5

Participant 5 has been teaching in Texas for 30 years and of those 30 years, she has been with special education for 15. She felt that mobile tablets are great for when students finish their work or for use during recess, but that the mobile tablets took away from learning when they were used during the actual lesson. She stated that this is because the Internet signal is weak, so it is hard to keep them on-line. She also does not like having to micromanage if the students are on the correct apps or websites.

The teacher said that she would have to change her whole way of teaching to use the iPads because she would have to build her entire lesson around them. She felt that the mobile tablets are more productive during recess because there are educational components that students can participate in, but without the mobile tablets the students' leisure activities are not as educational. She stated that her school has not provided any professional development opportunities regarding mobile tablets, but there was one day that they taught all the teachers how to download apps and read their descriptions.

This teacher conducted a lesson in which the students completed an addition and subtraction worksheet and then the students were supposed to use the iPad calculator to check their work. She stated that the ones who finished quickly then had nothing to do whereas others took so long with their sheet that they never got to use the calculator to check their answers. She stated that any other time she has used the mobile tablets during a lesson it felt like the students were learning from the mobile tablets and not from her, which she did not prefer.

P5 has been teaching for 30 years and is not an advocate for mobile tablets because she is uncomfortable using them, does not see their value, and has not received any professional development to learn how to integrate them appropriately. She tried to use the mobile tablet as a calculator, but it did not help the students directly to improve their skills. She feels the mobile tablets can be used during leisure time when instruction is not taking place and possibly as an incentive. P5 does not understand the value of the mobile tablets and therefore does not consider using them in a valuable way.

Participant 6

Participant 6 has been teaching special education for six years in Arkansas. She said she is a strong advocate for using mobile tablets in the classroom because we are in a world of technology. She shared,

Our kids seem to learn better that way. Any kids who do not have those skills will be set up for failure and will not be able to do 99.99% of what needs to be done in the job fields. If you work in restaurants, you need to be able to take an order on a computer, if you work in a store, you need to be able to operate a cash register. But anything you do, including our kids with special needs, need to be able to operate technology and it will only get more demanding. We need to utilize what we have to help them best learn.

In her experience, the students are engaged for longer periods of time while using the iPads because the hands-on lessons help them to focus their attention for longer than they do without that technology. This teacher also shared that some students get addicted to using the mobile tablets and cannot separate the technology world and the real world. She advises, “We need to be careful how we utilize it and what we utilize it with.”

Her school district is moving towards putting the whole curriculum on mobile tablets through a program called Next Gen System 44. All of the teachers will be training on it for the next two years. Paper, pencil, and the dry erase board will no longer be used in the room. This obviously changes her instruction design, but she stated that when she first started integrating the mobile tablets, her design had to change.

She said everything needed to be prepared a week ahead of time and changes at the last minute cannot happen because everything is preprogrammed on the mobile tablets.

She said sometimes student motivation falls when games are not being played on the mobile tablets. Work is not always fun to do, but she stated that with Next Gen System 44, game time can be earned by participating in lessons for a certain amount of time on the mobile tablets. This will encourage students to stay on task and work so that they earn game time.

Her district has offered professional development regarding behavior management while using the SmartBoard or iPad, training in how to create a visual schedule, and how to communicate through the iPad. She has also spent an entire day training to use Google Classroom. There have also been professional development opportunities that were unproductive to her classroom, such as one about suicide prevention, because it is not a prevalent topic for her students. For the majority of the time, her district allows teachers to choose which professional development they attend so it is usually beneficial and productive.

The lesson she chose to submit for the study involved the Wilson Foundation, which is their current reading curriculum. It helps students to learn the letter, a keyword, and the sound. The most innovative part of this lesson is the fact that the alphabet is not taught in the usual A-B-C order. It is taught in the order of how they are written. For example, T, E, and F are taught together because they “jump down to the ground and go left and right.” It helps with automaticity instead of just memorizing the alphabet and from there, students learn diagraphs, vowels, CVC words, and so forth. She finds that the mathematics lessons really adapt to the students’ individual needs because everyone can

work independently on their own goals. She has also found ways to use it for dexterity, such as games to pinch ants and to squeeze the squash.

P6 is a major advocate for mobile tablet integration and rejoices in the ability to utilize the mobile tablets all day every day for every aspect of the day. She finds student achievement to be much higher when they are used but explained that motivation varies depending on the tasks required of the mobile tablets. Her district offered professional development, but she also sought out extra training on her own to better her skills.

Participant 7

Participant 7 was a teacher from California who has been teaching for 14 years, 4 of which has been in special education. She feels the greatest benefit is that the students have the freedom to move around the room and do not have to be stuck in one place. She states that getting them to put them away when the lesson is done can be difficult. Another difficulty is the limited number of iPads in her room. She only has four working iPads and ten students, which means they need to share and have options for when they do not have the iPad.

She found that they can be used as a reinforcer to get students to complete other academic tasks. She is required by state law to attend three seminars a year to keep her teaching certificate up to date. She also needs to attend professional development every month, but out of the ten seminars she has attended on various topics, none have mentioned mobile tablets.

One year, her school provided an instructor who came to the classrooms to teach them how to use the Phonics intervention program, iRead. She finds this program

beneficial because it is available on-line and allows the teacher to look at and monitor the data. The lesson plan she submitted involved the students using Kahoot to play games in order to remember spelling patterns. She uses this as an incentive for students after they

P7 is an advocate of mobile tablets and likes the most that students with special needs are able to move all over the room while using them. She stated that the negative aspect is not having enough for everyone in the room to use at the same time. The school provided an in-classroom service to all teachers to help them learn to use a program on the iPad, which P7 stated was a great opportunity and she uses this program in the classroom.

Participant 8

Participant 8 was a teacher from Minnesota who has been in special education for 16 years. She states that the students like using them, so she likes having them. She mentioned that tactile learners are able to learn faster using the programs, but that free apps have limited screen time, so they are not able to use those for very long. She has not had any professional development regarding mobile tablets. She stated that they have iPads, Samsung tablets, and Amazon Fire, which causes a problem because the apps have different graphics across different platforms. As a result, students are not all on the same screen and some of the smaller tablets make it harder to see the tasks. One problem she faces during the lessons, “I become more reactive than proactive. I would correct a student if what was happening was incorrect, but I could do more before the lesson starts to prevent that.”

P8 states she is in favor of mobile tablets, but the analysis of her responses showed she was not an advocate of mobile tablets. The lesson P8 used required the students to use

an App to practice their counting. They were then supposed to simulate the counting with manipulatives on their desk. The objectives of this lesson were to have the students reinforce their counting skills, but the application on the mobile tablet was unnecessary. Physical manipulatives on the desk could have been used regardless of mobile tablet use and it did not tell the students whether or not they were correct with the desk portion. She has not received any professional development and finds using different apps on different tablets, such as Samsung vs. Apple, to be difficult because the interfaces look differently.

Data Analysis

Below is a table that aligns all codes to the original conceptual themes resulting from my literature review including personal beliefs about teaching and learning, classroom issues during the integration of the mobile devices, technological issues identified and the professional development issues the teacher identified.

Table 1.

Theme 1: Personal Beliefs

Theme 1	Initial Codes for all participants	Patterns for each participant	Cross Case Codes
Personal Issues:	Negative	Negative: Student	Constructivism
Beliefs About Learning	Feelings/Experiences	Engagement, Negative: Student Motivation (2),	

Positive Student-Centered Learning	Student Motivation, Student Independence	Adult Learning Theory
Negative Student-Centered Learning.	Negative: Student Independence	
Positive Feelings/Experiences	Changed Instructional Practice	Constructivism, Adult Learning Theory
Lesson Exactly As Planned	None	
Lesson Not As Planned	Different Tablets, No Internet, Not Enough Tablets	Experiential Learning Theory

Table 2.

Theme 2 Codes: Instructional Issues

Instructional Issues	Changed Instructional Practice, Limited	Pro-Tactile Learners.	Experiential Learning, Adult Learning Theory
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Knowledge of		
Mobile Tablets,		
Broken, Negative:		
Student Centered		
Learning		
Lesson Exactly As	Changed	Constructivism
Planned	Instructional	
	Practice	
Lesson Not as	Pos- Student	Constructivism
Planned	Independence	
Same Instructional	Transferring	Experiential Learning
Practice	Knowledge	Theory
	Difficult	
Increase in Student	Increase in Student	Adult Learning
Achievement	Motivation,	Theory
	Independence	
Increase in Student	Increase in Student	Adult Learning
Motivation	Achievement,	Theory
	Student	
	Independence	
Apps Self-Correct	Pro: Tactile	Adult Learning
Students	Learners	Theory

Used as	Student	Adult Learning
Communication	Engagement,	Theory
Device	Student	
	Independence	

Table 3.

Technological Issues

Student Interactions	Positive: More	Apps Self Correct	Adult Learning
Information	Tactile Applications		Theory
Other students			
Teacher			
	Changed	Student	Constructivism
	Instructional Practice	Engagement,	
		Student	
		Independence,	
		Student	
		Achievement	

Below in Table

Technological	Transferring	Lack of Student	Experiential Learning
Issues	Knowledge Difficult	Achievement	Theory
	Reinforce Skill	Pos-Apps Self	Experiential Learning
		Correct Students	Theory

Teach New Skill	Pos- Communication Device	Rogers' Theory of Diffusion of Technologies
Broken	Pos-Student Achievement	Resources
Neg-Different Tablets	Not Available	
Long Prep Time	None	Experiential Learning Theory
Limited Free Apps	Limited Knowledge of Mobile Tablets	Experiential Learning Theory
Not Enough Mobile Tablets.	Different Tables, Lesson Not As Planned	Rogers' Theory of Diffusion of Technologies

Table 4. Identifies initial codes and patterns for the theme professional development

Theme 4.

Professional Development

Professional Development	Loss of Internet	Positive Professional Development Experiences	Adult Learning Theory
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Cost	Pro:	Resources
	Communication	
	Device	
Limited Knowledge	Broken, Not	Rogers' Theory of
of Mobile Tablets	Available,	Diffusion of
	Negative:	Technologies,
	Instructional	Experiential Learning
	Design	Theory
Obtained Knowledge	No Professional	Constructivism,
On Own	Development	Rogers' Theory of
		Diffusion of
		Technologies,
		Experiential Learning
		Theory
Provided Own	Neg- Cost	Constructivism,
Professional		Experiential Learning
Development		Theory
Negative	Pos- Cost	Resources
Professional		
Development		
Experiences		

Grant Funded	Neg- Limited	Rogers' Theory of
	Knowledge of	Diffusion of
	Mobile Tablets	Technologies
District/School	Changed	Rogers' Theory of
Provided	Instructional	Diffusion of
Professional	Practice, Negative	Technologies,
Development	Experiences (7),	Experiential Learning
	Positive Experience	Theory
	(2)	
Positive Professional	Own Professional	Constructivism
Development	Development (4),	Rogers' Theory of
Experience	Changed	Diffusion of
	Instructional	Technologies,
	Practice	Experiential Learning
		Theory
No Professional	None	Rogers' Theory of
Development		Diffusion of
		Technologies,
		Experiential Learning
		Theory

The number of positive codes was 20. However, one code had both negative and positive patterns, District Provided Professional Development. Two participants experienced very good professional development from their school to integrate mobile tablets. However, the other four participants who received district/school provided professional development reported that it was not useful in their classroom. In terms of professional development, some teachers liked gathering knowledge of the mobile tablet integration for classrooms on their own, whereas other teachers struggled to obtain knowledge. And, some teachers enjoyed seeking out and attending workshops and classes, but also reported that they had to pay out of pocket for them.

The number of negative codes was 17. There were negative feelings and experiences for teachers who felt students should not be motivated by mobile tablets because a problem would arise if they could not earn them. These same teachers did not want their instructional practice to change and did not like that student-centered learning occurred when they had limited knowledge of how mobile tablets were used. They felt the best ways to teach their students were through teacher-centered learning.

They also had limited knowledge of how to integrate the tablets and had experiences with students breaking the tablets. Some teachers also felt that the students were unable to transfer the knowledge they learned on the mobile tablet to real-world applications. For example, being able to write out the alphabet on the tablet, but unable to write it out on paper. However, other teachers pointed out that this was a benefit of the mobile tablet because, without it, there would be no knowledge that the student had this knowledge.

Most of the negative codes were related to technological issues. For example, the lesson could not be carried out as planned because there were not enough tablets for all of the students, the tablets were not of the same brand, so the apps looked differently, and/or the Internet connection dropped. Other technological related issues involved students breaking the mobile tablets, a long prep time for teachers while they learned to use the mobile tablets, the limited time allowed on free apps, and limited options for free apps.

Figure 1 below is a word cloud that identifies the prominence of the cross-case codes. It identifies the benefits of student independence and student engagement as aspects the teachers described as a positive resulting from the integration of mobile devices in their classroom. It also identifies the prominence of positive feeling that they described concerning their role in the classroom. The fourth code that is prominent is using the same instructional process. These teachers described wanting to integrate technology without changing the instructional practice in their classroom.



Figure 1: Cross-Case Codes

Cross-Case Analysis

As a result of my analysis of each case, I was able to develop cross-case patterns. The highest code co-occurrence, in 11 incidences, is student motivation and student engagement. Seven of the eight teachers were able to equate those two themes together, four of which did so more than once. There were eight co-occurrences of student

independence and student engagement, which makes sense because a student needs to be engaged in order to work independently.

There were also seven co-occurrences of student engagement and student achievement. This means that they described students who work independently as more engaged, more motivated, and achieved at a higher level. There were fewer co-occurrences amongst other themes. For example, there were only three co-occurrences of mobile tablets being used as communication devices, but this would be because not all teachers were using the mobile tablets as communication devices. There were also seven co-occurrences between student centered-learning and student independence because student centered-learning is largely independent.

There are several patterns present throughout the data. The patterns of student motivation and student engagement, student independence and student engagement, student engagement and student achievement, and student independence and student-centered learning, ranged between six to 11 co-occurrences. These were more predominant than other patterns, which only had one to three co-occurrences.

The research questions for this study were What are the experiences of special education teachers integrating mobile tablets into the curriculum?, What are the perceptions of special education teachers integrating mobile devices into their classrooms? and How do special education teachers describe their experiences while integrating mobile devices into their classrooms? I responded to these research questions by collecting data before and after the teachers implemented a lesson using mobile devices and the lesson plan for that lesson. In response to the research questions concerning their perceptions, I

interviewed these teachers. In response to the research questions on experiences, I interviewed the teachers before and after a specific lesson was implemented in their classroom and I analyzed their lesson plans. After my analysis of the cross-case patterns, I was able to develop four related themes.

1. Theme 1: The teachers' personal beliefs about learning in classrooms using mobile devices
2. Theme 2: Instructional issues related to implementing the new technology
3. Theme 3: Technological issues integrating the mobile devices
4. Theme 4: Issues from outside the classroom

Evidence of Trustworthiness

The interviews were recorded on the Voice Recorder on Microsoft Office and the laptop is password protected. The data of the recordings and the transcribed interviews on Microsoft Word were uploaded to a password protected OneDrive. The Microsoft Word documents were uploaded to Dedoose, which is also password protected. The interviews were emailed to each individual participant for verification as part of the member-checking process. Each participant responded that their responses were accurate, which increased the credibility of the study.

Transferability is limited solely to special education specific teachers. All eight teachers were special education certified and has been teaching special education for longer than two years. A lesson plan was collected to verify their findings. Dependability is the ability of this study to be repeated, which is possible because the research design could be implemented with other teachers in other settings, there is operational detail of

the data gathering, and there was the reflective appraisal of the project. Member checking was used to ensure that the participants agreed with the information in the transcripts of their interviews.

The research began only after IRB approval. The participants signed an Informed Consent Form before data collection began. Alphanumeric pseudonyms were used for all participants, and all of their data was password protected. After five years, I will delete all the data.

Results

There were four themes for this research. The first was about the teachers' beliefs about learning. The teachers had very different beliefs about learning in their classrooms. The second theme was instructional issues. Teachers had both positive and negative experiences as they related to mobile tablet integration. The third theme was the technological issues that teachers experienced. The fourth and final theme was issues identified by the teachers from outside their classroom that impacted their ability to integrate mobile devices in their classrooms. These issues were related to the support system that were available in the district or their school.

Theme 1. Personal Beliefs

This theme was concerning the teacher beliefs related to implementing a student-centered, constructivist learning environment. These teachers described radically different beliefs about learning in their classrooms and using mobile devices in their classrooms. P1 is an advocate for integrating mobile tablets and uses them to conduct science experiments that students would not be able to participate in without the tablets. She felt the students

benefit through higher achievement, engagement, independence, and motivation. P2 is an advocate for iPads specifically and uses the iPads for the majority of the day, including for communication. She feels they can be used to enhance every lesson in ways that cannot be enhanced without the use of them.

P3 is an advocate for mobile tablets because she has discovered that her special needs students can show knowledge and skills they have with the mobile tablets and are unable to show these skills without them. P4 is an advocate for mobile tablets because she has seen the great improvements in her students from the use of the tablets. She works with students who have profound disabilities and for some of them the mobile tablets are their only ways to communicate. P5 does not believe there is value in using the mobile tablets in the classroom.

P6 is a major advocate for mobile tablet integration and rejoices in the ability to utilize the mobile tablets all day every day for every aspect of the day. P7 is an advocate of mobile tablets and likes the most that students with special needs are able to move all over the room while using them. She likes that her students can be so tactile with them while moving freely around the classroom. P8 states she is in favor of mobile tablets, but the analysis of her responses showed she was not an advocate of mobile tablets. The lesson she conducted did not utilize the mobile tablets to their potential and could have been conducted without them.

An evident theme from the patterns was that teachers who reported positive feelings towards student-centered learning, also had positive feelings towards changing the instructional design. These teachers also reported an increase in student independence,

engagement, motivation, and achievement. Another theme was that all teachers reported that they supported mobile tablet integration, but not all teachers' actions and lesson plans supported their feelings. For example, a teacher who reported that student centered learning was a negative aspect of using the mobile tablets also reported that student achievement, student independence, and student engagement did not change. That teacher also reported that student motivation changed because they wanted to use the mobile tablets during recess or a playtime but using it during those periods is not educational.

The data related to the teachers' beliefs about integrating new technology paints a picture of two very different types of teachers. One type was the one who eagerly adopts the mobile tablet, acknowledges that it does take more work, but uses the extra time to learn as much as possible. These teachers used the mobile tablets for activities that could not be done without them.

The second type is the teacher who expressed a lack of interest in the integration of mobile tablets and did so simply because she was required to. These teachers had some positive things to say about the mobile tablets, but their responses were mostly negative. These teachers felt that the negatives outweighed the positives and were less likely to integrate the mobile devices in innovative ways.

Teachers who sought out information and resources in their own free time and used Google to locate more resources for mobile tablets were strong advocates of the mobile tablets and wanted to integrate them as much as possible throughout the day. Teachers who were using the mobile tablets in ways that were less effective, such as a calculator, had no professional development and did not try to find their own. All of these

teachers did verbally state that they were in favor of the mobile tablets, but the ones using their mobile tablets at the bare minimum stated they did not feel they could help students learn and felt they were only productive during leisure time or as an incentive. This study identified that the teachers implemented the new technology based on their beliefs about how the students learn and how the mobile devices improved the potential for learning among their students.

Theme 2. Instructional Issues

These teachers were interviewed prior to teaching a specific lesson and after teaching the lesson. The teachers described specific instructional issues that were both positive and negative related to their use of mobile devices. P1 is concerned that students might get addicted to using mobile tablets for cognitive abilities that they should be doing on their own, such as calculations. Her class used it to conduct a science experiment to crossbreed two organisms and create a Punnett square, which would not have been possible without the technology. P2 has her students use an iPad compatible with Flash to complete a lesson that they participate individually while following along as a group on the Smartboard. However, during the lesson they occasionally have a task come up that requires use of the computer and there is no foreshadowing of the task so at times the teacher is caught off guard and it takes a while for each student to take a turn on the computer so that they can continue on their unit on the iPad.

P3 used a lesson that taught students to understand and identify emotions, but she did not anticipate that so many students would need one-on-one assistance while utilizing the App. In the future, she would have needed a better rotation. P4 taught students the

correct functioning of their hands. She stated that this is a lesson they will do repeatedly throughout the school year to increase muscle memory.

P5 tried to use the mobile tablet as a calculator, but it did not help the students directly to improve their skills. She feels the mobile tablets can be used during leisure time when instruction is not taking place and possibly as an incentive. P5 believes this is a successful way to use the mobile tablets in her classroom because she has never experienced otherwise. P6 finds student achievement to be much higher when mobile tablets are used, but she explained that motivation varies depending on the tasks required of the mobile tablets. P7 tries to use the mobile tablet in every aspect of the day through every lesson.

The lesson P8 used required the students to use an App to practice their counting. They were then supposed to simulate the counting with manipulatives on their desk. The objectives of this lesson were to have the students reinforce their counting skills, but the application on the mobile tablet was unnecessary.

In summary, all of the teachers responded to multiple issues when integrating the mobile devices. Their integration was also linked to their beliefs about how and why to use the mobile tablets in their classroom. These teachers were all responding to the pedagogical concerns, the technological issues, and their own beliefs about learning while integrating the mobile devices in their classrooms.

Theme 3. Technology Integration Issues

There were specific technological issues that were described by these teachers related to their mobile devices. P1 experienced the difficulties of carrying out a planned

lesson when the Internet goes down. P2's only technological issue is that the interface she uses to conduct the lesson does not come with a lesson plan so she does not know in advance when a computer will be needed until the computer program announces it. P3 did not know she was able to lock the apps because the professional development the district provided her did not relate to what she was doing on the iPads.

P4 reported that she did not have any issues. She stated that if she ever encounters an obstacle, she finds a way to maneuver around it. P6 did not report any technological issues. P7's technological issue is that there are not enough mobile tablets for everyone to use in the room at one time. P8 had difficulty using different types of tablets and different models because the interfaces look differently.

A common issue among all the of participants was the lack of resources for integration of the mobile tablets. Even participants, such as P2, P3, P4, P6, and P7, who successfully integrated mobile tablets into every lesson throughout their curriculum, described how they sought out their own resources via workshops in the summer, classes held at Apple, and/or Internet searches for the material. These participants were eager to expand their knowledge, so they had to search during their free times for resources that made this possible. Again, these participants who integrated the mobile devices successfully were motivated to do so because they felt it would support their students.

Theme 4. Professional Development

The issue impacting their integration of mobile devices from outside the classroom described by these teachers included the type and quality of professional development. Several teachers described that their district did not provide any professional development

for them to integrate the mobile tablets. Teachers described that their districts provided professional development for teachers to integrate the mobile tablets, but the training did not relate to what teachers needed the tablets for in the classroom. For example, training on how to use a specific program, but the program is not on the mobile tablets or how to do rudimentary things, such as how to read an Apt description.

Finally, there were issues that were related to the support system in their districts that impacted their ability to implement their mobile devices. Of the eight participants, one of them, who received no professional development, used the mobile tablets as an incentive once students finished their classwork. She felt that the mobile tablets are best used "for recess or when a student finishes his or her work, but they take away from learning when they are in the actual lesson." Two other participants, who also did not receive professional development, used their mobile tablets for lessons that students could have participated in without the tablets. For example, using the calculator function to verify calculations are correct and taking out manipulatives and counting alongside the tablet.

P1 had professional development focused on how to use the tablets for a science experiment that would not be possible to do without them. P1 stated, "In science, they are able to see or complete labs that might not be possible due to money and location. They can also use equipment of actual practical reason, for example, we can visit the sun in person via the mobile tablet."

P4 stated that she has never received "good professional development" regarding mobile tablets from her school. She researched classes on mobile devices and paid for

them on her own. She also used the Internet to self-teach. She states that the mobile tablets are awesome and, "Now students who have never been able to communicate before can contribute, ask a question, or express a need/desire."

One teacher, who received a lot of professional development, used the mobile tablets for both multiple lessons throughout the day as well as a communication device for non-verbal students. Another teacher, P7, received professional development to use iRead, which is a Phonics intervention program. She uses just that program in the classroom for Phonics Intervention and finds it useful for the students. However, she does not use the mobile tablets any other time. She states that at other times, "we use it as a reinforcer; for example, if you read your story you can use the iPad."

The remaining three teachers received professional development and used their mobile tablets in innovative ways throughout the day and were able to make adjustments to future lessons when things did not work out as planned. These teachers discovered that their students' achievement levels are higher when mobile tablets are integrated.

The professional development P2 sought out on her own time and resources were helpful to her integrating the mobile tablets for the whole day, but the district never provided her with any she could use in the classroom. This means she had to spend money out of pocket for this education.

P3's issue was that the professional development provided did not apply to tasks being conducted in her classroom and she was not taught the technical aspects of the iPad, such as how to lock an App. P4 did not receive any professional development nor

instruction from her school and had to teach herself. She suggested using the Internet to self-teach how to create different lessons and use apps.

P5 did not receive any instruction nor professional development for the mobile tablet integration. P8 has not received any professional development and finds using different apps on different tablets, such as Samsung vs. Apple, to be difficult because the interfaces look differently. P1 did not experience issues related to her support system; the professional development she participated in was provided by the district, which specifically taught how to integrate a science unit using the mobile tablets.

P6's district offered professional development, but she also sought out extra training on her own to better her skills. P7 also had a positive experience when the school provided an in-classroom service to all teachers to help them learn to use a program on the iPad. P7 stated that she uses this program in the classroom. For example, teachers described their district administrators paying an outside provider to come in and teach how to use his/her program, but then not purchasing the program for the mobile tablets. P6 shared,

a company came and they showed that you could lock the screen, you could monitor progress from your own computer while the kids were learning, but then my district didn't buy it. So why sit through this hour presentation and learn the program if you weren't going to buy it? If they were going to buy it, it would have been helpful. What we did was more general iPad care.

In summary, these teachers described professional development that was not effective.

P3 stated,

We are in a world of technology. Our kids seem to learn better that way. Any kids who do not have those skills will be set up for failure and will not be able to do 99.99% of what needs to be done in the job field. If you work in restaurants you need to be able to take an order on a computer, if you work in a store, you need to be able to operate a cash register. But anything you do, including our kids with special needs, need to be able to operate technology and it will only get more demanding. We need to utilize what we have to help them best learn.

Throughout the course of all the interviews, only Participant 5 and Participant 6 had experiences that showed their school district deliberately followed experiential learning theory in order to help their teachers integrate mobile tablets. Both participants participated in training sessions that deliberately taught them how to specifically integrate mobile tablets for specific units and lessons. During professional development, they had the opportunity to use the mobile tablets, to observe how they were used with students, and then plan how they could use it in their classrooms. Additionally, while they integrated them for the first time, they noted the changes they needed to make for future lessons. Access to quality professional development made a difference in how these teachers integrated the mobile devices.

Summary

Special education teachers who were interested in integrating mobile tablets spent time researching integration strategies on their own and attending professional development opportunities on their own time and budget. These teachers looked for

innovative ways to integrate the mobile tablets and were excited to note an increase in student achievement. All the teachers stated that when technology personnel came directly to their classroom and provided in-service help and teaching inside their classroom on an individual basis more progress was made.

For these teachers, their schools attempted to provide professional development, but much of it was useless for the mobile tablets. Teachers who did not spend their free time engaging in professional development to integrate the mobile tablets used their tablets for recreational usage in the classroom. For example, using them to play non-educational games or using them to watch videos on YouTube.com. The students used them for activities they could have participated in without the tablets. However, even these teachers believed they were using the mobile tablets to their potential and felt the mobile tablets gave some benefit to their students.

Another result was that student independence, student centered learning, student motivation, student engagement, and student achievement are all connected. Teachers who successfully integrated the mobile tablets in a meaningful way found that their students' levels improved, and their goals were met in ways that could not have been achieved without the use of the mobile tablets. The next chapter summarizes my analysis, describes the interpretation of the results, and identifies implications from this study.

Chapter 5: Discussions, Conclusions, and Recommendations

Introduction

The purpose of this exploratory case study was to examine the experiences of special education teachers while they integrate mobile tablets into the classroom. This study was a qualitative single case study of special education teachers who have integrated and are integrating mobile tablets into the classroom at a school for students with special needs in the U.S. I identified four major themes as a result of my analysis. They were the teachers' personal beliefs about learning and learning with technology, their experiences integrating the new technology into their classrooms, the specific technological issues related to mobile devices and the professional development issues that impacted their integration of the mobile devices.

This study identified that these teachers had very different beliefs about learning in their classrooms. Research showed that teachers stated that they were believers in mobile tablet integration, but their actions did not always connect to their feelings. For example, one teacher stated she was in favor of the mobile tablets integrations but did not use them in meaningful ways. The teachers who described favorable beliefs about the benefits of using mobile devices used these devices in much more effective and innovative ways in their classroom

These teachers described both positive and negative experiences as they related to mobile tablet integration. Teachers reported that it was difficult to use the mobile tablet in genuine ways, in a way to increase the learning opportunities of the students. Some used it solely as an incentive during recreational activity periods. Other teachers knew how to

successfully integrate so that their students learned at a level that was not possible without the mobile tablets

These teachers experienced multiple technology related issues including hardware issues, such as a mobile tablet breaking or the Internet being down. At other times, teachers reported having difficulty keeping students on the App they were intended to participate, but this was due to not having the knowledge of how to lock the mobile tablet. There were issues related to having multiple types of tablets in their classroom and the difficulty of integrating tablets from different companies.

Some of the participants never received professional development from their school/district and as a result, lacked two of the critical stages of experimental learning theory. As a result, their abstract conceptualization stage was based on minimal to no experience and without the knowledge of the mobile tablet's potential it was hard to visualize appropriate uses for the mobile tablets and that meant their active experimentation lacked different critical variables. Most of their changes for the future involved getting protective cases for the mobile tablets rather than lesson changes to help increase learning. This reduces their ability to integrate mobile devices effectively in their classrooms.

These teachers described two major issues from outside their classroom that influenced their integration of mobile devices. Several teachers described how their school supported the use of mobile tablets and how their IT department eagerly answered questions and helped them to use them in the classroom. Others explained that the school or district required the use but provided no assistance in how to use them. This lack of

professional development meant that these teachers were less likely to integrate the new technology in meaningful ways unless the teacher personally paid for or found training on mobile devices.

Interpretation of the Findings

There are several themes that became known during this research. Firstly, these teachers described very different beliefs about learning in their classrooms. The second theme was instructional issues; teachers had both positive and negative experiences as they related to mobile tablet integration. The third theme was the technological issues that teachers experienced. The fourth and final theme was the type and quality of professional development that these teachers experienced.

Personal Beliefs of Teachers

The personal beliefs of special education teachers set the foundation of whether or not the integration of mobile tablets will be successful. Jean Piaget explained that knowledge is constructed by experiences (The Basics of Philosophy, 2008). Together, knowledge and experiences form the personal beliefs teachers have about the mobile tablet integration. Research by Judson (2006) showed that teachers who were motivated to integrate were more likely to already utilize constructivism, which means they already rely on their personal beliefs to shape their classroom. David Kolb's experiential learning theory explained that knowledge is created through the transformation of experiences (Kolb, 1984, p. 38).

David Kolb's experiential learning theory explains that knowledge is created through the transformation of experience. Four important stages explain this theory, which

are concrete experiences, reflective observation, abstract conceptualization, and active experimentation (Kolb, 2014). The theoretical proposition is that if experience, perception, cognition, and behavior are combined during the teacher professional development and/or preparation process, teachers will successfully integrate. The abstract conceptualization stage could also allow teachers to envision what it would be like to incorporate mobile tablets into their classrooms (Kolb, 2014). They may think of a way to successfully integrate the mobile tablets without needing to change their instructional design.

These teachers' beliefs about learning impacted the how and why of their integration of these mobile devices. Special education teachers' personal beliefs are formed through their experience, perception, cognition, and behavior. Gropen, et al., (2017) explored the difficulties that preschool teachers and their research explained that content knowledge that teachers already had was an indicator of how their students' learning will progress (Gropen, et al., 2017, p. 608). Another example of this from the research was from the study by O'Malley et al. (2013). Teachers in this study attended an Apple workshop in order to gain more experience. In my research, special education teachers who already had experience with mobile tablets were more eager to integrate. They used outside resources, such as search engines and their IT departments, to learn how to use them to their fullest potential. Teachers without any experience were quick to state the mobile tablets' limitations and used them sparingly.

The research by Chiu and Churchill (2016) showed that teacher beliefs, attitudes, and anxiety changes after mobile devices are integrated (p. 321). Their surveys showed that teachers gained experience while using the mobile tablets, but that some teachers

experienced high anxiety levels and required a long period of time to learn how to integrate (Chiu & Churchill, 2016, pp. 323-324). In my research, teachers did not report on having anxiety, but the ones who were laggard in their actions to integrate did not spend enough time invested in the mobile tablets to develop anxiety.

The study by Judson (2006) showed that motivated teachers eagerly integrated technology and connected their teaching techniques to student goals. This is similar to my study, in which teachers who believed the mobile tablets would positively affect their classroom were very motivated to use them. The study Flewitt, et al., (2015) studied teachers who spent a long amount of time in order to integrate iPads throughout multiple subjects. This is similar to my research in which some of the participants redesigned their entire curriculum so that the mobile tablets could be used the whole day.

This study found that these teachers responded to multiple issues related to the integration of these mobile devices. Based on constructivism theories, a study by Cuban (2001) found that technology was not easily integrated into classrooms with teachers who did little to change their instructional design. As a result, teachers did not successfully use the mobile tablets as an instructional tool. In my research teachers who did not want to change their instructional design were unable to use the mobile tablets in meaningful ways.

This was an important finding when working with Participant 5 because she did not know the true value behind integrating mobile tablets. As a result, she spent no time trying to learn how to integrate them and felt their only importance was during recess. Because the element of understanding the value of mobile tablets in academic subjects did not

exist, the likelihood of the integrating being successful decreased, which is why they were not used successfully in Participant 5's classroom.

However, the teachers who expressed negative feelings about the benefit of mobile devices also believed they were successfully integrating the mobile tablets. Through adult learning theory, Malcolm Knowles made five assumptions about adult learning that explain how personal beliefs formed (Knowles et al., 2015). The assumptions were that as adults mature they become self-directed rather than dependent, they accumulate more experiences and increase their resources for learning, they become more ready to learn, they prefer immediate application and problem centeredness, and their motivation is internal (Knowles et al., 2015, p. 72).

Without understanding the value behind learning something new, teachers will not commit to learning. These teachers responded in their classrooms based on how they understood and believed these technologies supported their instructional goals. In my research, some of the participants were not using the mobile tablets in a student-centered learning instructional design, but believed they were using them. They also stated that they were in favor of integrating them, but their use for them was as a reward for students or were used only during recess periods.

Technological Issues

Rogers' diffusion of innovation theory helps to explain the accessibility, functionality, and usability of mobile tablets as they are integrated into the classroom to fully use the mobile tablets during the best course of action available (Rogers, 2003, p. 177). These concepts explain how these attributes of the mobile tablets were perceived by

teachers. This is an important aspect to understand for the integration of mobile tablets to be successful. In my research, teachers who perceived the mobile tablets as a revolutionary way to improve the classroom were able to successfully integrate. Even if they had little experience with mobile tablets, they were motivated to seek out more information by doing their own research. Those who perceived mobile tablets as unnecessary used them at the bare minimum.

Accessibility. A technology should be accessible. In this study, there were issues of multiple type of tablets, not enough tables for the students and difficulty using the interface. The issues are also described in the study by Chen (2019) including mobile tablets being forgot at home, because students were required to bring them home for homework, mobile tablets not being charged, and students being able to use them for recreational purposes during classes (p. 631-632). Reese, et al., (2016) explained that mobile tablets crashing, or apps needed to be reinstalled would hold up an entire lesson.

In my research, the teachers whose schools were supportive, provided training to integrate and helped develop a curriculum in which every classroom could follow. Additionally, they provided technology services for hardware and software issues. With every classroom utilizing the same techniques and apps, teachers were able to create and share information with each other. This helped to strengthen their teaching techniques. Those schools who followed these two-criterion understood that a great amount of time was needed in order to learn how to integrate meaningfully. In my research, schools that did not provide help when the Internet was not working or when a mobile tablet broke meant that teachers had to wait weeks or months waiting for something to be fixed.

Functionality. It is important that the technological tool is functional for the classroom. A study by Hesser and Schwartz (2013) showed that an extensive amount of time needed to be dedicated to determining which apps would work for their course because the apps needed to be researched, evaluated, and tested to determine which would be the best for the course (Hesser & Schwartz, 2013, p. 6). In my research, teachers whose schools evaluated apps and loaded them on to the apps saved teachers preparation time. By doing this, teachers were able to spend time learning how to successfully use the apps instead of spending time researching their own.

The schools that did not provide their teachers with information and allowed them to use any apps they wanted resulted in App use that did not always provide a strong educational foundation. For example, downloading free games that had limited levels if not purchased or downloading games that did not work on improving skills. This same issue was prevalent in a study by McKenna, et al., (2015) and Maich and Hall (2016). Additionally, in a study by Anderson, et al., (2017) some teachers never found an app that could use with the class and were unable to integrate these technologies into their classroom.

Usability. It is important that the technology integrated is usable. In the study by Hesser and Schwartz (2013), another issue that occurred was that students had difficulty with the stylus and zooming in and out of the files they needed to fill out took a lot of time. They had to keep opening and closing apps so they could copy information from one page onto another. In my research, one teacher was unable to continue the lesson for a

while when the Internet went down because the App was Internet based. There was no way to conduct that same lesson without the App.

These teachers were interviewed before and after they implemented a lesson integrating the mobile devices in their classroom. As a result, their real-world experiences defined the necessity of considering the usability, functionality, and accessibility of these new technologies when integrating them into classrooms. These teachers described classrooms that were highly, fluid and complex. The teachers made decisions about how to respond to the technological issues and trouble-shoot the technology so it would work in their classrooms. However, many of the decisions were made without the benefit of reliable professional development.

Professional Development Issues

These teachers described several issues related to issues impacting their classrooms from outside their classroom including lack of technology support, and professional development. In most cases, these teachers did not receive functional professional development that would support their decision-making in their classrooms. For some participants, however, their desire to change their instructional design, to create lessons that utilize student-centered learning, and their understanding of the value that mobile tablets bring to the classroom meant they tried to construct their knowledge while using them. They did this by testing out the mobile tablets on their own time and freely admitted that they spent a lot of time doing this.

Per adult learning theory, when professional development is provided, integration may be more successful. Teachers need to be involved in the planning and the actual

professional development should involve problem-solving and learning activities while using the mobile tablets, so teachers are emotionally invested in the implementation (Knowles et al., 2015). Despite the theoretical proposition that teachers need more time and quality guidance to construct an instructional design that incorporates mobile tablets, these teachers used their own personal time to build these lesson plans and how to learn different ways to use the mobile tablets. One participant explained that in the future the amount of time she will need to continue her use of the mobile tablets will only increase.

Adult learning theory, also known as andragogy, reflects the thoughts that as adults mature they become self-directed rather than dependent, they accumulate more experiences and increase their resources for learning, they become more ready to learn, they prefer immediate application and problem centeredness, and their motivation is internal (Knowles et al., 2015, p. 72). It is also important to note that adults need to understand the value behind learning something new and when they are given the opportunity to voice their expectations and what they want to be able to do with technology, they will be more committed to learning (Knowles et al., p. 35).

This connects to adult learning theory, constructivism, and experiential learning. The experiences of the special education teachers who were interviewed were shaped by what they feel learning is and how they reacted to the requirement of mobile tablet integration in their classrooms. Constructivism, and experiential learning theory were chosen as theories to base this study on because they relate to ability to create learning opportunities. As shown through the analysis study and through data collection, it is less effective for adults to learn without the ability to self-direct. The study by Judson (2006)

that showed teachers motivated to integrate technology into their classrooms who were also utilizing constructivism in their classrooms showed that teachers' instructional designs reflected constructivism principles.

This is similar to some of the participants who allow their lessons to be student-centered and allowed their students to explore, create, and make mistakes while learning. The study by Judson also showed that teachers already utilizing constructivism in their classroom would not have to change their instructional designs to integrate mobile tablets, which was also true for one participant. She used the mobile tablets throughout an entire science lesson to enhance the lesson in a way that it could not be done without the tablets. She stated that she never had to change her instructional design, she has been using the same methods for students in science class, especially for experiments. The mobile tablet just made the lesson better.

A survey by Crompton, et al., (2016) showed that schools originally focus on technology integration instruction, but then switch to ongoing support after it is initially introduced (Crompton, et al., 2016, p. 483). This research showed that teachers felt the mobile tablets were not integrated effectively and because they felt a lack of confidence when trying to implement meaningfully (Crompton, Olszewski, & Bielefeldt, 2016, p. 484) as a result of the lack of professional development opportunities. In this study, teachers that were provided no professional development and had no prior experiences with the success of the mobile tablets tended to use them for recreational purposes only.

According to Roger's theory on the diffusion of innovation (Rogers, 2003) there is a need for a social dynamic that encourages innovation. This was a resounding pattern in

this study because if a teacher reported that she revolutionized her classroom with mobile tablet she was also reporting that her entire school and/or district all received mobile tablets and were integrating them throughout the entire day. If a teacher reported that she was only using them for certain subjects it was explained that teachers were left to use the mobile tablets through education of themselves.

Additionally, Rogers described the necessity of support for innovators in a system. For the teachers involved in this study, if their school system was not providing professional development to help integrate the tablets in the way administrators intended, that meant their social system was not involved in helping them integrate. Another factor in innovation is the additional time it takes to innovate. Teachers in this study who successfully integrated the mobile tablets throughout the day explained that they had to dedicate much of their free time to learning how to use the mobile tablets.

Limitations of the Study

The limitations in this study are related to the single case study design with multiple participants. In other words, the relatively small sample size, which included eight special education teachers. Another limitation is the fact that only female teachers opted to participate; there were no males in the study. This means the diversity of the participants was limited. Participants were limited to teachers in the United States. Transferability is limited solely to special education specific teachers in the United States.

The research problem is that there is a lack of information about special education-specific teachers' experiences when mobile tablets are integrated into the classroom. The interviews conducted with the teachers plus a copy of their lesson plans were used to learn

more about their experiences. The boundary of the study was limited to special education teachers. These teachers were located in different types of school throughout the United States. Some were from special education-specific schools, some were from public schools with special education classrooms, and some were from private schools. All of the students had developmental disabilities. Teacher already integrated the mobile tablets into their classrooms.

One aspect of the research that may influence the results is that all of the teachers were from elementary education except for one high school teacher. The integration process for younger students could be different than the process for older students. Another aspect of the research that could influence results is that some teachers use mobile tablets the entire day as a communication device for their students. As a result, that means the mobile tablets are used the entire day, but not always to enhance the educational experience outside of communication needs.

Recommendations

Future research can have fewer limitations and delimitations by making the following improvements. Rather than a small sample size, the study can include a larger number of participants. To better manage the data a survey can be used with questions derived from this research. The research would be quantitative, but statistics could be created in order to strengthen this qualitative study. Future research should include male teachers because for this research no male teachers volunteered. Additionally, an even number of teachers from a variety of grades should be recruited. That way, the same amount of high school and elementary school teachers' experiences can be compared.

Teachers' beliefs and the training they received to integrate mobile tablets can help to design the next study. In a future study, Rogers' Theory of Diffusion of Technologies should be used as the theoretical framework. This is because Rogers defines adoption of technology as the "full use of an innovation as the best course of action available" (Rogers, 2003, p. 177). From this research, it was discovered that teachers who minimally use the mobile tablets believed they were fully invested in them and that they were supportive.

The elements of Rogers's Theory of Diffusion can help define why educators have or have not meaningfully integrated mobile tablets. One recommendation for future studies would be to establish a chart that describes the successful integration of mobile tablets. In other words, teachers can then evaluate their own techniques to determine if they are using the mobile tablets meaningfully. Then, that information can be compared with other special education teachers.

Implications for Social Change

As of 2015, there were 2.3 million mobile tablets in classrooms in the United States (Simba Information, 2015). This was 8.6% increase from 2015 and by 2016 half of all students were working one-on-one with mobile devices during the school day (Molnar, 2015). In the 1990-1991 school year there were 4.7 million students receiving special education services and during the 2012-2013 school year there were 6.4 million students receiving special education services (National Center for Education Statistics, 2015). As the number of special education students and mobile tablets increases yearly it would be

beneficial to utilize mobile tablets so that the gap between regular and special education can be lessened.

A positive social change can derive from this research by special education teachers learning from other teachers' experiences. For schools to obtain the resources needed to increase professional development opportunities they will need more money. This can come from grants, which is how most of the Participants' schools received their iPads and training. Others were granted more money from their districts after reevaluating the budget. With this information, special education teachers can learn to integrate mobile tablets to support special needs learners for success in the future. Administrators can use the theories of constructivism, andragogy, experiential learning theory, and Rogers' theory of the diffusion of Innovations to model professional development that can best help all special education teachers to integrate mobile tablets into their classroom.

Conclusion

When mobile tablets are integrated meaningfully and successfully, special education teachers can help lessen the academic gap between their students and students without special needs. Special education teachers reported having a variety of different experiences while integrating mobile tablets. These experiences were shaped based on their personal beliefs about learning and learning with technology, what occurred when they integrated mobile tablets into their classrooms, the specific technological issues related to mobile devices that came up before, during, or after integration, and the issues from outside their classroom that impacted the integration of the mobile devices.

This study could be used to further develop an understanding of how to help special education teachers to integrate mobile tablets meaningfully. Information can be derived on how to help teachers learn the information, how to provide great assistance for technology and instructional issues, and how to make sure students are actively engaged with the mobile tablets. There are also implications for future studies on how much student achievement changes, how much student engagement changes, and how to measure successful and meaningful integration.

All teachers in the study had the perception that they were successfully integrating the mobile tablets, but some did not understand the full value to them. This was shown through their lesson plans and their explanation of their use. Some teachers used these mobile tablets as a source for reinforcement for completed classwork. Others allowed students to use it during leisure times, such as recess. None of these activities utilized mobile tablets to their full potential. Other teachers, who had the same perception that they were successfully integrating actually were using them to supplement their teaching strategies to improve student learning.

However, these teachers also believed they could do even more with their mobile tablets and were constantly self-teaching new strategies by looking up information on-line and by taking on additional optional workshops. One participant stated, “The world is run by technology. Not having students complete tasks and learn through mobile tablets is doing them a disservice. We need to help students become successful members of society and to do that; they need to be able to use technology.”

It is recommended that future studies are conducted to develop the theories in this

research. For example, a quantitative study can be conducted to gather statistics on how many teachers with and without professional development are genuinely integrating mobile tablets. Quantitative studies can also be used to gather statistics on how many special education students' academic achievements and social skills improve after use of mobile tablets. The study can also be expanded by using more diversity related to gender and socioeconomic status.

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APPENDIX A: INTERVIEW PROTOCOL

Before the teacher teaches the lesson he/she has chosen for the study, I will interview the teacher asking the questions below.

Pre-Lesson Interview

Demographic Information:

1. How long have you been teaching?
2. How long have you been teaching special education students?

Interview Questions

1. How do you feel about using mobile tablets in your classroom?
2. Are there any benefits to using mobile tablets? If so, what are they?
3. Are there any negative aspects of using mobile tablets? If so, what are they?
4. What are some of the ways you anticipate changing the way you teach to use mobile tablets? If so, how?
5. What are the changes in your interactions with your students as a result of using mobile tablets in your classroom?
6. What are changes you anticipate in student motivation and engagement?
7. What types of professional development of any kind have you had?
8. What professional development was useful for your classroom? Why?
9. What professional development was not useful for your classroom in the professional development? Why?
10. Is there anything you would like to tell me that I did not ask about?

Post Lesson Interviews

After the lesson chosen by the teacher is taught I will schedule a second interview with the teacher to discuss the lesson integrating mobile devices. The questions for the semi-structured interview are below:

1. What happened in your lesson using mobile tablets?
2. What worked well during the lesson? Why?
3. What did not work as well as you anticipated in the lesson? Why?
4. How did you change your instructional practice as you integrated mobile tablet?
5. How did you change your interactions with your students as you integrated mobile tablets in your lesson?
6. What aspects of student motivation and engagement changed as you integrated the mobile tablet? Why?
7. Please describe a really good instructional experience you had using mobile tablets. If so, why was it a good experience?
8. Can you describe a negative instructional experience using the mobile tablet? If so, why was it a negative experience?
9. If someone wanted to utilize mobile devices in his or her classroom, what advice would you offer?
10. Is there anything else you would like to tell me?

APPENDIX B: INFORMED CONSENT FORM

Study Title: **Special Education Teachers' Experience with Mobile Tablet Integration**

Researcher: **Regina Malz**

Email Address regina.malz@waldenu.edu

Telephone Number: **201-317-3585**

Research Supervisor: **Dr. Donna Russell**

Email Address: **donna.russell@waldenu.edu**

You are invited to be part of a research study. The researcher is a doctoral learner at Walden University in the School of Educational Technology. The information in this form is provided to help you decide if you want to participate. The form describes what you will do during the study and the risks and benefits of the study.

If you have any questions or do not understand something in this form, you should ask the researcher. Do not sign this form unless the researcher has answered your questions and you decide that you want to be part of this study.

WHAT IS THIS STUDY ABOUT?

The researcher wants to learn about **the experiences of special education teachers integrating a mobile tablet (for example, an iPad) into their special education classrooms.**

The researcher also wants to know how teachers **describe their lived educational experiences and factors influenced their integration of mobile tablets.**

The researcher also **needs a copy of the lesson plan that uses the mobile tablets.**

WHY AM I BEING ASKED TO BE IN THE STUDY?

You are invited to be in the study because you are:

- a special education teacher of more than 2 years' experience
- are integrating mobile tablets into your classroom.

If you do not meet the description above, you are not able to be in the study.

HOW MANY PEOPLE WILL BE IN THIS STUDY?

About **8** participants will be in this study.

WHO IS PAYING FOR THIS STUDY?

The researcher is not receiving funds to conduct this study.

WILL IT COST ANYTHING TO BE IN THIS STUDY?

You do not have to pay to be in the study.

HOW LONG WILL I BE IN THE STUDY?

If you decide to be in this study, your participation will last about 3 hours.

- You will be asked to meet at **the local park two times** during the study for two interviews of approximately 1 hour. If the weather does not permit, we will meet in a room in the local library.

- You will be asked to email me the lesson plan for the lesson that integrates mobile devices.
- You will be asked to review your interviews taking approximately 30 minutes total through email.
- I will ask you to write your thoughts about using mobile tablets in a reflective journal and email it to me. This will take approximately 30 minutes.

WHAT WILL HAPPEN DURING THIS STUDY?

If you decide to be in this study and if you sign this form, you will do the following things:

- give personal information about yourself, such as **your name, years of teaching special education students.**
- answer questions during an interview about **your experience during the integration of mobile tablets into your classroom.**
- allow a researcher to observe you **while you answer questions during the interview process.**

While you are in the study, you will be expected to:

- Follow the instructions you are given.
- Tell the researcher if you want to stop being in the study at any time.

WILL I BE RECORDED?

The researcher will audiotape your interview. The researcher will use the audiotape to capture your answers in their entirety.

The researcher will only use the recordings of you for the purposes you read about in this form. They will not use the recordings for any other reasons without your permission unless you sign another consent form. The recordings will be kept for seven years and they will be kept confidential. The recordings will be destroyed after seven years.

WILL BEING IN THIS STUDY HELP ME?

Being in this study will not help you. Information from this study might help researchers help others in the future.

ARE THERE RISKS TO ME IF I AM IN THIS STUDY?

As part of the study you may be exposed to minimal psychological risks as you describe your lived educational experience. If at any time during the process you become too emotional or the interview becomes too difficult to continue participation in the study can be terminated by the researcher.

WILL I GET PAID?

You will be paid with a \$20 Starbucks gift card for participating in this study.

DO I HAVE TO BE IN THIS STUDY?

Your participation in this study is voluntary. You can decide not to be in the study, and you can change your mind about being in the study at any time. There will be no penalty to you. If you want to stop being in the study, tell the researcher.

The researcher can remove you from the study at any time. This could happen if:

- The researcher believes it is best for you to stop being in the study.
- You do not follow directions about the study.
- You no longer meet the inclusion criteria to participate.

WHO WILL USE AND SHARE INFORMATION ABOUT MY BEING IN THIS STUDY?

Any information you provide in this study that could identify you such as your name, age, or other personal information will be kept confidential. **A password protected file will be created to maintain data.** In any written reports or publications, no one will be able to identify you.

The researcher will keep the information you provide **on a digital hard drive (Microsoft One Drive), in a locked file cabinet, in a locked office that only the researcher has a key to in a personal office at the researcher's home** and only the researcher, researcher's supervisor, and dissertation committee will have access to your study data. Additionally, Walden University's IRB, or its designees may review your research records.

Only the researcher will have access to the tape recording of the interview.

Even if you leave the study early, the researcher may still be able to use your data. **Data will be used to identify that you were a participant in the study but did not complete the entire process. This is to ensure that an accurate number of participants are accounted for in the current study.**

Limits of Privacy (Confidentiality)

The researcher can assure you that she/he will keep everything you tell him/her or do for the study private. Yet there are times where the researcher cannot keep things private (confidential). The researcher cannot keep things private (confidential) when:

- The researcher finds out that a child or vulnerable adult has been abused.
- The researcher finds out that that a person plans to hurt him or herself, such as commit suicide.
- The researcher finds out that a person plans to hurt someone else.

There are laws that require many professionals to take action if they think a person is at risk for self-harm or are self-harming, harming another or if a child or adult is being abused. In addition, there are guidelines that researchers must follow to make sure all people are treated with respect and kept safe. In most states, there is a government agency that must be told if someone is being abused or plans to self-harm or harm another person. Please ask any questions you may have about this issue before agreeing to be in the study. It is important that you do not feel betrayed if it turns out that the researcher cannot keep some things private.

WHO CAN I TALK TO ABOUT THIS STUDY?

You can ask questions about the study at any time. You can call the researcher if you have any concerns or complaints. You should call the researcher at the phone number listed on page 1 of this form if you have questions about the study procedures, study costs (if any), study payment (if any), or if you get hurt or sick during the study.

Walden University Institutional Review Board has been established to protect the rights and welfare of human research participants. If you want to talk privately about your rights as a participant, you can call the Research Participant Advocate at my university at 612-312-1210.

- You have questions about your rights as a research participant.
- You wish to discuss problems or concerns.
- You have suggestions to improve the participant experience.
- You do not feel comfortable talking with the researcher.

You may contact the IRB without giving us your name. We may need to reveal information you provide to follow up if you report a problem or concern.

DO YOU WANT TO BE IN THIS STUDY?

I have read this form, and I have been able to ask questions about this study. The researcher has talked with me about this study. The researcher has answered all my questions. I voluntarily agree to be in this study. I agree to allow the use and sharing of my study-related records as described above.

By signing this form, I have not given up any of my legal rights as a research participant.

I will get a signed copy of this consent form for my records

Printed Name of Participant

Signature of Participant

Date

I attest that the participant named above had enough time to consider this information, had an opportunity to ask questions, and voluntarily agreed to be in this study

Printed Name of Researcher

Signature of Researcher

Date

DO YOU WISH TO BE AUDIOTAPED IN THIS STUDY?

I voluntarily agree to let the researcher audiotape me for this study. I agree to allow the use of my recordings as described in this form.

Printed Name of Participant

Signature of Participant

Date