SPECIAL EDUCATION TEACHERS' LIVED EXPERIENCES IN THE IMPLEMENTATION OF THE IPAD AS AN INSTRUCTIONAL TOOL FOR STUDENTS WITH INTELLECTUAL DISABILITIES

by

Takisha Salander Epps

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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ABSTRACT

The purpose of this transcendental phenomenological study was to describe the lived experience of 11 special education teachers**,** who implemented iPads as an instructional tool for elementary students with intellectual disabilities. This study was conducted in a North Carolina school district. The theories, which guided this study were Vygotsky's (1978) sociocultural theory and Piaget's (1954) cognitive development theory. Within the study, one central question and three sub-questions were used to guide the study. The research questions focused on special education teachers' experiences, as they implemented the iPad as an instructional tool for students with intellectual disabilities. To address these questions about the lived experiences of these special education teachers, data were collected via: (a) face-to-face interviews, (b) observations, and (c) focus groups. Analysis of data was conducted with the use of Moustakas' (1994) procedures, in order to analyze the data provide a full description of the phenomenon through the analytic techniques of: (a) bracketing, (b) horizonalization, (c) clusters of meaning, as well as (d) identification of textual and structural descriptions. Creswell (2013) noted that use of this process allows the author to determine the *essence* of the phenomenon. During this procedure, the technique of triangulation was used to increase the reliability of the study; in addition, reflexivity, external audit, and member checks were used to support the findings from the data analysis.

Keywords: intellectual disabilities, iPads, instructional tools, technology

DEDICATION

I thank my Lord and Savior, Jesus Christ, for guiding me through this educational journey. He has been my guiding light, endowing me strength and love to be successful. Throughout this progress, the Lord provided me daily wisdom and grace, believing "I can do all things through Christ which strengthens me" (Philippians 4:13, King James Version). I give Him the upmost glory and honor for teaching me that all things are possible in His name.

I dedicate this dissertation to my mother, who taught me the value of education and the importance of working for the things I desire in life. Her encouragement and motivation instilled in me a love and passion for learning and provided me a strong work ethic. Genetha Epps, thank you for believing in me and providing me confidence to do my best and to seek my ambitions. Mother, without your steadfast love, support, and inspiration, I would have never achieved this milestone in my life.

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List of Abbreviations

Assistive Technology (AT)

Education for All Handicapped Children Act (Public Law 94-142)

Elementary and Secondary Education Act (ESEA)

Free Appropriate Public Education (FAPE)

Individualized Education Program (IEP)

Individuals with Disabilities Education Act (IDEA)

Institutional Review Board (IRB)

Least Restrictive Environment (LRE)

More Knowledgeable Other (MKO)

No Child Left Behind (NCLB)

Public Law (PL)

Zone of Proximal Development (ZPD)

CHAPTER ONE: INTRODUCTION

Overview

Students with intellectual disabilities present a distinctive educational challenge and need for assistance to achieve their academic needs (Luckasson & Schalock, 2013). To support students to meet their academic needs, the Individuals with Disabilities Education Act (IDEA) was developed, which requires each student with an intellectual disability to have an individualized education program (IEP; Gartin & Murdick, 2005). During this development, the members of the IEP team must consider the use of assistive technology (AT) as they draft each student's IEP. The use of AT in special education services is identified as a potentially effective intervention strategy to aid students to achieve their educational goals and objectives (Bouck, Flanagan, Miller, & Bassette, 2012).

Educational settings have changed due to the integration of a new technological device identified as the iPad. The iPad is a mobile computing device, which holds great potential for the transformation of learning (Murray & Olcese, 2011). The first-generation iPad was released in April 2010. The second-generation iPad, identified as the iPad 2, was released in March 2011. Following the iPad 2, the third-generation iPad was released in March 2012. This was followed by the November 2012 release of the fourth- generation iPad referred to as the iPad 4. The iPad Air was released October of 2013. The newest additions of the iPad, the iPad Air 2 and the iPad Mini 3, was released in October of 2014 and the iPad Pro was released in November of 2015 (Apple, 2015).

It is essential for all students**,** regardless of their abilities**,** to demonstrate academic achievement. In the educational setting of students with intellectual disabilities, AT is identified as the primary instructional tool to support teaching and students' learning (Bouck et al., 2012).

In the 21st Century educational setting, also, it is important for all students, including students with intellectual disabilities**,** to develop techniques to capitalize on their natural interests and current use of technology such as iPads for educational purposes.

In this qualitative study**,** the author sought to describe the experiences of special education teachers, as they implemented the iPad for elementary students with intellectual disabilities. The overall purpose of this study was to examine the experiences of special education teachers**,** who implemented the iPad as an instructional tool to enhance the teaching and learning process for learners with intellectual disabilities. According to Riley (2013), there are studies in which the topic is limited to the area of special education teachers' experiences, as they implemented the iPad as an instructional tool for students with intellectual disabilities. Due to the limited research related to this topic, a gap was identified in the literature. Because of this gap, this author focused her study on special education teachers' experiences, as they implement the iPad for students with intellectual disabilities. The description of special education teachers' experiences was helpful for two reasons: (a) the understanding of the shared experiences of iPad use as an instructional tool, and (b) a description of the experiences that special education teachers shared as they implemented the iPad as an instructional tool to enhance teaching and learning for students with intellectual disabilities.

The purpose of this chapter was to introduce the current study, which provided a framework for the research. The following subsections were discussed in this chapter: (a) the background, (b) situation to self, (c) problem statement, (d) purpose statement, (e) significance of the study, (f) research plan**,** and (g) the research questions. Also, an overview of the literature is presented for the grounding of this research study.

Background

The iPad is one of the most of the most effective technological devices available today, and its use has transformed the way teachers and students communicate and use technology in the classroom (Davidson, 2012). Since the inception of the iPad in April 2010, textbooks have been replaced with electronic books and digital worksheets in many educational settings (Murray & Olcese, 2011). Numerous educators have implemented one-to-one programs with general education students by the development of instructional strategies to ensure students are on task, while they use technological devices such as the iPad in schools (Foote, 2012). In addition, the use of the iPad has provided the opportunity for many teachers to share resources and for several students to participate in-group lessons with use of an interactive whiteboard (Gentile, 2012).

The use of iPads has provided general education students with the opportunity to explore, collaborate, and communicate (Murray & Olcese, 2011). In addition, iPads can provide general education students the opportunity to connect, create, and engage in learning opportunities, which extends learning and assists learners to: (a) critically think, (b) analyze information, (c) solve problems, and (d) participate in decision making skills (Murray & Olcese, 2011). In addition, the use of IPads have intensified professional growth and leadership for general educators (Cumming, Strnadová, & Singh, 2014). The iPad has been used as an instructional tool by educators to facilitate student learning and had aided educators in the implementation and incorporation of age appropriate technology for learners. In educational settings such as the classroom, iPads can provide educators with the opportunity to: (a) individualize students' instructions, (b) replace textbooks in a cost effective method, as well as (c) improve communication among students, educators, and parents (Murray & Olcese, 2011).

The primary goal of educators is to provide learning opportunities for all students. There are over 7 million students with intellectual disabilities in the United States public schools (Davidson, 2012). Intellectual disability is formally known as mental retardation (Luckasson & Schalock, 2013). Historically, intellectual disability has been perceived as an infirmity that results from limited mental capacity, which appears before adulthood. It is characterized by significantly impaired cognitive functioning, and deficits in two or more adaptive behaviors. Students identified with an intellectual disability have certain limitations in: (a) mental, (b) communication, and (c) in the areas of daily living and social skills. These limitations cause students to learn and develop more slowly than their typical peers. According to Davidson (2012), even though students with intellectual disabilities process information more slowly, they can still benefit from some of the same teaching strategies used to teach general education students and students with other learning challenges.

Davidson (2012) reported that only a few researchers such as Abrahms (2011) and Fox (2010) have explored the use of iPads as an instructional tool for elementary students with intellectual disabilities. The findings from studies related to the use of the iPad as an instructional tool for students with intellectual disabilities (Bouck et al., 2012; Cumming & Rodríguez, 2013; Davidson, 2012; Kagohara et al., 2013; Miller, Krockover & Doughty, 2013; Rafool, Sullivan, & Al-Bataineh, 2012) indicate an important gap in the literature. This gap in the literature relates to the teaching and learning development of students with intellectual disabilities in the academic areas of spelling, reading, matching, and mathematics. Although a few studies (Fox, 2010; Rafool et al., 2012) has explored the use of iPads as an instructional tool for students with intellectual disabilities, it is hoped that special education teachers' experiences

will enhance the teaching and learning process using the iPad as an instructional tool for students with intellectual disabilities.

Because of this gap in the literature, it was important to describe special education teachers' experiences as they implemented the iPad as an instructional tool. Although special education teachers utilize a wide variety of experiences to educate students with intellectual disabilities, their experiences with the iPad as an instructional tool in the 21st Century educational learning environment is essential. The key focus of this study was to describe the special education teachers' experiences in their implementation of the iPad as an instructional tool to enhance teaching and learning for students with intellectual disabilities.

Situation to Self

An epistemological assumption led me to the conduct of this study**,** and my motivation was based on "how knowledge is known though the subjective experiences of people" (Creswell (2013, p. 20). In this epistemological assumption, it is assumed that knowledge is acquired through experts, and learning is a passive action. Therefore, this assumption influences the way special education teachers develop instructional decisions connected to the student's curriculum, pedagogy, and assessment. It is imperative for special education teachers to develop curricular techniques, which will bridge gaps in students' attainment of knowledge.

A social constructivism interpretive framework (Kamii & Ewing, 1996) was utilized to guide this study. The utilization of this framework provided me the opportunity to use broad questions, which allowed participants to construct their meaning of the experience (Creswell, 2013). This concept allowed me to interpret the meaning of participants' experience.

As a special education teacher, I have noticed that one of the most notable challenges in teaching students with intellectual disabilities is the ability to deliver instruction to students with

various levels and steps of learning. During this teaching and learning process, it has been observed by Ramorola (2013) that the use of iPads are of a benefit to general education students academically. Also, the iPads can be used to access a tremendous wealth of educational applications.

My educational philosophy is that all students have the ability to learn. I believe teachers produce knowledge and form meaning based upon their own experiences. Since it is the responsibility of a teacher to teach students, it is important for teachers to demonstrate their knowledge in the use of instructional tools to enhance students' academic practices. As a special education teacher, who educates students with intellectual disabilities, the iPad has been used as an instructional tool in my classroom. Therefore, it seemed important to describe the experience of other special education teachers in the North Carolina district**,** as they employed of iPads in their classrooms.

Based on the researcher's experiences as a special education teacher**,** who has implemented the iPad as an instructional tool in a classroom for students with intellectual disabilities, three basic assumptions were made in regard to this study. First, the students might break the very expensive iPads. Second, students may need extensive practice for meaningful iPad implementation. Third, teachers' participation in professional development opportunities does not necessarily prepare them to integrate the iPad into their curriculum. As this research develops, additional assumptions may occur.

Problem Statement

In the 21st Century, there have been rapid developments in regard to how educators instruct students and how they manage their classrooms. During this transformation, a growing body of research suggests that the use iPads can transform the way educators teach and the way

students gain knowledge (Foote, 2012; Gentile, 2012). For example, Jahnke and Kumar (2014) examined general education teachers' experiences as they implemented the iPad as an instructional tool. However, Davidson (2012) found little research about the use of iPads as an instructional tool for students with intellectual disabilities, both Abrahms (2011) and Fox (2010) recognized the use of iPads as an instructional tool. In addition, Fox indicated that many youth with intellectual disabilities continue to experience difficulty when they attempt to: (a) effectively participate in postsecondary education, (b) acquire meaningful employment, and (c) live independently in their communities. Abrahms observed that some teachers are still hesitant about the use of technology such as the iPad. Although both Abrahms and Fox indicated that iPads have been highly advertised as the next innovative assistive technology for learners**,** there has been little observed evidence to support the use of the device.

As this topic of the study has been explored and analyzed in the literature, there is only limited research on special education teachers' experiences**,** such as advantages and impediments in the implementation of the iPad as an instructional tool for students with intellectual disabilities (Riley, 2013). The impediments for special education teachers**,** who chose to implement iPads for students with intellectual disabilities**,** may involve lack of adequate time to: (a) implement devices; (b) keep abreast of updates, training opportunities, cost, device management; and (c) lack of employee consensus as the utility of the iPad (Gentile, 2012). Additional impediments may include: (a) lack of administrative/faculty support, (b) lack of awareness of how to use the iPad as an instructional tool, and (c) inexperience with use of the iPad. Also, negative perceptions toward the learning of new skills related to the iPad has been found (An & Reigeluth, 2011). The advantages for special education teachers**,** who implement iPads for students with intellectual disabilities**,** may require the provision of many new techniques to

enable their students in use of the iPad and access to more knowledge (Murray & Olcese, 2011). There is a clear need to identify special education teachers' experiences as they implement the iPad as an instructional tool for elementary students with intellectual disabilities.

Purpose Statement

The purpose of this transcendental phenomenological study was to describe the lived experience of 11 special education teachers**,** who implemented the iPad as an instructional tool for elementary students with intellectual disabilities at a North Carolina school district. The lived experiences of the special education teachers' experiences as they used the iPad as an instructional tool were generally defined as "an instrument used to enhance the teaching and learning process in an educational setting" (Helps & Herzberg, 2013, p. 233). It is hoped that this transcendental phenomenological study provided insight on special education teachers' experiences of use of the iPad as an instructional tool for elementary students with intellectual disabilities.

Significance of the Study

The findings from this study are of value to diverse learners, because the author shares the experiences of special education teachers as they implemented the iPad as an instructional tool for students with intellectual disabilities (Davidson, 2012). The use of IPads can serve as an equalizer for diverse students in educational settings (Davidson, 2012). As a special education teacher, I differentiate instruction for students with intellectual disabilities, all of whom have different needs and abilities. I have gained knowledge of how the iPad has used by regular education teachers to personalize and enhance teaching to each student. Due to this knowledge, I strongly feel that the use of iPads can be personalized to enhance teaching to students with intellectual disabilities.

It is hoped that research in this area has helped develop an understanding of this phenomenon by investigation of the methodologies utilized by teachers and the experiences they provide to instruct learners with intellectual disabilities. The findings from this study can add to the body of knowledge about special education teachers' experiences when they implemented the iPad as an instructional tool in their classroom. When the iPad is implemented as an instructional tool**,** knowledge can be related to the special education teachers' instructional strategies and students' learning experiences (Churchill, Fox, & King, 2012).

By this examination of special education teachers' lived experience in the implements of the iPad as an instructional tool, special education teachers can enhance their knowledge on how iPads can influence student learning. Abrahms (2011) and Fox (2010) acknowledged the iPad as the next innovative assistive technology for learners. The evidence to support the device is limited. According to Creswell (2013), bringing the experiences of the special education teachers to life and helping their voices to be heard is known as the qualitative nature and purpose of transcendental phenomenology. The identified gap in the literature revealed the need to provide special education teachers' experiences in their implementation of the iPad for students with intellectual disabilities, so their voices will be heard.

Research Questions

To improve instructional practice, teachers must first understand and have knowledge of the content they teach and the materials that are used as instructional tools. In this study, special education teachers' experiences in the implementation of the iPad as an instructional tool for students with intellectual disabilities are described. During this teaching and learning experience, teachers may find it hard to cope with and to implement the iPad into students' curriculum as an instructional tool if they demonstrate a lack of awareness of this new

technological device. The key to successful implementation of the iPad in education is the teachers' experience (Foulger el al., 2013). The following research questions were used to guide this current study.

Central Research Question: What are the special education teachers' shared experiences in their implementation of the iPad as an instructional tool for elementary students with intellectual disabilities?

Teachers' experiences are an essential component of their knowledge. The role of a teacher entails the provision of knowledge to others, which begins with understanding what is to be taught (Dean, Hubbell, & Pitler, 2012). In this study, special education teachers' experiences in their implementation of the iPad was described. This question allows for an examination of the experiences special education teachers had in their implementation of the iPad as an instructional tool. The examination of this central research question was important in order to identify the *essence* of the phenomenon (Creswell, 2013).

Sub-question One

How do special education teachers describe their experiences with the integration of iPads to meet the educational needs of elementary learners with intellectual disabilities?

The description of the special education teachers' experiences implementation of the iPad to meet the educational needs of elementary learners with intellectual disabilities are important because of the need to ensure academic effectiveness. During this process, it is vital that the integration of iPads be implemented in a way to enhance students' learning (Pei-Lin, Yukiko, & Emily, 2014).

Sub-question Two

How do special education teachers describe their technological awareness and their ability to integrate the iPad as an instructional tool for elementary students with intellectual disabilities?

It is important that special education teachers describe their technological awareness and ability to utilize the iPad as an instructional tool, to ensure that the iPad is used appropriately. Teachers**,** who describe their awareness and ability to integrate the iPad, can provide the special education teacher the opportunity to make the best use of locally available resources to ensure effectiveness, should they choose to use this device (Davidson, Richardson, & Jones, 2014).

Sub-question Three

How do special education teachers describe their instructional strategies for the use of the iPad as an instructional tool to enhance the teaching and learning process for elementary learners with intellectual disabilities?

Special education teachers describe their instructional strategies for use of the iPad as an instructional tool to enhance the teaching and learning process for elementary learners with intellectual disabilities and maintain that this technology is an essential component for teaching students. Various teaching strategies have been linked to the implementation of technology to teach students with intellectual disabilities. The importance of special education teachers, who employ instructional strategies for use of the iPad as an instructional tool, provide students with the opportunity to make it easier to implement a variety of teaching methods and techniques (Dean, 2012). Instructional strategies help students take more responsibility for their own learning, in addition to the development of learning environments, which are more interactive to integrate technology such as the iPad (Cumming, Strnadová, & Singh, 2014).

Research Plan

A transcendental phenomenological methodology was utilized in the conduct of this study. A qualitative research design was most appropriate for this study because the goal was to identify the experiences of teachers who integrate the use of iPads as an instructional tool with students with intellectual disabilities. According to Moustakas (1994), research should be focused on the wholeness of experience and a search for the essences of experiences. Creswell (2013) specified that is was important to capture the lived experiences of participants, to explain how and why a phenomenon occurs. This author reported about the special education teachers' experiences along with any barriers or challenges to the implementation of the iPad as an instructional tool. The principles of this research design were used to construct a complex all-inclusive representation by analysis of the participants' experiences in their implementation of the iPad as an instructional tool. This author examined the instructional strategies and consciousness of the special education teachers' experiences when they used the iPad as an instructional tool to enhance the teaching and learning process for learners with intellectual disabilities.

The research participants in this transcendental phenomenological methodology were special education teachers who used the iPad as an instructional tool for elementary students with intellectual disabilities in North Carolina schools. In depth face-to-face interviews, observations, and focus groups of the special education teachers, in regard to their experience in implementation of the iPad as an instructional tool for students with intellectual disabilities provided insight into the phenomenon of iPad implementation. The intended sample size for the interviews and observations was 10-15 special education teachers who used the iPad as an instructional tool. The focus group in this study consisted of three groups with 3-5 special

education teachers in each group. Qualitative measures were used to describe the special education teachers' proficiencies and knowledge of use of the iPad.

Prior to the collection of data, approval from the members of the Liberty University Institutional Review Board (IRB) was obtained. Next, approval from the research site was obtained, followed by consent forms for the participants. After data collection, the researcher used Moustakas' (1994) method and procedures for the conduct of human science research. During this process, horizonalization of the data as the clusters of meaning emerged, permitted the author to develop the "textural descriptions of the experience" (Moustakas, 1994, p. 118).

Delimitations and Limitations

Delimitations of this study are confined to the sample of special education teachers who educate students with intellectual disabilities in North Carolina schools. Only teachers who teach elementary students with an intellectual disability identified in the area of severe, profound, mild, or moderate, were included in this study. Students with a severe, profound, mild, or moderate intellectual disability are dissimilar in the way they learn, communicate, and adapt to instruction (Luckasson & Schalock, 2013). The researcher used criterion sampling to select participants who implemented the iPad as an instructional tool for students with intellectual disabilities. This author analyzed special education teachers' experiences as they used the iPad as an instructional tool for students with intellectual disabilities.

The focus of this study was on special education teachers, who implemented the iPad as an instructional tool. The lived experiences of the special education teachers and the students with an intellectual disability may not be transferable to other areas**,** due to teachers' years of experiences and the students' level of intellectual disabilities. Other limitations to this study include: (a) lack of motivation of special education teachers; (b) limited planning time to

develop individualized lessons to each student's needs; and (c) limited financial support to purchase new devices, applications, and assistive technology. Additional limitations were limited immediate technical support for full implementation of the iPad. While these limitations could not be controlled, the purpose of the study was to describe the special education teachers' use of the iPad and begin to understand their experience in their implementation of the iPad as an instructional tool for elementary students with intellectual disabilities.

Definitions

1. *Education for All Handicapped Children Act* - Education for all Handicapped Children Act is also referred to as Public Law (PL) 94-142. This act was passed in 1975 in order to ensure access to education for all students, including students with physical and mental disabilities (Connolly, 1989).
2. *Individuals with Disabilities Act (IDEA)* - IDEA is a statute which entitles all students with a disability to receive educational services to meet their unique needs (Zirkel, 2013).
3. *Individualized Education Program (IEP)* - An IEP is a document that is intended to direct and specify the provision of special education services to students with disabilities (Gartin & Murdick, 2005).
4. *Instructional Tool* - An instructional tool is a device that is used in the service of teaching to all students to facilitate learning (Cumming et al., 2014).
5. *IPad* - An iPad is a tablet computer produced by Apple (Apple, 2015).
6. *Knowledge* - The state of knowing and having an understanding in a specific area or topic (Roblyer & Doering, 2013).

7. *Least Restrictive Environment (LRE)* - The LRE is a principle designed to ensure that students with disabilities have the opportunity to be educated to the maximum extent with nondisabled peers (Alquraini, 2013).
8. *Proficiency* **-** Proficiency is the state of being skillful in an area (Roblyer & Doering, 2013).
9. Special Education**:** Special education is the practice of educating students with special needs (Moores, 2011).
10. *Technology* - Technology is a tool, device, or machine, which is used to solve practical problems (Bouck et al., 2012*).*

Summary

The technological instrument, known as IPads, are an instructional tool, which can have a powerful impact on learners in the educational setting, even with little research to support their effectiveness (Kagohara et al., 2013). IPads can be used to engage students in learning and provide them with access to new educational resources (Courduff, 2011). Description of the experiences of special education teachers, who implement the iPad as an instructional tool for students with intellectual disabilities, will help to close that gap identified in the literature. Moustakas (1994, p. 51) noted that "understanding experience is a knowledge of the essences" and Creswell (2013) noted how research can lead to improvement in practice, which can enhance students' learning. However, there is little information in the literature that is specific to the use of iPads as instructional tools in special education (Bouck et al., 2012; Cumming & Rodríguez, 2013; Davidson, 2012; Kagohara et al., 2013; Miller et al., 2013; Rafool et al., 2012). It is important for teachers to have knowledge about of use of the iPad as an instructional tool to enhance academic practices of students with intellectual disabilities.

CHAPTER TWO: LITERATURE REVIEW

Overview

The purpose of this phenomenological study was to describe the lived experiences of special education teachers' who implemented the iPad as an instructional tool for elementary students with intellectual disabilities. The aim of this study was to focus on and identify, the wholeness, and the *essence* of the participants' experiences (Moustakas, 1994)**.** These special education teachers took part in semi-structured interviews, focus groups, and observations. The insights, which emerged, were the richly definitions of the lived experiences of the special education teachers who used an iPad as an instructional tool for elementary students with intellectual disabilities. An intensive review of the related literature was conducted throughout during the course of data collection, analysis, and synthesis to ensure accurate insights of the special education teachers' experiences, who implemented the iPad as an instructional tool. This approach was selected because iPads are classified as a technology, which continually changes as innovations become more technologically advanced and are released to the public (Ensor & Elementary, 2012).

The iPad is a mobile computing device, which has several features that allow it to be integrated into educational settings in a variety of ways (Foote, 2012). The iPad has rapidly expanded into the general education curriculum as an instructional tool (Murray & Olcese, 2011). However, the use of the iPad as an instructional tool with students with intellectual disabilities has not been substantially explored (Rodríguez, Strnadová, & Cumming, 2014). In order to understand how special education teachers can effectively implement the iPad as an instructional tool with elementary students with intellectual disabilities, the focus of this

literature review is on special education teachers' experiences with it, as well as any barriers or challenges to the implementation of the device as an instructional tool.

Presented in Chapter Two is a theoretical framework, which includes the philosophical assumption that supported this study. Also, discussed in the theoretical framework are the constructivist theory (Nyikos and Hashimoto, 1997) and a brief background of the theorists in this field of study in order to detail the historical roots of constructivism. In addition, the pertinent related literature was included in this chapter to provide insights into the personal epistemological beliefs of special education teachers' teaching and students' learning with iPads. In addition, the related literature provides: (a) an historical background of iPads as a technology, (b) information related to teaching students with intellectual disabilities, (c) the integration of iPads as an instructional tool, and (d) teachers' perceptions of the use of the iPad as an instructional tool for students with intellectual disabilities. In conclusion, a summary, in which the key findings of this chapter are presented.

Theoretical Framework

Teachers educate learners with the tools essential for academic achievement (Giorgi, Roberts, Estepp, Conner, & Stripling, 2013), and it is important for teachers to fully understand the importance of their profession. Ertmer, Ottenbreit-Leftwich, Sendurur, and Sendurur (2012) emphasized that teachers must have a relationship with their students, in which communication is of the highest priority, is mutually reverential, and provides a trustworthy rapport with students. During this teaching experience, teachers enable knowledge and cause students to grow academically, personally, and ethically (Rescher, 2003).

Several theoretical foundations guided this study. The theory of knowledge and the constructivist theory is an essential philosophical assumption related to this study. Vygotsky

(1978) and Piaget (1954) are two theorists in this field of study. Understanding the theoretical foundation provided a direct connection to the framework to analyze the theories that account for the "existence of the phenomenon" (Moustakas, 1994, p. 112) of special education teachers, who use the iPad as an instructional tool.

Theory of Knowledge

The theory of knowledge is also known as epistemology (Audi, 2011). The term, epistemology, correlates to the value of human knowledge, which is known as a way to: (a) describe, (b) analyze, (c) examine historically the facts of knowledge, and (d) test the significance of knowledge. Primarily, the purpose of epistemology is to concentrate on understanding as well as focus on what makes information adequate or inadequate. At its essence, epistemology is used to examine the nature of knowledge and the progressions through which information is acquired and valued. Rescher (2003) emphasized the importance of teaching students the specific knowledge, which experts have discovered. In addition, it is critical to ensure that students are taught the specific skills, which experts employ in their discovery of knowledge.

Education is a unique experience for each learner. The epistemology of this unique learning experience occurs through the communication of knowledge from those who know to those who do not know (Rescher, 2003). This form of knowledge is identified as explicit and non-overlapping between disciplines. During this practice, students acquire knowledge as they form a genuine understanding, which limits incidental outcomes.

When applied to the area of education, special education teachers' experiences are identified as knowledge**,** which reflects a correspondence to reality (Creswell, 2013). In educational learning environments, it is the teacher's responsibility to teach students. During

this teaching and learning process, it is imperative for special education teachers to demonstrate knowledge of the content they teach. This teaching process can be facilitated through the incorporation of iPads as an instructional tool to teach students with intellectual disabilities.

The Constructivist Theory

The constructivist theory is the second theory that will guide this study. This theory is grounded in the work of Vygotsky (1978) and Piaget (1954). In the constructivist theory, gaining knowledge is an active process in which learners build new constructs ideas or concepts**,** which are centered on their existing and previous knowledge and experiences (Lee, 2012).

In an educational setting, essentially, learning is related to constructivism. During this process, knowledge and teaching are influenced by learning (Abbas, Lai-Mei, & Ismail, 2013). The constructivist theory implies that teachers produce knowledge and develop meaning based upon their experiences (Gilakjani, Leong, & Ismail, 2013). In the course of this progression, a variety of diverse teaching practices are utilized, which encourage teachers to use various techniques to stimulate knowledge and to reflect on the learner's current perceptions (Lee, 2012).

In a constructivist learning environment, when teachers use technology as an instructional tool, the active structure of knowledge is supported (Ertmer et al., 2012). Ermer et al. reported that teachers, who incorporated technology as an instructional tool**,** contended that "classroom teaching resources must become an integral part of the learning process" **(**p. 426). In turn, it is imperative for teachers to actively use the additional teaching resources to facilitate learning for students with intellectual disabilities.

The theoretical frameworks, which guided this study, were based on in the work of Vygotsky's (1978) social development theory and Piaget's (1954) cognitive development theory. Vygotsky's social development theory has influenced methods of teaching and learning in regard

to social interaction, which De León (2012) maintained it as an essential component in the development of cognition. Vygotsky (1978) stated that "the most significant moment in the course of intellectual development, which gives birth to the purely human forms of practical and abstract intelligence, occurs when speech and practical activity, two previously completely independent lines of development, converge" (p. 24).

A common teaching strategy supported by Vygotsky (1978) is recognized as project learning. "The use of project learning develops an interpersonal connection, which is concentrated on collaborative preparation, and instruction is linked to support learners to develop a meaningful moment in order to lead to powerful feedback and reflection" (p. 56). This concept supports teachers in their efforts to produce knowledge and develop the meaning of their role to assist learners and accomplish their learning potential to an intellectual maximum (Gredler, 2012; Joseph & Ramani, 2011). In this framework, project learning aligns with Vygotsky's beliefs related to social relationships and cultural contexts, and the teacher's role is to structure interactions and develop instruction into steps that are achievable for the learner (Joseph & Ramani). In this teaching strategy, the special education teacher's experiences are used to engage students, which allows the special education teacher to construct meaning through the implementation of the iPad as an instructional tool for students with intellectual disabilities to develop an effective understanding of the concept.

The zone of proximal development (ZPD) is an important principle of Vygotsky's (1978) work. This acronym, ZPD, is identified as the tasks that a learner can perform with the guidance of others (Nyikos & Hashimoto, 1997). The ZPD in educational settings is related to the concept of scaffolding. During this process, teachers are accountable for the structuring of interactions and development of instruction in small steps based on tasks the learner can independently

accomplish (Khodamoradi, Iravani, & Jafarigohar, 2013). According to Vygotsky, when students are in the ZPD during learning, delivery of the appropriate assistance will provide students a *boost* to achieve the task.

The implementation of technology as an instructional tool was described by De León (2012) as a strategy to scaffold learning, which connects to Vygotsky's (1978; ZPD) concept. Scaffolding is acknowledged as an important learning strategy for yielding learning success. During the teaching and learning process, scaffolding is an essential role in Vygotsky's ZPD as it guides the development of knowledge, which is recognized as a vital growth process (De León, 2012).

Vygotsky's (1978) concept, more knowledgeable other (MKO), is related to this study, in that, it refers to the teacher, who has a better understanding or a higher ability level than the learner, in regard to a specific task, procedure, or concept (Cicconi, 2013). Vygotsky's theory is focused on the actual mechanism, which relates to constructivism and identifies mediation as its key proponent. Vygotsky believed that the learning experienced by a student was related to the social interactions from skilled tutors, such as a teacher. Vygotsky points to the role of a MKO in the demonstration of technology, concepts, values, and strategies, which learners internalize and learn from a person, who has a higher ability level than the learner (Cicconi). Vygotsky identified the MKO concept as a collaborative or cooperative dialogue. These findings infer an alignment with Vygotsky's ZPD and MKO, which illustrates the gap between human thoughts developed from teachers' experiences in the implementation of the iPad as an instructional tool for students with intellectual disabilities.

The second theoretical framework that guided this study is based in Piaget's (1954) cognitive development theory. Piaget maintained that humans must *construct* their own

knowledge. Humans build their knowledge through, and experiences enable humans to create schemas. A schema is a set of linked mental representations of the world, which we use both to understand and to respond to situations (Piaget, 1954).

Piaget (1954), author of the cognitive development theory, was one of the most influential researchers in regard to child development. His theory has become the foundation in the comprehension of childhood mental development (Awwad, 2013). During a child's development, he or she formulates an understanding of the outside world; subsequently, when the child's experience diverges between learned knowledge and what is discovered in the environment, the child experiences dissonance between the known and new knowledge. This experience of dissonance requires resolution before new learning. Piaget conceptualized the stages of a child's *thinking* and how it relates to sequential childhood development in four cognitive stages (Parkay, Hass, & Anctil, 2010). Piaget's describes a progressive reorganization of mental processes through maturation and experience.

Piaget's (1959) theory is used to support the constructivist theory (Nyikos and Hashimoto, 1997), in which knowledge is acquired as cognitive developmental takes place. *Stage theory* consists of several stages of development. During each stage, learners experience challenging situations, which must be addressed by increased mental abilities (Ramorola, 2013). Once the challenge is successfully resolved in that stage, the student progresses to the next stage of cognitive development.

This study is based on Piaget's (1954) cognitive developmental theory**,** in that, teachers are at the stage of nature of knowledge**,** and they gradually acquire, construct, and utilize knowledge to facilitate instruction with the use of the iPad. During this stage, teachers identify commonalities between problems and make generalizations, inferences, and conclusions (Piaget,

1954). Effective implementation of the iPad as an instructional tool consists of special education teachers, who learn new experiences and integrate those experiences into existing concepts to form meaningful knowledge (Zimmerman, 1982).

Piaget (1954) proposed that humans generate knowledge and meaning from an interaction between their experiences and their ideas (Awwad, 2013). According to Piaget, a teacher's role is to lead learners to knowledge**,** and a learner's role is to demonstrate proficiency to acquire the knowledge (Awwad, 2013). Also, Piaget emphasized the use of dialectical reasoning as a means to acquire knowledge. Piaget maintained that teachers provide a model of the integration of knowledge and virtue as two fundamentals of professional life (Kamii & Ewing, 1996). Piaget identified two types of knowledge, formal knowledge and knowledge of the procedure, that is, the *mind* (Kamii & Ewing, 1996, p. 260). According to Zimmerman (1982), accommodation and assimilation are identified as key components in Piaget's cognitive development theory, which resolves dissonance in order to construct an individual's new knowledge.

Piaget's (1954) theory of instruction is focused on how knowledge acquisition is a continuous acquisition of self-construction. Piaget believed that knowledge is the ability to transcend what one can demonstrate in regard to knowledge of into a more comprehensive understanding of the material and the experiences in which the material is presented (Kamii & Ewing, 1996). Piaget recognized the role of a teacher as an imperative generalization. Piaget maintained that teachers should be able to teach in an educational setting that consists of interesting effects; in addition to the exploration of teaching strategies, which will encourage learners to develop their own schemas (Zimmerman, 1982). Instruction is based on the student's ability to assimilate and accommodate new experiences. These findings postulate an alignment

with Piaget's theory of instruction and theory of learning, illustrating the gap that relates to teachers learning new experiences and integrating experiences into existing concepts to form meaningful knowledge by way of implementing the iPad as an instructional tool for elementary students with intellectual disabilities.

Related Literature

In this section, the focus is on the existing literature about special education teachers' experiences**,** when they implemented the iPad as an instructional tool. This literature provided is a support for the significance of this study. The nature of special education teachers' experiences was analyzed, including identified benefits and limitations. This was followed by related literature about: (a) students with intellectual disabilities, (b) teaching students with intellectual disabilities, (c) federal mandates for teaching students with intellectual disabilities, (d) educational services for students with intellectual disabilities, (e) differentiated instruction for student with intellectual disabilities, (f) the evolution of classroom technology, (g) the history of technology for students with intellectual disabilities, (h) learning for students with intellectual disabilities, (i) the integration of technology in educational settings, (j) the iPad as assistive technology, (k) teaching and learning with iPads, (l) the integration of iPads as an instructional tool, (m) the barriers or challenges of technology integration in schools, and (n) teachers' perceptions of technology integration. The chapter concludes with a summary to synthesize the literature and identification of the gap concerning special education teachers' experiences, as they implemented the iPad as an instructional tool for elementary students with intellectual disabilities.

Students with Intellectual Disabilities

The diagnosis of intellectual disability is characterized by a person, who has a combination of deficits in both intellectual function and in adaptive behavior (Parmenter, 2011). Parmenter noted that intellectual disability occurs when there are limits to a person's ability to gain knowledge at an expected level as well as difficulty in the performance of functional daily tasks. Intellectual disability is present before the age of 18. Students with an intellectual disability find it more difficult to learn and process new information and manage the complex tasks required for everyday living (Ellis, 2013). Also, Ellis found that the severity of a student's intellectual disability is displayed by a discrepancy between the individual's proficiency to gain knowledge across the domains of conceptual, social, and practical life skills.

It is difficult for students with intellectual disabilities to function in two or more areas of adaptive skills, such as: (a) communication, (b) socialization, (c) daily living, or (d) behavior (Luckasson & Schalock, 2013). Formerly, the term, intellectual disability, was referred to as mental retardation. This was characterized by a combination of deficits in both cognitive functioning and adaptive behavior. According to Luckasson and Schalock, students**,** who are intellectually disabled**,** have cognitive functioning limitations that emotionally influence their: (a) attention, (b) memory, and (c) their ability to think abstractly and make generalizations from one setting to another. Students with these limitations acquire knowledge more slowly than others, and it is difficult for them to perform tasks, which may require the implementation of instructional tools to facilitate learning (Luckasson & Schalock,).

Learning for Students with Intellectual Disabilities

However, students with intellectual disabilities are able to learn in educational settings to acquire knowledge (Moores, 2011). Because learning plays a vital role in the success of students with intellectual disabilities, Ekeh and Oladayo (2013) stated, "Learning is indispensable to students' academic achievement" (p. 146). They identified learning as the aptitude to process and comprehend concepts.

Allor, Mathes, Jones, Champlin, and Cheatham (2010) reported that students with intellectual disabilities find it difficult to: (a) listen, (b) reason, (c) memorize, (d) attend to tasks, (e) concentrate on relevant stimuli, and (f) process visual and/or auditory information. According to Allor et al., these perceptual and cognitive processing difficulties are assumed to be underlying reasons why students with intellectual disabilities encounter academic difficulties. Also, Allor et al. reported that learning is strongly associated with the students' severity of intellectual disability.

However, with the appropriate supports in place, students with intellectual disabilities can achieve a high quality education. According to the Allor et al. (2010) study, curriculum and instruction must be carefully modified to assist students' with intellectual disabilities, and it is requisite if they are to reach their full potential. The use of modified curriculum and instruction can provide these students with innovative tools for effective instructions along with efficient instructional strategies. According to Abrahms (2011), all students demonstrate the ability and the right to gain knowledge through the use of effective instructional strategies. Abrahms' study was focused on the learning of students with intellectual disabilities through the use of differentiated instruction.

Andronic and Andronic (2012) found that students with intellectual disabilities do not process information in the same way as their peers, who receive general education. In addition, students with intellectual disabilities learn best when their learning style is identified. These authors emphasized that special education teachers should have knowledge of their students' learning styles. This enables teachers to implement appropriate instructional tools such as iPads in the educational classroom.

Abbas, Lai-Mei, and Ismail (2013) focused on the importance of special education teachers' experiences as they implemented the iPad as an instructional tool to facilitate learning to accomplish academic needs. Also, they emphasized that special education teachers' need to have specific experience with the implementation of the iPad as an instructional tool. With use of the iPad, students with intellectual disabilities can learn in the style that best benefits their preference, even though these pose unique challenges to their teachers. Abbas et al. maintained that the importance of teachers' ability to identify students' learning style, in order to facilitate their learning process; when students' academic strengths are discovered, teachers can implement the iPad as an instructional tool.

Educational Services for Students with Intellectual Disabilities

Students who require special education services linger significantly behind grade-level peers in developing academic skills (Davidson, 2012). Consequently, students with intellectual disabilities are likely to be significantly delayed in acquiring knowledge and developing basic academic skills with the use of technology (Courduff, 2011). According to Davidson (2012), students with intellectual disabilities have delays in cognitive development that influence the acquisition of academic skills.

According to Downing (2010), learners requiring special education services demonstrate the ability to gain knowledge from the general education curriculum. They however, learn and process information more slowly than typical students. Downing's (2010) research explained that students requiring special education services are granted access to a free appropriate public education (FAPE) in the least restrictive environment (LRE) that is appropriate depending on their individual needs thru the Individuals with Disabilities Education Act (IDEA). Research revealed that the academic skills of students requiring special education services could be improved when students are provided with appropriate supports and included in a general education classroom with age-appropriate peers for a large part of the school day (McLaughlin, 2010).

Teaching Students with Intellectual Disabilities

Even more than before, in this 21st Century, advanced teaching methods must be used in the teaching of students with intellectual disabilities. According to the U.S. Department of Education Website Ed Data Express, 12.1% of the U.S. nation's K-12 students were identified with an intellectual disability in 2012-13 ("National Center for Intellectual Disabilities," n.d.). In educational settings, it is important for special education teachers to have access to the most up-to-date cutting-edge instructional tools to facilitate learning for students with intellectual disabilities. Currently, there has been much written in the media about the use of mobile devices, like the iPad, and its use in instructive settings (Chien, 2013).

Gu, Zhu, and Guo (2013) examined the use of an iPad as an instructional tool to teach students with intellectual disabilities. They found that, just as general education students utilize mobile devices such as an iPad in educational settings, also, students with intellectual disabilities

could use the iPad in an academic setting. Rodríguez et al. (2014) reported that there is no empirical evidence about whether use of an iPad will result cognitive improvement.

Brownell, Smith, and Crockett (2012) reported all students have the ability to learn. Brownell's et al. (2012) research identified learning as a form of acquiring knowledge, which can be enhanced by a teacher's experience. Brownell et al. (2012) indicated that teachers' experiences play a major role in facilitating learning for students with intellectual disabilities. These authors stressed the importance of special education teachers employing the use of the iPad as an instructional tool. Brownell et al. (2012) also stressed the importance of special education teachers implementing effective teaching strategies to facilitate learning for students with intellectual disabilities. The following teaching strategies were identified as effective approaches for implementing an iPad as an instructional tool for students with intellectual disabilities: (a) setting goals that are most important for the learner, (b) teaching one concept at a time, (c) teaching students in small groups or in a one-on-one setting, (d) providing students the opportunity to practice skills, (e) using cues such as gestures and prompts to guide students' correct response, (f) supporting memorization and sequencing by teaching tasks one step at a time, and (g) implementing instructional tools that motivate students to learn (Brownell et al., 2012).

A study conducted by Green (2014) found that special education teachers who incorporated teaching strategies in their curriculum reported successful technology integration attempts when using the iPad as an instructional tool. Green's (2014) study found the use of effective strategies important. This author identified teaching strategies as one of the key components used for implementing instructional tools with students with intellectual disabilities. Green's (2014) research found that teachers' experiences provide them the knowledge and the

opportunity to adapt their instructions to accommodate students' instructional needs. Green (2014) recognized teachers adapting students' instructions to accommodate their instructive needs as a critical teaching component. This was an effective teaching practice for implementing the iPad as an instructional tool with students with intellectual disabilities.

In a similar study conducted by Roth (2014), a researcher identified teachers' experiences as effective teaching practices. According to Roth (2014), effective teaching practices provided educators the opportunity to successfully implement and exploit meaningful technology instruction in educational settings to address students' instructive needs. Roth's (2014) study also discussed the importance of technology used as instructional tools and students must be familiar with this practice. Instructions to students must be clear and concise. Accommodating students with intellectual disabilities through the use of the iPad consists of appropriate assessments and instructional materials, along with iPad applications that are comprehensible and synchronized with the current trends in technology (Cumming et al., 2014).

Federal Mandates for Teaching Students with Intellectual Disabilities

Federal policies about teaching students with intellectual disabilities have had major change during the past century. A century ago, many students with intellectual disabilities received little, if any, formal education (Luckasson & Schalock, 2013). Today, students with intellectual disabilities are entitled to services provided by the Education for All Handicapped Children Act (Public Law 94-142), which was authorized in 1975 (Zirkel, 2013). This law mandates that students with intellectual disabilities are granted access to a free and appropriate public education (FAPE) in the least restrictive environment (LRE), dependent upon their individual needs through the Individuals with Disabilities Education Act (Zirkel, 2013).

In the past, learners with disabilities were virtually ignored and denied access to formal education (Zirkel, 2013). However, it is the right for all students to have the opportunity of an optimistic learning experience. During this learning experience, a free and appropriate education is mandatory for all students. In 1975, The Education of all Handicapped Children Act (Public Law 94-142) was a landmark legislative act of Congress, which supported and protected the rights of learners with intellectual disabilities (Connolly, 1989). Many laws have been implemented to put the final touches on an appropriate education for students with intellectual disabilities. The No Child Left Behind (NCLB) Act, Section 504 of the Rehabilitation Act, Individual with Disabilities Education Act (IDEA), and the Assistive Technology Act of 2004 are the most frequently used special education laws related to teaching students with intellectual disabilities (Ellis, 2013).

The NLCB Act, Public Law (PL) 107-110, is a general education law that amends the Elementary and Secondary Education Act (ESEA) of 1965 and has initiated comprehensive changes to the educational systems (Dee & Jacob, 2010). These Acts provide funding in the educational systems for professional and instructional development for teachers, as well as the provision of educational resources for all K-12 grades (Dee & Jacob). Section 504 of the Rehabilitation Act is a law that prohibits discrimination on the basis of disability (Smith & Patton, 1998). According to Smith and Patton**,** Section 504 of the Act plays an essential role in the education for students with intellectual disabilities**,** who may not qualify for special education services under IDEA. Section 504 of the Rehabilitation Act ensures that students with a disability have equal access to an education, including accommodations and modifications (Smith & Patton).

The IDEA is a special education law, which guides how the administrators of educational systems make available early intervention, special education, and related services to entitled individuals identified with disabilities (Ellis, 2013). This law guarantees that students with disabilities are monitored, assessed, and provided assistance in all areas of education (Ellis), and it is required that schools make available a free appropriate public education (FAPE) in the least restrictive environment (LRE) appropriate to the needs of students with intellectual disabilities (Alquraini, 2013; Zirkel, 2013). It is stated in IDEA that "school districts must consider assistive technology (AT) for students with intellectual disabilities" (Moores, 2011, p. 523). This law supports the use of AT devices and services to encourage independence in addition to the support of students' maximized access to learning (Moores, 2011).

The final law regarding intellectual disabilities is identified as the Assistive Technology Act of 2004 (Bouck et al., 2012,). The Assistive Technology Act of 2004 provides accessibility to individuals with disabilities. This amendment to the Technology Act affirms that technology is a valuable tool, which can be used to improve the abilities of individuals with intellectual disabilities. The Assistive Technology Act makes sure individuals with intellectual disabilities have access to technology devices and services (Ellis, 2013).

Differentiated Instruction for Students with Intellectual Disabilities

Differentiated instruction is a method of instruction used in educational settings, which provides educators with the opportunity to think about teaching and learning (Kelly, 2013). Kluth (2013) described differentiated instruction as a process, which can be used with learners of divergent abilities to be taught in an effective way. During this approach, the use of differentiated instruction for students with intellectual disabilities is based on best practices to maximize students' learning. Kluth maintained that differentiated instruction is developmentally

appropriate. He noted that the focus of differentiated instruction is on how content is taught in order to address students with unique needs.

Dixon, McConnell, and Hardin (2014) indicated that the differentiation of instruction in educational settings can be accomplished when educators know the students they teach. They emphasized that is important that educators develop a solid rapport with the students they teach. This allows the teacher to identify students': (a) strengths, (b) weaknesses, (c) likes, (d) dislikes, (e) personality traits, (f) preferred learning styles, and (g) skill levels. When teachers understand that their students are unique and use these exceptional qualities, they can assist them in learning and unlocking their innate abilities. This allows students to flourish especially with the use of technological devices as instructional tools (Dixon et al., 2013).

Special education teachers can support the learning of students with intellectual disabilities through the application of differentiated instructions (Kluth, 2013). During this process, special education teachers implement an altered approach for teaching the curriculum (Brownell et al., 2012). When teachers can customize the curriculum to students' needs, interests, and strengths, they can provide a flexible approach to good teaching (Dixon et al., 2013). Therefore, the incorporation of technology, such as the iPad, in the curriculum of students with intellectual disabilities will allow educators to differentiate and individualize learning (An & Reigeluth, 2011). Also, An and Reigeluth (2011) asserted that the integration of iPads as an instructional tool in the curriculum of students with intellectual disabilities will provide special education teachers the opportunity to develop innovative and adaptive programs, which will facilitate learners' academic needs.

The Evolution of Classroom Technology

Over the past few years, the use of technological technology has grown exponentially. Instructive technology is identified as anything, which has been made by humans, in order to develop an advantage from available resources to simplify tasks (Xiaoqing, Yuankun, & Xiaofeng, 2013). Initially, in educational settings, instructive technology was consisted of the use of overhead projectors and books. Most recently, computer type tools have been developed, including, iPads (400 years of school history, 2002). In 1925, Thomas Edison predicted that books will become obsolete in educational settings and replaced by the instruments of instructive technology (Evolution of Classroom Tech., 2011-2013; Gervais, 2012).

The Horn-Book

During the 16th Century, teaching materials, such as paper and books, were expensive and difficult to acquire (Miranker (2008). During this period, educators had to be creative and create their own instructional materials to facilitate learning in the areas of reading and writing. In the mid 16th Century, the hornbook was developed to serve as an instructional tool (Evolution of Classroom Tech., 2011-2013). Miranker (2008) observed that the hornbook was developed to enable literacy instruction.

Miranker (2008) described the hornbook as a wooden paddle, which was carved with the alphabet, the numbers from zero to nine, and religious verses. More intricate hornbooks were designed with a sheet of parchment paper pasted to one side of the surface. Also, some hornbooks were made from materials, such as metal and silver, and a few were made with alphabets etched into ivory. The most unique hornbook was made from gingerbread, which was used as an edible incentive for students (Miranker, 2008). Hornbooks were widely used in the Colonial Era of the U.S. The hornbook was not a book. The hornbook was develop from a

sheet of parchment or paper with the alphabet, phonics and a prayer printed or in manuscript, mounted on a small, wooden, paddle-shaped board and protected by a thin sheet of transparent animal horn that was attached with metal strips and nails (Miranker, 2008).

The earliest hornbook was found behind the paneling of a farmhouse in Surrey (Miranker, 2008). In the mid 1800s, the Middleton Hornbook, also known as the Bateman Hornbook, was discovered. This latter hornbook was found in the thatch of an old farmhouse (Miranker). Reportedly, hornbooks became outdated and were no longer in demand when spelling-books became cost effective and more universal (Miranker, 2008).

The Ferule

In the mid 18th Century, ferules were implemented in many educational settings (Evolution of Classroom Tech., 2011-2013). A ferule is an instrument designed as a long, slender flat piece of wood, which resembled a ruler (Gervais, 2012). This instrument was used as a manual pointer; the teacher used it to manually point at specific places and words on a blackboard or a map (Gervais, 2012). According to Gervais, pointing is a prompt to help enhance learning in educational settings.

Magic Lanterns

In the late 17th Century, the magic lantern was developed and often used for educational and entertainment purposes (Evolution of Classroom Tech., 2011-2013). The magic lantern was a precursor of the modern slide projector, and it was used to project images printed on sheets of glass plates (Gervais, 2012). The magic lantern has been used in educational settings to teach students with the use of large, brightly colored, animated images for students to view.

School Slate

In the late 18th Century, school slates were incorporated into educational settings as an instructional tool used to practice writing and arithmetic (Evolution of Classroom Tech., 2011-2013). The school slate is a thin piece of flat material, which had dimensions of either 4x6 or 7x10 inches (Streep, 2001), and Henry Slade was credited with this invention. According to Streep, the school slate was used because paper was expensive. Use of the school slate was phased out in the 20th Century as paper production became affordable. Slate pencils were most common used to write on the schools' slate. However, chalk was also available, which provided a more pleasant sound. All information written on the school slate were easily erasable (Streep, 2001).

The Chalkboard

The chalkboard was invented by James Pillans in the late 18th Century (Evolution of Classroom Tech., 2011-2013). The chalkboard is made of a smooth, thin sheet of black or dark grey slate stone (Ergo in Demand, Inc., 2000-2013). This instructional teaching tool is described as an economical, reusable writing surface on which text or drawings are made with the use of chalk. According to the authors of Ergo in Demand, Inc., the blackboard was recognized as the single most important educational tool in schoolrooms, prior to the technological innovations of recent years. In 1844, the chalkboard was recognized as a classroom necessity by The Council on Education in England (Krause, 2000). According to Krause (2000), the chalkboard is an ingenious teaching tool. This author identified the chalkboard as a significant contribution to technology, which is universally accepted, immediately adopted, and widely applauded. Chalkboards are still present in many educational settings today.

The Pencil

The first quality pencil was invented in 1795 by Nicholas Jacques Conte, an officer in the army of Napoleon (Gervais, 2012). A pencil is a writing instrument made of graphite mixed with a clay binder, which is used to produce writing on paper and can be easily erased. The pencil is one of the oldest writing utensils used in educational settings and is still popular in many classrooms today. In the late 19th Century, pencils and paper became widespread. During this development, pencils replaced individual school slates and some chalkboards (Ergo in Demand, Inc., 2000-2013).

The Stereoscope

In 1838, Sir Charles Wheatstone invented the first original stereoscope (Evolution of Classroom Tech., 2011-2013). A stereoscope is a photographic viewing device that uses human binocular vision to create illusions of three-dimensions (Stereoscope, n.d.). This instrument was used as an instructional tool in schools to illustrate points made during lectures.

Film Projectors

Filmstrips were used in the early 19th century in classrooms to show instructive lectures and are perceived as the forerunners of videocassettes, digital videodisc, and Blu-ray Technology (Gervais, 2012). Use of this device was tool to allow educators to present visual instructive lectures and to pause lectures for class discussions by turning a knob (Gervais). According to Gervais, film projectors became obsolete after the invention of videocassette recorder in the 1980s.

The Overhead Projector

In the mid 19th Century, Roger Appledorn invented the overhead projector (Evolution of Classroom Tech., 2011-2013). Although, according to Zafra (2009), the basic concept of the

overhead projector was already known and used years in advance. An overhead projector is a modified slide projector, which displays images to viewers. Zafra described the overhead projector as an instructional tool that allowed educators to create lessons on pre-printed transparencies, which could be enlarged easily. The use of overhead allows educators and students to take notes more easily.

Mimeograph

The first mimeograph copying system was invented by Alfred Blake Dick in 1887 (Evolution of Classroom Tech., 2011-2013). The mimeograph was a copying technology that was used in schools before photocopying became available and reasonably priced in the 20th Century (400 years of school history, 2002). The mimeograph was a hand-cranked operated technological device, which allowed educators to multiply copies of tests or work sheets.

Reading Accelerators

Reading accelerators were developed in 1957 (Evolution of Classroom Tech., 2011-2013). The reading accelerator was used to help students to improve their literacy skills by reading more efficiently (Gervais, 2012). This instructional tool was designed to make print in books easier to follow. They are designed with an adjustable metal so students can hold down a page to be inserted. Also, pages can be positioned to move up and down as they are read.

Skinner Teaching Machine

The teaching machine was invented by B. F. Skinner in 1957 (Evolution of Classroom Tech., 2011-2013). This was a mechanical device, which was designed to administer a curriculum of programmed instruction (Vargas, 2005) and allowed students to progress at his or her own pace through a well-organized program of instruction. Skinner's teaching machine provided the opportunity to be attuned and enhanced based upon the students' performance.

Photocopier

In 1937, Chester Carlson invented the photocopier (Evolution of Classroom Tech., 2011-2013). This instrument became commercially available to businesses, government offices, and schools in the 1950s, and it is an electrically operated machine, which that uses a photographic method to produce quick copies of written documents, printed materials, and visual images ("400 years of school history," 2002). Photocopiers are well-known inventions of the 20th Century and, currently, are still used in many businesses, government agencies, and schools.

Filmstrip Viewer

The filmstrip viewer was a forerunner to the iPad (Evolution of Classroom Tech., 2011-2013), which became available in the mid 19th Century. It is a shared form of still image instructional multimedia, and its use allows educators to show educational films and lectures (Yollis, 2011). According to Yollis, filmstrip viewers can still be found in some educational settings; however, this device was overtaken at the end of the eighties by videocassettes and digital video discs.

Electronic Calculator

The calculator is a hand-held portable device, which is used as a learning tool for performing basic arithmetic and mathematical operations ("Hand-Held Calculators," 2005.) Paper and pencil calculations were used in schools prior to the implementation of the hand-held calculator. According to the authors of Hand-Held Calculators, they are a technology, which was used as a tool to help learners solve problems and improve their attitude toward mathematics.

The History of Technology for Students with Intellectual Disabilities

It is essential for all students in the 21st Century to be provided with the opportunity to demonstrate knowledge and skills to succeed as effective citizens, workers, and leaders in society today. Authors of The *Partnership for 21st Century Skills* (2011) encouraged educators to sufficiently prepare students for academic achievement. Also, they encouraged educators to integrate technology into the curriculum to provide advanced teaching and learning tools that will cultivate knowledge that is appropriate for the 21st Century.

Over time, the use of technology has become increasingly essential and accepted devices in educational settings to instruct students with intellectual disabilities (Davidson, 2012). Although the use of technological devices can support students' development, special education educators have noted challenges in the implementation of technology such as an iPad.

As the 21st Century progresses, the use of technology will become even more important to society. According to Paré (2012), technology can be used to: (a) enhance academic development, (b) impact language acquisition, (c) provide greater access to information, (d) support learning, (e) motivate students, and (f) enhance their self-esteem. The presence of technology has markedly changed the way humans live and gain knowledge, from a one-size-fits-all education to a more personalized approach, which allows students to be taught at different speeds with tailored lessons to facilitate learning.

The use of technology to educate students with intellectual disabilities has an extensive history (Stewart, Schifter, & Selverian, 2010). Skinner (1968) was an early supporter of computers as an instructional tool in learning. As early as 1950, Skinner acknowledged computers as a teaching machine, and he exhibited that potential as a labor saving device for teachers (Benjamin, 1988). In addition, Skinner cautioned that the effectiveness of technology in

learning is dependent upon on the teacher's knowledge, instructional strategies, and materials. Since then, technologies such as microcomputers, the Internet, and mobile tablet computers have been developed and implemented (Benjamin, 1988). During the early 20th Century, the use of technology, as well as the Internet, have provided numerous resources for learners with intellectual disabilities (Cumming et al., 2014).

As reported by Cumming et al. (2014), there are few studies in which the focus is on the use of technology as an instructional tool to promote teaching and learning for students with intellectual disabilities. However, the use of technology in the special education classroom remains a vital instructional tool in the current educational system (Courduff, 2011). In early studies, special education teachers relied on modified lessons and assistive technology to promote teaching and students' learning (Davidson, 2012). In addition, Cumming et al. (2014) reported teachers' use of the computer and Internet as instructional tools to promote teaching and learning for students with and without an intellectual disability. Their findings indicated that, if implemented consistently, technology was an effective instructional tool, which increased students' engagement and time on task.

Over time, the use of technology in educational systems has changed (Chien, 2013). In the early years, technology was used to provide a focus on how information was presented. In the 21st Century, technology was used to provide a focus on how information can be accessed and how to support teachers to make active learning into interactive learning. Despite the rapid development of technology, An and Reigeluth (2011) found that technology implementation is limited in the instructive setting of students with intellectual disabilities. The results from their study indicated that availability of technology devices was limited, and immediate technical support was not available (An & Reigeluth). Chien examined the use of technology as an

instructive tool and found that its use enhanced learning opportunities and aided teachers to develop effective teaching strategies.

Ciftci and Kurt (2012) reported that the use of technology has become more prevalent in educational settings. They maintained that, special education teachers who incorporated technology into their students' curriculum, implemented basic computer programs related to mathematics and literacy. The authors assessed five special education teachers, who used touch screen computers, to strengthen students' literacy and mathematics skills. Also, the teachers were able to demonstrate basic computer knowledge when they navigated the programs as an instructional tool (Ciftci & Kurt).

Technology is in a constant state of flux, and improvements are being made constantly in society today. It is critical for educators to remain current about the various types of technologies, which are available for the teaching and learning process (Williams, 2013).
A study conducted by Ertmer et al. (2012) discovered there are several special education teachers who do not incorporate the use of technology in students' curriculum. Findings from this study revealed teachers encountered complications due to the lack of knowledge related to processer use along with demonstrating an inadequate amount of expertise in the area of technology to meet the educational mandate of their students (Ertmer et al., 2012).

Technology Integration in Educational Settings

The use of technology (2013) can have an optimistic impact on students and teachers (Shihkuan & Ping-Yin, 2013). Almekhlafi and Almeqdadi (2010) reported that use of technology can promote independence and create an exciting and challenging atmosphere for learners with intellectual disabilities. In addition, these authors reported technology can be used as a valuable advantage to K-12 general education students as well as students with intellectual

disabilities. Shihkuan and Ping-Yin stated that, "Students who become acquainted with technology demonstrates major improvements academically" (p. 27). For students with intellectual disabilities, the use of technological instruments, such as the iPad, have been shown to strengthen students' physical and cognitive abilities in educational settings (Paré, 2012).

Technology is essential in education, because its use can provide various alternatives to gain knowledge for students of all levels of instruction (Chien, 2013). The integration of technology into educational settings means more than teaching students basic computer skills, such as looking at the computer screen or moving the mouse (Rafool et al., 2012). Rafool et al. insisted that technology must be incorporated throughout the school curriculum, in order to enhance students' learning process. According to Gu et al. (2013), the integration of technology into the student's curriculum has become an important teaching strategy for teachers to effectively educate students with intellectual disabilities. Gu's et al. emphasized the continuous use of technology in order to make it a basic part of the school curriculum. During this development, a teacher's experience is the critical component for successful implementation of technology (Rafool et al.).

The integration of technology to facilitate teaching and learning has been notably enhanced throughout the years, and its users will be the next generation of technology academic success (An et al., 2011). According to Rafool et al. (2012), technology innovations will have little effect on education if schools integrate them without the construction of *human infrastructure* that includes technology proficiencies. Rafool et al. stated, "Technology integration in schools necessitates proficiencies among administrators and educators" (p. 57). According to Xiaoqing et al. (2013), technology integration necessitates the support and training of school personnel so that they can effectively integrate technology as an instructional tool.

This development requires administrators and educators to demonstrate technology proficiencies during the practice of teaching and learning in educational settings. Also, Xiaoqing et al. emphasized that it is vital for administrators to support effective teaching practices in order to prepare students with intellectual disabilities to demonstrate academic achievement.

The iPad as Assistive Technology

Assistive technology **(**AT) is identified as a device that is "any item, whether acquired in an original form, modified, or customized, that is used to enhance or improve functional capabilities of individuals with a disability" (Bouck et al., 2012, p. 48). According to Flores et al. (2014), AT is exploited and modified to increase, maintain, or improve the functional capabilities of students with intellectual disabilities. Flores et al. (2014) found that the use of AT helps to increase the independence of students with intellectual disabilities, as well as assist learners in becoming proficient at basic skills and meeting the equivalent academic standards as their nondisabled peers. According to Bouck et al. (2012), the use of AT can provide students with intellectual disabilities with a universal playing field where they can learn academic skills, social skills, along with daily living skills.

The influence of AT as an instructional tool in regard to teaching students with intellectual disabilities is notable. According to Bouck et al. (2012), teaching students with intellectual disabilities is a critical area, which requires the use of AT to support the teaching and learning process. Bouck et al. (2012) indicated the use of AT can facilitate a broader range of educational prospects for students with intellectual disabilities by which they are enabled to become active learners in educational settings.

Teaching and Learning with IPads

The iPad is a multi-touch interaction and multimedia processing device created by Apple Computer, Incorporation in 2010 (Apple, 2015). The iPad is operated by iPhone OS 3.2. Apple officials unveiled the iPad as a magical and revolutionary device, which can be used to: (a) surf the web, (b) watch videos, (c) listen to music, (d) play games, (e) read e-books, and (f) more. According to Cumming et al. (2014), the iPad is ideal for use in educational settings. It makes activities and assignments accessible with the use of electronic actions. Further, Cumming et al. noted how iPad applications allow educators to download electronic versions of academic materials, while users can surf the web, check email, and download additional educational teaching and learning applications to the device.

In the 21st Century, technology such as the iPad has emerged as a vital constituent of teaching, while its use can reform teaching (Chien, 2013). Chien stated, "Technology such as an iPad is a great tool that reinforces what teachers teach and a great technique for students to unceasingly learn" (p. 7). IPads do not replace traditional teaching practices, but are used as a tool to provide accessible, relevant, and high-quality learning opportunities (Gentile, 2012).

It is relatively new that the teaching and learning with iPads has been used for students with intellectual disabilities are relatively new (Apple, 2015). Gentile (2012) reported that the use of iPads enables teachers to reinforce classroom learning and engage reluctant learners in the educational curriculum. Teaching and learning with an iPad can be qualitatively dissimilar (Apple, 2015) to the standard curriculum. With the use of an iPad, the process of being taught in the classroom can develop notably more fluent learners, who have access to innovative and divergent modes of training materials and resources (Foulger et al., 2013; Stewart et al., 2010).

According to Davidson et al. (2014), use of the iPad in the educational classroom is dependent upon the learning task to be taught. Davidson et al. emphasized that is important for teachers to incorporate technology into their classroom curriculum as a supplementary teaching and learning strategy, but never rely on its use unaccompanied. Based on Chien's (2013) study, many teachers find it difficult to modify and customize iPad applications for instruction. However, this difficulty is because the teachers did not know how to modify and customize applications due to a lack of iPad training.

The Integration of iPads as an Instructional Tool

As the latest generation of technology, Riley (2013) noted the iPad is acknowledged as the most popular technology device in the 21st Century, and they have become popular in educational settings. Fox (2010) reported that iPads can be used to develop a new learning environment for learners with intellectual disabilities, and the teaching materials can be personalized to each student's learning aptitude.

According to Cumming and Rodríguez (2013), both students and teachers have found that use of the iPad is a motivating and effective instructional tool for learning. Also, there are innovative application (i.e., apps) on the iPad to facilitate teaching and learning for students with intellectual disabilities. In addition, Rodríguez et al. (2014) reported that, when iPads are implemented appropriately in students' education curriculum, students demonstrate increased opportunities for independence as well as positive behaviors.

Cumming and Rodríguez (2013) commented that use of the iPad as an instructional tool can enhance students' motivation, interests, and inventiveness. These types of enhancements are considered primary objectives of education and are essential for the teaching and learning process for students with intellectual disabilities. Also, they emphasized that implementation of

the iPad as an instructional tool provides a ubiquitous learner-centered educational setting as well as the opportunity to develop collaborative teaching opportunities.

As educators integrate the iPad as an instructional tool for students with intellectual disabilities, the use of this technology provides a benefit to students through the enhancement of their: (a) knowledge gained, (b) increased productivity, and (c) promotion of creativity (Courduff, 2011). Another purpose of iPads is that their use has been observed to motivate students by the reduction of behavioral problems and improvised engagement on tasks and assignments (Paré, 2012). Although the use of iPads suggest great promise for individuals with intellectual disabilities, little research has been conducted to explore patterns of use among this population Chien (2013), even though these students demonstrated a high interest in the use of technological devices such as the iPad.

Barriers or Challenges to Technology Integration in Schools

Given the imperative role of technology in society today, researchers have examined the issues and barriers for the integration of technology in educational settings for students with intellectual disabilities. According to Xiaoqing et al. (2013), the most common factors, which prevent educators from such integration, are the shortage of teaching and learning instructional tools. Also, Xiaoqing et al. emphasized that the success of technology integration into classrooms depends upon the knowledge and acceptance of educators. Similarly, Shihkuan et al. (2013) identified the limitation of funds to employ professional development to in-service special education teachers as the most common factor for thorough integration of technology.

The effects of the integration of technology, such the iPad, into students' curriculum are not well-researched, and some scholars have found barriers or challenges (Ciftci & Kurt, 2012). Ramorola (2013) reported that some teachers hold negative positions about the implementation

of the iPad, while others maintain that implementation of the iPad can be effective to develop student engagement and provide more interactive learning environments (Cumming et al., 2014). In spite of the presented barriers or challenges, Riley (2013) found iPads are being used increasingly in many educational settings. Furthermore, Foulger et al. (2013) demonstrated that professional development has been shown to improve the effectiveness of implementation of the iPad as an instructional tool. Foulger et al. (2013) discussed how teachers have used iPads on a daily basis, yet had little or no experience with the implementation of the device as an instructional tool in their instructional setting.

Technology devices**,** such as the iPad**,** have been propelled to the front position of educational settings (Roth, 2014). Laferrière, Hamel, and Searson (2013) acknowledged the iPad as a device, which requires knowledge and experience to implement as an instructional tool in educational settings. According to Pilgrim, Bledsoe, and Reily (2012), one of educators' struggles with technology involve the proficiency of its educators and how they utilize technology as an instructional tool to facilitate students' learning. Pilgrim's et al. (2012) research compared technology proficiencies among educators who teach general education students and students with intellectual disabilities.

Teachers' Perceptions of Technology Integration

Increasingly, the use of technology influences many aspects of academic settings, as well as work environments. In this second decade, 21st Century, teachers have moved into a technology-based society (Gentile, 2012). During this transformation, it is essential that classroom experiences with technology are available and accessible to all students (Foulger et al., 2013; Kiranli & Yildirim, 2013); however, the degree to which this can occur is dependent upon their teachers' knowledge and application of technology. Murray and Olcese (2011)

emphasized the importance for teachers and students to accept technology in educational settings as a critical part of the new millennium. Also, Murray and Olcese maintained that it is the responsibility of educators to ensure that the educational needs of each student are achieved.

According to Almekhlafi and Almeqdadi (2010), effective technology integration related to implementation of the iPad as an instructional tool has become the focus of many educators. Almekhlafi and Almeqdadi (2010) examined teachers' perceptions of the utilization of computers and other technologies as instructional tools for students with intellectual disabilities. They found many proficiencies and barriers, among the teachers, some of which obstructed technology integration in the classroom along with other related issues. Almekhlafi and Almeqdadi recommended that technology should be used in in all educational settings, including classrooms of students with intellectual disabilities to enhance teachers' skills and competencies in technology integration.

The iPad provides teachers with many ways to instruct students and bring their educational coursework to life (Murray & Olcese, 2011). Riley (2013) and Kagohara et al. (2013) acknowledged that teachers are the building blocks in educational settings**,** they are those who will provide resources to implement and structure educational programs. Additionally, Gilakjani et al. (2013) emphasized the role of a teacher is to appropriately implement programs to facilitate learning as well as provide students an effective education that will enable them to gain knowledge of skills to flourish academically in society.

Summary

Millions of students with intellectual disabilities in the United States can benefit from using technology devices such as an iPad. The Individuals with Disabilities Education Act (IDEA) requires that students with intellectual disabilities have access to the general education

curriculum, to include technological devices (Zirkel, 2013). Research findings have emphasized the importance of implementing the iPad as an instructional tool. According to Bouck et al. (2012), simply requiring special education teachers to implement the iPad as an instructional tool does not guarantee academic success for students with intellectual disabilities. It is important for researchers to invest the time to uncover special education teachers' shared experiences in successfully implementing the iPad as an instructional tool for students with intellectual disabilities.

Special education teachers must be prepared to instruct students with intellectual disabilities and with a diverse range of academic needs (Ellis, 2013). As noted in the related literature, a teacher's level of proficiency and their knowledge plays a major role during the process of teaching students (Downing, 2010). The problem lies in that the contingency instructional practices to which teachers defer may not be deemed as effective teaching strategies. Likewise, it is possible that by discovering the special education teachers' proficiencies and knowledge from their lived experiences, a body of research may be developed that shares new ideas and learning strategies that can foster effective teaching strategies. Based on the related literature, if special education teachers implement technology in their educational setting, both researchers and special educators must invest the time needed to uncover the teachers' proficiencies and knowledge.

Through my research, I have identified studies (Davidson et al., 2014; Roth, 2014; Rodríguez et al., 2014; Almekhlafi et al., 2010) that focused specifically on the special education teachers' proficiency and knowledge on the process of implementing the iPad as an instructional tool with students with intellectual disabilities. I have also identified studies that discussed general education teachers' experiences with the implementation of the iPad as an instructional

tool. Few studies (Cumming & Rodríguez, 2013; Cumming et al., 2014; Kagohara et al., 2013; Rodríguez et al., 2014) have discussed special education teachers' experiences with the implementation of the iPad as an instructional tool for students with intellectual disabilities. This study sought to fill the gap in the literature by focusing on special education teachers' who implemented the iPad as an instructional tool for elementary students with intellectual disabilities.

CHAPTER THREE: METHODS

Overview

The purpose of this transcendental phenomenological study was to describe the lived experience of special education teachers' knowledge and understanding. In this study, the author described the special education teachers' experiences as they implemented the iPad as an instructional tool to enhance the academic practices of elementary students with intellectual disabilities in North Carolina schools. Based on this description of the special education teachers' experiences, the participant teachers were able to demonstrate their knowledge and understanding and thereby impact student learning.

The use of IPads, as an instructional tool, has strengthened professional growth and leadership for general educators (Cumming, Strnadová, & Singh, 2014). The iPad is an instructional tool, which educators can use to facilitate student learning and aid educators in their implementation and incorporation of age appropriate (intellectual capability) technology for learners. In educational settings, the iPad can be used as an instructional tool to provide teachers with the opportunity to: (a) individualize students' instructions, (b) replace textbooks in a cost effective method, and (c) improve communication among students and educators, as well as among educators and parents (Murray & Olcese, 2011).

The transcendental phenomenological approach was used to explicate the special education teachers' experience in terms of its constituent and possible meaning (Moustakas, 1994). In this study, special education teachers, who implemented the iPad as an instructional tool, were able to discern "the features of consciousness and emerging at an understanding of the essences of the experience" (p. 49). This act consisted of the "*what"* and "*how"* experienced by the special education teachers (Creswell, 2013, p. 76).

The purpose of this chapter was to provide a clear perceptive of how the research design, procedures, data collection methods, and data analysis procedures served as the foundation for the research questions, which guided this study. Also identified were the participants and the setting, which influenced the interpretation of the data collection methods. The provisions for trustworthiness were addressed, as well as the use of triangulation "to provide corroborating evidence" (Creswell, 2013, p. 251). In conclusion, this author provided a depiction of the researcher's role and ethical considerations to provide a framework to address and understand the gap in the literature on this topic.

Design

A qualitative phenomenological research design was selected for use in this study. This approach was selected because it best describes the special education teachers' experiences as they implemented the iPad as an instructional tool. According to Merriam (1988), the purpose of a qualitative research design is used to elucidate and discover phenomena in the determination and development of an inventive approach to older common challenges.

The use of the phenomenological approach provided the researcher with the opportunity to examine the technological awareness and the ability of teachers, as well as their instructional strategies. The focus of the phenomenological approach was on what individuals experienced and the essential meaning of how they experienced a phenomenon (Moustakas, 1994). Use of a phenomenological approach provides the researcher with the opportunity to understand the core meaning of the phenomenon through close examination of the special education teachers' experiences. Simply stated, the experiences of special education teachers were captured as they lived through the experience of using the iPad as an instructional tool for students with intellectual disabilities (Creswell, 2013).

Creswell (2013) identified hermeneutic phenomenology and transcendental phenomenology as two main approaches to phenomenological research. The transcendental phenomenological approach allows the researcher to demonstrate the essence of the special education teachers' experiences as they implemented the iPad as an instructional tool, and not the researcher's interpretation. Moerer-Urdahl and Creswell (2008) recognized transcendental phenomenology as a more structured process for the collection and analysis of data, in order to provide a focus on the participants' experiences rather than the researcher's interpretation.

The transcendental phenomenological approach is the most appropriate design for this research because it focuses "more on a description of the experiences of participants" and less on the interpretation of the researcher (Creswell, 2013, p. 80). By this means, use of a transcendental phenomenological approach allows the researcher to describe the essence of the experiences of the special education teachers as they implemented the iPad as an instructional tool for students with intellectual disabilities. In this study, special education teachers, who used the iPad as an instructional tool, demonstrated their educational proficiencies and made sense of the phenomenon through the incorporation of the iPad in the students' curriculum as a teaching tool to enhance academic practices.

The data collection for this present study consisted of: (a) in-depth interviews, (b) focus group interviews with open-ended discussion protocol, and (c) classroom observations. In the classroom observations, this researcher made field notes of the special education teachers in their natural setting, in regard to the purposes and goals of the research (Patton, 2002). The collected data provided descriptive information, which that was essential in order to gain insight and understand the special education teachers' experiences, as they implemented the iPad as an

instructional tool. Their experiences were interpreted through not only their articulated words, but body language and actions, as well.

Husserl (1964) believed that human knowledge is understood as first-hand experience of a phenomenon. Husserl's belief was exemplified through the defined procedures for the conduct of a transcendental phenomenological study (Moustakas, 1994). This thoroughness allows for the description of special education teachers in regard to their common experiences as they implemented the iPad as an instructional tool. The findings from this study should contribute to the literature about the implementation of the iPad as an instructional tool in order to enhance the academic practices of elementary students with intellectual disabilities.

Research Questions

Central Question. What are the special education teachers' shared experiences in their implementation of the iPad as an instructional tool for elementary students with intellectual disabilities?

Sub-Question One. How do special education teachers describe their experiences with the integration of iPads to meet the educational needs of elementary learners with intellectual disabilities?

Sub-Question Two. How do special education teachers describe their technological awareness and their ability to integrate the iPad as an instructional tool for elementary students with intellectual disabilities?

Sub-Question Three. How do special education teachers describe their instructional strategies for the use of the iPad as an instructional tool to enhance the teaching and learning process for elementary learners with intellectual disabilities?

Setting

This study took place at four elementary school sites within a North Carolina school district, which is located in the Southeastern part of the United States. The selected school district serves more than 33,000 students in 56 schools (e.g., elementary, middle, and secondary) across the city and county. Approximately 75% of students in this district qualify for free or reduced price lunch. The demographics are: (a) 49.56% Black or African American, (b) 25.24% Hispanic or Latino, (c) 18.90% White, (d) 3.24% Multiracial, (e) 3.1% Native American, (f) 2.45% Asian, and (g) 0.11% Pacific Islander/ Hawaiian. The graduation rate for this school district has steadily decreased from 73.0% in 2008-2009 to 51.5% in 2013-2014. Three elementary schools in this district were identified with a 55% grade advancement rate; the academic performance of two special education classrooms decreased 25% over the last 3 years; and 43.6% of all schools in this district demonstrated a decrease in the state's academic growth expectations.

In this selected North Carolina school district, approximately 2,000 full-time general education teachers and 500 special education teachers are employed. Each special education teacher employed within this school district possesses a Bachelor's degree or above. Also, the special education teachers hold a valid North Carolina teaching license in the areas of: (a) Exceptional Children Program, (b) Special Education, or (c) General Curriculum K-12. For consistency in setting, the individual special education teachers' classroom was utilized for the setting for this study. The use of the teachers' classroom provided a degree of consistency, because the settings and environment were basically the same for all participants.

This North Carolina school district was selected for this project because it is a high-poverty, Title 1 School, which is classified as Need for Improvement based on the district's end

of grade test results in reading, mathematics, and science. In addition, the sites were selected, because technology was used at the sites to enhance students' academic practices. Each school in this district provides two iPads in each classroom and five iPads in the technology lab. The technology lab is open during school hours and is directed by a media specialist and technology assistants, who are available for classroom technical support issues upon a scheduled appointment.

Tutoring opportunities are provided for each student in this North Carolina school district, and the administrative staff consists of: (a) an executive principal, (b) an assistant principal, (c) dean of students, and (d) dean of academics. Since this author works currently at a residential school as a special education teacher, I have personal experience of the value of the use of technology as a regular part of the student's curriculum, and its potential to enhance students' academic practices. The conduct of this study caused no changes to the District's setting or curriculum, so it was perceived as an ideal site for this study.

Participants

With the use of purposeful sampling, 11 special education classroom teachers were invited to participate in this study. Purposeful sampling was used to inform an understanding of the research problem and central phenomenon of the study (Creswell, 2013). The special education teachers selected for this study did not need to teach at the same school site, but they did need to use the iPad to instruct students with intellectual disabilities. The researcher collaborated with the District technology specialist and the exceptional children's director to aid in the selection of special education teachers, who used the iPad with students with intellectual disabilities.

The criterion sampling was used to ensure that the participants met certain predetermined characteristics in order to provide a meaningful understanding of the use of the iPad as an instructional tool for student with intellectual disabilities (Creswell, 2013). The sample population consisted of classroom special education teachers. The special education teachers qualified with the following criterion: (a) current state-issued teacher's license to teach students with intellectual disabilities and (b) use of the iPad as an instructional tool. Demographic data were collected in regard to: (a) teachers' gender, (b) level of education, and (c) years of teaching experience (see Appendix A).

Procedures

In order to conduct this study, the first step was to apply to the members of the Liberty University Internal Review Board (IRB) for permission to collect data. After receipt of this authorization from the IRB, I contacted the prospective school district I wanted to use as the site (Appendix B). After permission from the District was obtained, additional inquiries were made to identify potential participants, and who met the criteria for participation in this study (see Appendix C). The target population for this study consisted of elementary, special education teachers who used the iPad as an instructional tool to teach students with intellectual disabilities. A few days after meeting with the likely participants, they received a follow-up email, which the author used to describe the study (see Appendix D).

Each potential participant was provided with a consent form, which informed him or her about the potential benefits and risks of the study. Also, they were advised that participation in the study was voluntary, and they could withdraw from the study at any time (see Appendix E). After they reviewed the consent form, they were asked to sign it to indicate their willingness to participate. After each participant signed a consent form, the forms were securely stored for

confidentiality. After selection of the qualified participants for this study, this author contacted them by telephone to thank them for their participation and information about scheduling a time, date, and location of their interview, observation, and focus group discussion (see Appendix F).

The data collection process for this study consisted of interviews, focus groups, and observations. To ensure that the study was balanced and complete, data collection continued until a point of data saturation was reached (Creswell, 2013). The point of saturation was determined when the researcher no longer heard new information from the special education teachers' interviews and focus groups or observed new information from the observations.

Moustakas' (1994) procedures were used to analyze the data for this study. The data were analyzed by use of a phenomenological reduction, which included: (a) bracketing, (b) horizonalization, (c) clusters of meaning, and (d) textual and structural descriptions. The recording procedures for this study initiated with an observation, which began with the development and utilization of a protocol/template to provide observation consistency (see Appendices G and H). The notes recorded and documented from the observations provided indications of teachers' experiences with current practices. The observational notes were collected and recorded in a field notebook. Also, the data from the participants' in-depth interview and focus group discussions were collected and recorded in a field notebook. All data were transferred and stored on the researcher's hard drive of her personal computer, which is password protected. The field notebook and the researcher's personal computer are kept in a locked and secured area.

The Researcher's Role

In this research study, I served as an interpreter, who sought to understand and describe special education teachers' experiences in their implementation of the iPad for students with

intellectual disabilities. During this study, I was the human instrument by the collected data were filtered and scrutinized. Consequently, biases or assumptions to this proposed research study may have emerged. I am a special education teacher with 17 years of experience. I am employed at an Intermediate Care Facility for Individuals with Intellectual Disabilities (ICF/IID) certified facility, which provides comprehensive care for residential services and statewide services for approximately 500 citizens. Currently, I am assigned to teach students in residential services, where services are provided to adults with severe/profound or moderate/mild cognitive challenges, as well as health and/or behavioral needs. The students' age range from 25 to 84 years old.

My experience has been shared with many special education teachers with varying personal characteristics and content knowledge. My professional development and research have expanded my understanding and expertise in the provision of research based instruction in technology in regard to the use iPads as an instructional tool. The basic assumptions upon which this study is based are related to the use of iPads as an instructional tool to enhance the teaching and learning process, as well as the development of student-centered learning environments.

Each individual is created in God's image and is called to do His work (Newlands & Ruston, 2010). The ability to teach is a gift. Teachers provide service to others and lead by setting positive examples to provide students wisdom and knowledge (Kleickmann et al., 2013). As an educator, it is the teacher's task to instruct, present the truth correctly, and teach accurate information while he or she treat students with respect (Giorgi et al., 2013). The researcher considers technology, such as an iPad, as an effective instructional tool related to the teaching and learning process. The researcher's belief in the relevance and importance of technology in

the 21st century with students with intellectual disabilities will undoubtedly influence how she analyzed the data that emerged from this study.

Data Collection

Prior to the conduct of the study, approval was obtained from the members of the Liberty University IRB. The data collection process consisted of the selection of 11 special education teachers who used the iPad as an instructional tool for elementary students with intellectual disabilities in their educational setting. Several data collection methods were used to triangulate the data and ensure that the data were analyzed in a trustworthy manner. This study included the following data collection methods: (a) interviews (11 special education teachers); (b) focus groups (i.e., consisted of 3-5 special education teachers per group); and (c) observations (i.e., 11 special education teachers in their educational setting).

Interview questions are an important tool in a transcendental phenomenological study (Gill, Stewart, Treasure, & Chadwick, 2008). It is important that they be "carefully constructed to portray a phenomenon, which is vigorous, rich, and layered in its textures and meaning" (Moustakas, 1994, p. 59). During this process, a special educator was selected to pilot each interview question prior its use in the interviews and focus groups. In addition, another special educator was selected to pilot the interview questions to ensure that the questions were understood by the respondents and that there were no problems with the wording or measurement (Maxwell, 1996).

Some of the interview questions in this study were followed by a probe question in order to elicit more information related to the interview questions (Jacob & Furgerson, 2012; Qu & Dumay, 2011). During the probing process the researcher asked "What" questions and/or engaged in the following probing techniques: (a) silent probe by remaining silent for a few

seconds and waiting for informant to continue; (b) echo probe by repeating the informant last statement and asking them to continue by way of providing more details; and (c) encourage the participant to continue with a narrative by the use of affirmative vocals such as “yes, I see” (Qu & Dumay).

Alignment of the data collection methods to the research questions are shown in Table 1.

Table 1

Data Collection Methods Aligned with Research Questions

	Central Question	Sub-Question 1	Sub-Question 2	Sub-Question 3
	What are the special education teachers’ shared experiences in their implementation of the iPad as an instructional tool for elementary students with intellectual disabilities?	How do special education teachers describe their experiences with the integration of iPads to meet the educational needs of elementary learners with intellectual disabilities?	How do special education teachers describe their technological awareness and their ability to integrate the iPad as an instructional tool for elementary students with intellectual disabilities?	How do special education teachers describe their instructional strategies for the use of the iPad as an instructional tool to enhance the teaching and learning process for elementary learners with intellectual disabilities?
Interviews	X	X	X	X
Focus Group(s)	X	X	X	X
Observations	X	X	X	X

Interviews

Interviews were the primary method used to collect information. For a phenomenological study, "the process of collecting information involves primarily in-depth interviews describing the meaning of the phenomenon for a small number of individuals to have experienced the situation" (Creswell, 2013, p.161). This process was used to gain an understanding of how the special education teachers described their shared experiences with the use of the iPad as an instructional tool. During this process, data collection consisted of a semi-structured, one-on-one, face-to-face interview, which was in-depth with open-ended questions asked of each participant (Gill et al., 2008; Qu & Dumay, 2011). For some questions, probing occurred to elicit more information related to the participants' responses (Jacob & Furgerson, 2012; Qu & Dumay).

The participants in the interviews consisted of 11 special education teachers who had utilized the iPad as an instructional tool for students with intellectual disabilities. Each participant was interviewed for a minimum of 30 minutes. Prior to conduct of the interview, the researcher had each interview question reviewed by research professionals and conducted a pilot study to provide feedback on the usage of the interview questions in the study (Maxwell, 1996). This action allowed the researcher to ensure each interview question was clear and comprehensible. At the end of each interview, the researcher obtained permission from the participants to conduct a follow-up telephone call or email. The telephone call or email provided the researcher and participants the opportunity to provide clarification, validation, or additional information overlooked during the face-to-face interview (Jacob & Furgerson, 2012). The data were stored in a locked field notebook and transferred to a password protected computer file (Creswell, 2013).

The interview questions used for this study were constructed based on the research questions, which guided this study. See Appendix I for the standardized open-ended interview questions and probes.

Standardized Open-Ended Interview Questions

Shared experiences with the integration of iPads to meet the educational needs of learners with intellectual disabilities

1. How would you describe your prior experience(s) using the iPad?
2. Please describe your current level of experience using the iPad as an instructional tool for learners with intellectual disabilities.
3. How have your experiences using the iPad as an instructional tool impacted your delivery of the curriculum in your classroom?

Technological awareness and ability to integrate the iPad as an instructional tool with elementary students with intellectual disabilities

4. How long have you been using the iPad as an instructional tool for students with intellectual disabilities?
5. Can you please share how you specifically have integrated some iPad activities and lessons into the students' curriculum?
6. What are some examples of curriculum connections that you have made using the iPad as an instructional tool for students with intellectual disabilities?
7. What resource(s), if any, have you used to enable you to implement the iPad as an instructional tool at this school?
8. Please describe your planning process for implementing the iPad as an instructional tool for classroom lessons and activities?

Instructional strategies for the use of the iPad as an instructional tool to enhance the teaching and learning process for elementary learners with intellectual disabilities

9. What types of training or preparation did your school provide you prior to implementing the iPad as an instructional tool for your students?
10. What support structures does your school district have to assist you in using an iPad as an instructional tool?
11. Can you please share with me some specific iPad lessons and activities that you use to instruct your students?
12. Can you provide me modifications, if any, that you have applied, while implementing the iPad as an instructional tool?
13. How has your technology professional development assisted you to effectively integrate the iPad in your students' curriculum?

Barriers or challenges (if any) for the use of the iPad as an instructional tool for elementary students with intellectual disabilities

14. Can you describe some barriers, if any, you have encountered in the implementation of the iPad in your classroom?
15. When thinking about implementing the iPad as an instructional tool, can you give me some examples of challenges that may hinder your use in the classroom?

The purpose of the interview questions pertaining to the participants supports the central question by describing the special education teachers' lived experiences implementing the iPad as an instructional tool for students with intellectual disabilities. Questions 1 through 3 were developed to describe the special education teachers' educational needs of instructing learners with intellectual disabilities. These questions were used to collect information about the

participants' experiences integrating iPads to meet the educational needs of students with intellectual disabilities. Teaching students with intellectual disabilities involves differentiating instructions, which consists of planning for the lessons by prioritizing concepts in addition to organizing materials (Pei-Lin et al., 2014). During this teaching process, special education teachers' experience is the key variable in effectively implementing technology devices such as the iPad to successfully meet the educational needs of students with intellectual disabilities (Courduff, 2011).

Questions 4 through 8 were developed to describe the special education teachers' technological awareness and their ability to integrate the iPad as an instructional tool for students with intellectual disabilities. These questions were used to collect information about the participants' technological awareness and their abilities to integrate iPads in the curriculum of students with intellectual disabilities. Technology provides a foundation for pedagogical content knowledge that enables special education teachers to make ideas accessible to learners (Koehler, Mishra, & Cain, 2013). Kleickmann et al. (2013) introduced the phrase *pedagogical content knowledge* as teachers' knowledge of a subject matter. This is essential for successful teaching. Kleickmann et al. emphasized the importance of teachers mastering "deep" knowledge, which deals with the teaching process and "structure of knowledge," which demonstrates the ability for good teaching (p. 100). According to Koehler et al., effectively implementing iPads as an instructional tool requires special education teachers to understand the subject matter deeply and to structure their knowledge to effectively implement technology across all academic arenas.

Questions 9 through 13 were developed to describe the special education teachers' instructional strategies for using the iPad as an instructional tool to enhance the teaching and learning process for learners with intellectual disabilities. These questions were used to collect

information about the teaching strategies the participants used for implementing the iPad as an instructional tool to enhance the teaching and learning process for learners with intellectual disabilities. Enhancing the academic practices for students with intellectual disabilities is essential (Downing, 2010). Students with intellectual disabilities often have limited experiences and may not fully understand everything that occurs around them. During this teaching process, special education teachers are often directed to modify instruction to accommodate the needs of students who have an intellectual disability (Downing). These students may require adapted instruction. It is important for special education teachers to implement and exploit meaningful and interesting experiences as the basis for enhancing the teaching and learning process for students with intellectual disabilities (Dean, 2012). According to Miller et al. (2013), implementing the iPad as an instructional tool in the curriculum of students who are intellectually disabled, should be presented in a clear and concise manner. Miller et al. (2013) also expressed, implementing iPads as an instructional tool should also entail the use of appropriate teaching strategies, teaching materials and comprehensible expectations.

Questions 14 through 15 were developed to describe the special education teachers' barriers or challenges (if any) using the iPad as an instructional tool for students with intellectual disabilities. These questions were used to collect information about the participants' barriers or challenges (if any) with the use of the iPad as an instructional tool. Implementing iPads as an instructional tool has aided students with intellectual disabilities to improve their academic practices (Rodríguez et al., 2014). Effective academic practices from the implementation of the iPad as an instructional tool is dependent upon the teachers' knowledge and experiences (Kleickmann et al., 2013). Research conducted by Ciftci and Kurt (2012); Ramorola (2013) identified the following barriers and challenges related to the implementation of iPads as an

instructional tool: (a) lack of appropriate staff training and support, (b) negative staff attitudes, and (c) insufficient funding to purchase additional iPads.

Focus Group

Focus groups were the second method, which were used for data collection. The use of a focus group allowed the researcher to be in a non-directive role and to facilitate discussion among the participants (Gall, Gall, & Borg, 2007). There were three focus groups with 3 to 5 participants per group. During this process, the main objective of the focus groups was to elucidate and expand upon on the information discussed in the interview stage (Gill et al., 2008).

The members of the focus groups described their shared experiences as special education teachers, who implemented the iPad as an instructional tool. The interviewer provided the participants with open-ended questions and probing questions, which provided the opportunity to share the participants' experiences and acquire a deeper understanding of their perspectives related to the implementation of the iPad as an instructional tool for students with intellectual disabilities (Creswell, 2013). The use of probe questions allowed the interviewer to acquire more details related to the participants' responses (Jacob & Furgerson, 2012; Qu & Dumay, 2011).

Each of the focus groups met one time, and each session was a minimum of 30 minutes. The focus groups were conducted at a convenient time for the participating special education teachers at a neutral location. The information discussed in the focus groups was documented in a field notebook and transcribed for data collection (Creswell, 2013). The transcribed data were stored via password protected computer files.

The focus group questions used in this study were based on the research questions that guided this study. See Appendix J for the standardized open-ended focus group questions and probes.

Standard Open-Ended Focus Group Questions

Shared experiences for the integration of iPads to meet the educational needs of learners with intellectual disabilities

1. How did you feel when you received an iPad for instructional use in your classroom?
2. Please describe how the iPad has added value to your students' curriculum?
3. Describe how your pedagogy has been affected or not affected since implementing the iPad as an instructional tool?

Technological awareness and ability to integrate the iPad as an instructional tool for elementary students with intellectual disabilities

4. Describe your planning process for implementing the iPad as an instructional tool?
5. In your opinion, how appropriate is implementing the iPad as an instructional tool for students with intellectual disabilities?
6. Describe your previous and current experience implementing the iPad as an instructional tool for students with intellectual disabilities.

Instructional strategies for the use of the iPad as an instructional tool to enhance the teaching and learning process for learners with intellectual disabilities

7. What strategies or programs are you aware of that are based on research for implementing the iPad as an instructional tool?
8. Please share some successful learning strategies for implementing the iPad as an instructional tool.

Barriers or challenges (if any) for the use of the iPad as an instructional tool for students with intellectual disabilities

9. Please describe barriers or challenges (if any) have you encountered implementing the iPad as an instructional tool.
10. Can you share additional information or experiences that you have encountered during the process of implementing the iPad as an instructional tool in your classroom.

Questions 1 through 3 were designed to develop a general perspective of the experiences special education teachers have with implementing the iPad as an instructional tool. Roth (2014) stated, "In order for instructional tools to facilitate learning, educators need to have the knowledge and skills to understand the level and nature of their current capabilities" (p. 4). Jahnke and Kumar **(**2014**)** stated, "Teachers' knowledge influences actual teaching practices and it is important for teachers to position themselves for new teaching experiences" (p. 85).

Having the special education teachers to describe their experiences and their understanding of the iPad will help them appreciate their perspective related to technology implementations. This perspective may encourage the special education teachers to implement the iPad as a learning tool for students with intellectual disabilities. According to Flewitt, Kucirkova, and Messer (2014), "there is limited empirical evidence that special education teachers use the iPad as an instructional tool" (p. 110). Therefore, questions 4 through 6 will prompt the special education teachers to think deeper about specific aspects of implementing the iPad as an instructional tool.

Questions 7 and 8 were designed to develop a general perspective of instructional strategies for using the iPad as an instructional tool to enhance the academic practices for learners with intellectual disabilities. Research conducted by Roth (2014) emphasized the

importance for teachers to experience a series of developmental stages of technology integration such as implementing the iPad as they transition from novice user to teacher-facilitator. According to Jahnke and Kumar (2014), the key to implementation of the iPad as an instructional tool may consist of examining how teachers design instruction. Roblyer and Doering (2013) stated, "A teacher's level of proficiency with the use of iPads and their knowledge related to iPads plays a major role during the process of the implementation of the iPad as an instructional tool" (p. 25).

Questions 9 and 10 were designed to develop a general perspective of the barriers or challenges (if any) with the use of the iPad as an instructional tool for students with intellectual disabilities. Many teachers have begun the use of implementing the iPad as an instructional tool. During this development, barriers and challenges hinder some educators from implementing devices as an instructional tool. There are different barriers that hinder teachers' use of technology in the classroom. Laferrière et al. (2013) identified the following barriers or challenges that hindered teachers' use with the implementation of the iPad as an instructional tool: (a) limited administrative support, (b) curriculum integration difficulties, (c) teacher's knowledge towards iPads, and (d) inadequate numbers of iPads available for students' use (Laferrière et al., 2013). The implementation of the iPad as an instructional tool is rewarding and the barriers and challenges are just a way to stimulate educators into new learning styles (Laferrière et al., 2013).

Observations

Observations were the third method for data collection. This researcher scheduled one observation, of 45 minutes, with each participant. During the observations, the researcher had the opportunity to observe the lived experiences of the special education teachers while the iPad

was implemented as an instructional tool for students with intellectual disabilities. During the scheduled observation, the researcher took on the role of a nonparticipant. As a nonparticipant, "the researcher was identified as an outsider to the group, who observed and took field notes" (Creswell, 2013, p. 167). To ensure consistency along with addressing both descriptive and reflective information, an observation protocol and template was used (see Appendices G and H).

During the observation, each participant was observed at his or her site with the use of the iPad for students with intellectual disabilities for a minimum of 45 minutes. Observing each teacher at his or her site allowed the researcher to gain insight of the special education teachers' techniques, strategies, ideas, and resources in a real-life teaching situation. In the course of this process, observations provided the researcher the opportunity to observe the participants' reactions from a different perspective, gain knowledge about their actions, and to develop the meaning of those actions.

Observations provided the researcher the opportunity to witness first-hand the lived experiences of the special education teachers with the implementation of the iPad as an instructional tool (Creswell, 2013). According to Rossman and Rallis (2003), observations provided researchers the opportunity to learn about actions and infer meanings of those actions. The observations from this study were digitally videotaped and transcribed for data collection. The data were stored via password protected computer files (Creswell, 2013).

Data Analysis

It is important for a qualitative study to consist of rigorous data collection, based on multiple procedures to collect and analyze data (Creswell, 2013). During this process, numerous data collection methods were used to gain a clear understanding of the special education

teachers' experiences using the iPad as an instructional tool for students with intellectual disabilities. The following steps were utilized: (a) bracketing, (b) horizonalization, (c) formation of clusters of meaning, and (d) textual and structural descriptions.

Bracketing

Following Moustakas' (1994) data analysis approach, first, "the data were read and bracketed" (Creswell, 2013, p. 80; Moustakas, 1994, p. 90). To ensure that the analysis of the data from this transcendental phenomenological study was bias free, the concept of bracketing was used. Bracketing is a key portion of qualitative research in regard to the conduct of a phenomenological study, in which data were collected from interviews and observations (Husserl, 1964). Bracketing in this study occurred when the data were placed in brackets, "which the researcher set aside her experiences, as much as possible, to take a fresh perspective towards the phenomenon under examination" (Creswell, 2013, p. 80). Bracketing the researcher's experience allowed here own knowledge and experiences not to influence the participants, which involved a non-judgmental study that does not impede the perception of the phenomenon at the heart of the study (Husserl, 1964). In this study, bracketing presented the understanding of how special education teachers experienced the implementation of the iPad for elementary students with intellectual disabilities. Bracketing allowed the analysis to be "rooted solely on the topic and the question" (Moustakas, p. 97).

Horizonalization

The next step in the analysis was the process of horizonalization (Moustakas, 1994). The horizonalization process was used to attempt to understand the participants' experiences (Moustakas). In this process, "data are reduced through use of horizonalization" (Creswell (2013, p. 82). Horizonalization is described as the process of "highlighting significant

statements or sentences that provided an understanding of the phenomenon being examined" (Creswell, p. 82). The first step is to organize the data by the development of files. The researcher read the data and made notes to: (a) form the initial codes, (b) sort the data into codes and themes, (c) classify the data into codes and themes, (d) interpret the data, and (e) present a narration of the essence of the experience (Creswell).

Clusters of Meaning

The third procedure was to analyze the clusters of meaning. This process followed horizonalization, which consisted of ensuring "every statement initially was treated as having equal value" the horizons were clustered into themes, also known as clusters of meaning. The horizons were identified when "all statements that were irrelevant to the topic and question were deleted" (Moustakas, 1994, p. 97). The clusters of meaning were grouped according to similar meaning units, or themes, which was used to "identify the structural themes of the experience" (Moustakas, p. 97). During this process, the researcher reread the data for repetitive and overlapping statements and made the necessary edits (Creswell, 2013). The "cluster of meaning was used to write a description of what the participants experienced", which is identified as the textural description (Creswell, 2013, p. 82).

Textual and Structural Descriptions

The fourth process used was textual and structural descriptions. According to Moustakas (1994), textual and structural descriptions provide additional meaning by the development of a synthesis of the meanings and essences of the phenomenon. Gall et al. (2007) defined textual descriptions as an "individual's intuitive, pre-reflective perceptions of a phenomenon" **(**p. 496) and structural descriptions as the process of reflection on the setting and content by underlying the experiences of the phenomenon along with providing meaning. From the textual and

structural descriptions, the researcher wrote a composite description that represented the essence of the special education teachers' shared experiences with the implementation of the iPad for elementary students with intellectual disabilities (Creswell, 2013). The final step of this process entailed synthesis of the themes. Moustakas (1994) described this as "intuitively-reflectively integrating textual and structural descriptions to develop the essences and the meaning of the phenomenon" (p. 181).

Trustworthiness

The strength of qualitative study is referred to as trustworthiness. Also, this is known as validation (Creswell, 2013). Trustworthiness addresses four criteria: (a) credibility, (b) dependability, (c) transferability, and (d) confirmability. Credibility refers to the establishment of trustworthiness by the probe of the data, analysis of the data, and subsequent conclusions to analyze the accurateness of the study (Schwandt, 2007). Dependability refers to the exhibit of the consistencies of the finding, which ensures that the process of the research can be traced and audited, in order that the situation can be traced for other researchers to follow (Schwandt, 2007). According to Schwandt, transferability consists of the application of the research results to other contexts and settings to obtain generalizability. Transferability consists of a detailed description of the site of the study, the participants, and procedures used to collect data in order for other researchers to assess whether the results can be generalized (Schwandt, 2007). In addition, confirmability is comprised of an audit trail, which includes raw data and allows other researchers to verify the study findings, based on these (Schwandt, 2007).

Triangulation

Triangulation is the process wherein when participants are asked to review and respond to the researcher's conclusions to ensure that the data analysis is rich, robust, comprehensive,

and well developed. During this process, the use of three different sources of data collection is used to contribute to the reliability of the study and support the triangulation of the data. The triangulation process is used to increase the reliability of the study because it involves the use of multiple data sources to produce a vibrant understanding (Creswell, 2013).

External Audit

An external audit is when a person, who is not involved in the research process, examines both the process and product of the research study (Creswell, 2013). The purpose of this process is to evaluate the accuracy and to assess whether the findings, interpretations, and the conclusions are supported by the data (Schwandt, 2007). This process is important because it provides an opportunity for an outsider to challenge the process and findings of a research through his or her assessment of adequacy of the data and preliminary results; in addition, it can lead to the provision of important feedback, which can lead to additional data gathering and the development of stronger and better-articulated conclusions (Creswell, 2013).

Reflexivity

Reflexivity takes place when the research process is used as a focus of inquiry in order to expose pre-conceptions and become aware of the situational dynamics in which the interviewer and the respondent are jointly involved in knowledge production (Gall et al., 2007). Reflexivity is important because it provides the researcher an opportunity to examine the relationship to the respondent and how the relationship dynamics affected responses to questions. According to Gall et al., also, the use of reflexivity allows the researcher to present a rich, thick, and descriptive narrative that can be used to convey the research findings.

Member Checks

Member checks are also known, as informant feedback or respondent validation (Rudestam & Newton, 2001). This is a technique used by researchers to help improve the accuracy, credibility, validity, and transferability of the findings of the study. During this process, participants have the opportunity to reduce or clarify any unwanted or unclear sections of the transcript that do not relate to their perceptions (Creswell, 2013).

Ethical Considerations

It is essential that the researcher present the study as worthwhile. During this process, the researcher ensured that the rights of all participants were protected throughout the study. Applicable steps were taken to ensure that all individuals associated with this research study, including research participants, were fully informed concerning the purpose and any intended use of the findings. For this study, an informed consent form was developed to reflect the purposes and goals of the study, in addition to the rights of the individuals. The confidentiality of the participants was assured by the use of pseudonyms for each participant and site location. The confidentiality of responses remained private and respected in all forms of communication and/or written documents. All participants were informed that their participation was voluntary, and that no compensation would be provided. All participants were informed that they have the right to withdraw from the study at any time. The researcher made every attempt to produce work, which was honest and sensitive to power imbalance; that is, there were no leading questions or sharing of personal beliefs or experiences.

Summary

This study sought to describe special education teachers' experiences with the implementation of the iPad as an instructional tool for students with intellectual disabilities.

This chapter provided a clear description of the transcendental phenomenology: (a) research design, (b) data collection methods, (c) data analysis procedures, (d) trustworthiness, and (e) ethical considerations. All information included in this chapter were aligned with the research questions that guided this study.

This chapter began with a description of the setting at a North Carolina school district. This provided a framework for understanding the site of the study. Procedures for conducting this study began with Liberty University's IRB and site approval. A purposeful sampling was used to identify the special education teachers who used the iPad as an instructional tool to participate in the three data collection methods: interviews, focus groups, and observations. The three identified methods of data collection was resulted in triangulation of the data.

One of the most essential components of this study was guided by Moustakas' (1994) procedures, which included bracketing, horizonalization, cluster of meaning, in addition to textual and structural descriptions. The data analysis procedures were ensured trustworthiness, triangulation of data, providing external audit, reflexivity, and member checks, which guaranteed credibility, transferability, dependability, confirmability, and overall quality of the study (Schwandt, 2007). This chapter concluded with ethical considerations, which ensured the rights of all participants were protected throughout this study.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this phenomenological study was to describe the lived experience of special education teachers, who implemented the iPad as an instructional tool for elementary students with intellectual disabilities at a school district in the eastern tier of North Carolina. This researcher sought to provide the rich and descriptive voice of special education teachers, who utilized the iPad as an instructional tool for elementary students with intellectual disabilities. This study, which was transcendental phenomenological design, was conducted in order to examine the instructional strategies and to describe the perceptions of 11 special education teachers' experiences as they used the iPad with learners with intellectual disabilities.

To develop an understanding of the lived experience of the phenomenon shared by these special education teachers, the data were collected from the participants' narratives were analyzed to interpret the thematic analysis (Creswell, 2013). Moustakas (1994) reported that analysis of such narrative can represent the essence of their experiences. Also, Moustakas noted that it was important for researchers to demonstrate conformity with standard. Also, in order to prevent any disclosure of my own experiences, judgements, and biases, the concept of epoche (or bracketing) was utilized in order to understand the participants' experiences through their own perceptions (Moustakas, 1994).

Selecting a transcendental phenomenology study provided an opportunity to analyze the data by reducing the information to significant statements or quotes in addition to coalescing the statements into themes (Creswell, 2013). The themes identified in this study provided a textural description of the special education teachers' experiences, as well as a structural description of

how they experienced implementation of the iPad as an instructional tool in terms of context (Creswell, 2013).

This study was guided by one central question and three sub-questions. The central question that guided this study was:

What are the special education teachers' shared experiences in their implementation of the iPad as an instructional tool for elementary students with intellectual disabilities?

The three sub-questions that guided this study were as follows:

Sub-Question One: How do special education teachers describe their experiences with the integration of iPads to meet the educational needs of elementary learners with intellectual disabilities?

Sub-Question Two: How do special education teachers describe their technological awareness and their ability to integrate the iPad as an instructional tool for elementary students with intellectual disabilities?

Sub-Question Three: How do special education teachers describe their instructional strategies for the use of the iPad as an instructional tool to enhance the teaching and learning process for elementary learners with intellectual disabilities?

Participants

Eleven participants, with a broad range of teaching experience, agreed to participate in this research study. The participants were selected from a school district in the eastern tier of North Carolina, which is the 20th largest educational setting in the state of North Carolina of a total of 115 school systems. The participants were selected from four schools, because they has implemented iPads with elementary learners with intellectual disabilities.

After obtaining permission from the selected school district, I discussed the study with the special education teachers who use the iPad as an instructional tool and provided consent forms to those who indicated their interest to be a participant in the study. A prerequisite for participating in the study was to have a current state-issued teacher's license to teach students with intellectual disabilities. Participants in the study ages ranged from 30-60 years old. The participants' level of education ranged from Bachelor's to Master's degrees. One participant was a National Board Certified Teacher. Each participant taught students, who were identified with a profound, severe, mild, or moderate intellectual disability, and the class sizes ranged from 9-28 students. The participants' teaching experiences ranged from 2-30 plus years. All participants have used the iPad as an instructional tool from 1 month to 4 years.

A total of 11 elementary special education teachers agreed to participate in the research study. Each participant took part in a one-on-one, face-to -face interview, which consisted of in-depth open-ended questions. Second, each participant participated in a 45 minute observation in their classroom, which provided the researcher the opportunity to witness the lived experiences of the special education teacher with the implementation of the iPad as an instructional tool for elementary students with intellectual disabilities. Finally, three focus groups were conducted. The first focus group included 5 participants, the second focus group included 3 participants, and the third focus group also included 3 participants. Pseudonyms were assigned to maintain the participants' confidentiality. Presented in Table 2 is an overview of the participants' age range, gender, highest level of degree, teaching experiences, how long they have used the iPad as an instructional tool, and the number of students in their classroom.

Table 2

Participant's Overview

Participant (pseudonyms)	Age	Gender	Highest Level of Degree	Teaching Experiences	Years using the iPad	Number of Students
Aaliyah	50s	F	Bachelor's (NBCT)	30 + years	1-11 months	15
Abby	50s	F	Bachelor's	21-25 years	1-11 months	10
Abigail	40s	F	Bachelor's	0-5 years	1-11 months	21
Brenda	50s	F	Master's	6-10 years	2-4 years	14
Carissa	50s	F	Bachelor's	16-20 years	1-2 years	28
Chloe	50s	F	Bachelor's	21-25 years	2-4 years	9
Jackson	40s	M	Master's	16-20 years	2-4 years	9
Jasmine	50s	F	Master's	21-25 years	2-4 years	10
Karen	20s	F	Bachelor's	0-5 years	1-2 years	9
Kellie	40s	F	Bachelor's	0-5 years	1-2 years	10
Nicole	40s	F	Bachelor's	21-25 years	1-11 months	9

Portrait of Participants

Presented is an individual synopsis of each participant in this study. This synopsis details each participant's teaching history and their teaching philosophy in regard to the use of the iPad as an instructional tool for students with intellectual disabilities. In order to precisely portray the special education teachers' voice, I included verbatim quotations, including any grammatical or spelling errors.

There were 11 elementary special education teachers recruited for this study. All special education teachers had 5 or more years of experience teaching students with intellectual disabilities. In addition, each special education teacher was currently engaged in some type of inclusionary instruction or activity using the iPad with students.

Aaliyah. Aaliyah has a Bachelor's in Science Degree in Elementary Education with a minor in Special Education and a certification in Mental Disabilities. Also, she has National Board Certification in Early Childhood through Young Adulthood Exceptional Needs Specialist. Aaliyah has taught children with exceptional needs for 10 years and adults with exceptional needs for 25 years. When she reflected on why she chose to become a special education teacher, Aaliyah shared:

> My desire for teaching students with disabilities reach back to my daughter. She was born with Down Syndrome. Through her, I have learned to be patient and learned what was truly important in life. My daughter graduated from High School in 1997. She teaches us every day that having the love of God, faith, good health, and encouragement is truly important in life!

Aaliyah's teaching philosophy is to educate all students. She believes forming partnerships and the modification of lessons by the incorporation of technology devices such as the iPad can enhance students' learning, which will mold students to be independent citizens in their community. Aaliyah stated, "This partnership relies on communication, commitment, and incorporating learning modality such as the iPad as an instructional tool to aid students' learning." Aaliyah considers it is important for everyone to cheer with the successes and to encourage with the mistakes.

Abby. Abby has been an educator for 24 years. She has a Bachelor's degree in Special Education with a minor in Art Education. Abby began her teaching career as a parent volunteer. When she reflected on why she chose to become a special education teacher, Abby stated:

> My desire for teaching students with intellectual disabilities rooted from my son. I have a son that is diagnosed with the Asperger's Syndrome and Epilepsy. When he was 3 years old, I use to be a parent volunteer at his school. During that time, I gain a passion for working with special needs students. While working with students with special needs, I became a parent volunteer at my son's school and later became an instructional assistant at a preschool. While working as an instructional assistance, I received credentials to become a special education teacher specializing in art education.

Abby's teaching philosophy is to work with all students the way she would like people to work with her son. Abby believes there is no wrong way to complete tasks. She also believes that all educational tasks can be modified to enhance students' learning. Abby emphasized the importance of using the latest technology trend such as iPads to modify students' teaching and learning materials. Abby stated, "All students have the ability to learn with modification implementations." As a special education teacher, Abby identified the iPad as an instructional tool that serves as a benefit to enhance students' ability to complete tasks. Abby stated, "Each day is a brand new experience for the students and myself and all tasks are possible with technology such as the iPad."

Abigail. Abigail has been teaching students with intellectual disabilities for 5 years. This is her third year at her current school. Abigail graduated with a Bachelor of Science in Psychology and returned to school a few years later to obtain a second Bachelor's degree in

Special Education. When she reflected on why she chose to become a special education teacher, Abigail shared:

> I believe all students can learn, no matter of their disability. I think educating students with intellectual disabilities is healing. I feel it is important to use technology such as the iPad to develop students' interest and enhance their academic skills. I feel developing unique techniques to enhance the learning of students with intellectual disabilities is an explosive expression of humanity. I am touched to discover new and innovative techniques to enhance students' learning by incorporating instructional technology devices such as the iPad.

Abigail's teaching philosophy is to help students with special needs to problem solve, be responsible, become independent, and to become life-long learners. She believes it is important to integrate technology devices such as the iPad to engage students in lessons along with having fun along the way. Abigail stated, "I am committed to teaching all students with intellectual disabilities by building upon their ability level and differentiating their lessons to meet their academic needs**.**"

Brenda. Brenda has taught Grades K-3 exceptional children for 10 years. She has a Bachelor of Science in Special Education and a Master's degree in Elementary Education. Currently, Brenda is pursuing her National Board Certification in Early Childhood through Young Adulthood Exceptional Needs Specialist. When she reflected on why she chose to become a special education teacher, Brenda stated:

> While student teaching, I learned that teaching students who have special needs is my passion. I love to teach and believe that all students can learn.

Brenda's teaching philosophy is that every child can and will learn, when given a structured and supportive environment. Brenda believes that each student may not learn at the same pace, and each student's style of learning may be different; however, each student's instructional path should be addressed individually. Brenda identified the iPad as an important instructional tool to individualize students' learning styles. Brenda stated:

> The iPad as an instructional tool that brings education to life and makes learning more interactive, engaging, and memorable. It is my objective to teach each student on an individual based and/or in a small group. I have noticed that the iPad has changed my students' way of learning in addition to have provided a structured and supportive learning environment for each student.

Carissa. Carissa has taught Grades K-6 students with intellectual disabilities for 20 years. She has a Bachelor of Arts in Sociology (e.g., concentration: Criminal Justice) degree. She later completed the teacher's licensure program with a concentration in Language Arts, Social Studies, and Special Education. When she reflected on why she chose to become a special education teacher, Carissa reported:

> I have always had a passion for individuals with special needs. Before I became a special education teacher, I was a Mental Health Case Manager for Easter Seals UCP. During that time, I established a closer relationship with individuals with special needs and that is when I developed a desire to become a special education teacher. I love teaching!

Carissa's teaching philosophy is that the implementation of technology in educational settings is imperative in the 21st Century. Technology has become a part of everything we do; therefore, I feel that it is the key to a bright & successful future! I strongly believe that implementing technology devices in educational settings of students with intellectual disabilities

are the most valuable technology, instructional tool that can be used to enhance students' academic abilities.

Chloe. Chloe is an exceptional children teacher. She has a Bachelor's degree in Psychology and a second Bachelor's degree in Special Education. This is Chloe's eighth year teaching at her current educational site. She has an overall average of 25 years teaching students with intellectual disabilities. When she reflected on why she chose to become a special education teacher, Chloe noted:

> I have had previous experience working with students with intellectual disabilities as a volunteer at a school. I also worked in a Title I school as a tutor in an exceptional children self-contained and resource classroom for 3 years. These experiences inspired me to become a special education teacher.

Chloe's teaching philosophy is to gain lots of knowledge and to modify her knowledge to enhance students' academic skills. Chloe believes it is imperative to work closely to make sure each student has all of the supports and resources that he or she needs to be successful. She also believes that it is important to modify students' lessons to assist them to academically progress to their fullest. Chloe believes it is important to incorporate technology such as the iPad to support students learning. She went on:

> The iPad is a great instructional tool to stimulate students' educational needs to enhance their academic progress. It is my desire to see all of my students succeed and to leave my class with confidence. It is also my desire to teach my students to be the best they can be and most importantly, as independent as possible.

Jackson. Jackson has an undergraduate degree in Special Education and a Master's degree in Education Technology. Jackson has 18 years of experience serving individuals with

special needs. When he reflected on why he chose to become a special education teacher, Jackson shared:

> I enjoy helping students improve their academic skills through a variety of hands-on activities, games, musical actions, and forming intensive instruction in a small group setting.

Jackson's teaching philosophy is to ensure all means are taken to achieve students' academic needs. During this process, Jackson is constantly assessing formally and informally in order to accomplish the needs of each student. Jackson expressed his desire to strive constantly to keep the curriculum interesting and achievable. He stressed the importance of modifying the curriculum frequently to meet the needs of each student along with researching methods to improve and/or strengthen students' instructions. Jackson believes communication and incorporating instructional tools such as the iPad to modify students' instructions promotes learning. Jackson stated, "It is my goal to create a stronger and more knowledgeable student."

Jasmine. Jasmine has a Master's degree in Special Education (i.e., Cross Categorical and Educable Mentally Handicapped). She has been teaching at her current school for 25 years. When she reflected on why she chose to become a special education teacher, Jasmine shared:

> I have a passion for helping and inspiring others, which led me to pursue a career in teaching.

Jasmine's teaching philosophy is that all students can learn. She identified technological devices, such as the iPad, as versatile, powerful tools, which can be used to change teaching and learning in educational settings. Jasmine considers that iPads**,** as an instructional tool**,** offers a diverse teaching method to deliver instructions and engage students in learning.

Jasmine also expressed her belief in each and every single one of her students. As a teacher, she thinks it is important to uplift students before teaching them anything. She believes students learn better, when they sense the teacher's confidence in them. In her instructional area, Jasmine has incorporated iPads to prepare students to be READY. She identifies READY as an acronym for Responsible, Eager, Amazing, Driven, Youth.

Karen. Karen is a second year special education teacher. She has a Bachelor's degree in Journalism with a minor in Psychology. She also has an Associate's degree in Telecommunications and certification to teach students with intellectual disabilities. When she reflected on why she chose to become a special education teacher, Karen reported:

> I have several years of experience working with special needs students, but teaching was not my first passion. I was a writer for a children's hospital where I photographed and made short biographies for the children who had operations to generate funds for their surgeries. Before that, I previously worked as a care provider for children with special needs. Upon moving to North Carolina, I was a substitute special education teacher for students with intellectual disabilities. With my overall experiences, it became my desire to become a special education teacher.

Karen's teaching philosophy is to ensure each student works to their highest potential in the 21st Century in their educational setting. It is Karen's desire to ensure that her students go on an educational adventure of higher order thinking, soaring beyond expectations through the use of: (a) student friendly collaboration, (b) differentiating instructions, (c) emergence of creativity, and incorporation of assistive technology in the students' core curriculum. Karen believes technology devices such as the iPad are essential instructional tools to prepare students

to become critical thinkers in the 21st Century classroom. Karen indicated that use of these components guide students to become excited and happy learners.

Kellie. Kellie is an exceptional children teacher. She has been a classroom teacher at her current school for 3 years. Kellie has a Bachelor of Arts Degree in Psychology, Justice Studies, and Religion. She also has a Master's degree in Special Education Cross Categorical. When she reflected on why she chose to become a special education teacher, Kellie observed that:

> Prior to becoming an exceptional children teacher, I was a mentor for three boys for 14 years (two were diagnosed with hearing and speech impairment and one diagnosed with a hydrocephalus head along with ADD). In additional, I worked at a residential center for individuals with intellectual disabilities for 19 years in several capacities (Meal Program Coordinator, Health Care Supervisor I, Health Care Technician II, Health Care Technician I, and an Environmental Technician I). I truly enjoy working with special need students.

Kellie's teaching philosophy is helping students reach their maximum potential. In the educational classroom, there are not any two children who are alike and there are not any two children who learn in the same manner. Kellie also stated:

> I believe differentiating students' instruction is very essential. During this course of action, I believe striving for academic excellence and building upon a student's foundation using 21st Century skills consists of keeping up with the latest technology that interests students. I strongly feel implementing technology devices in students' core curriculum is one of the latest developments in the 21st Century educational setting. I consider the steps to strive for academic excellence in the 21st Century classroom is to promote safety first and to next incorporate instructional tools such as the iPad to enhance

students' academic skills. It is my desire to teach someone a skill and watch them master. That skill is what I call a success moment.

Nicole. Nicole has a Bachelor's degree in Special Education. She has been a special education teacher for 22 years. Prior to becoming a certified special education teacher, Nicole taught preschool students with developmental disabilities for 5 years. When she reflected on why she chose to become a special education teacher, Nicole shared:

> I've always worked in some capacity with special needs individuals, and I love it. It is my desire to help pull out and transform students' academic capability to assist them to become the best possible student they can be.

Nicole's teaching philosophy is that all students are capable of learning. She indicated it is imperative for educators to modify and adjust lessons to discover each student's distinctive learning styles. Nicole identified the iPad as an instructional tool to allow students to take control of their own learning in addition to comprising educational programs that can be tailor made for each student's learning style. Nicole indicated that it was important to identify each student as an individual**,** and to ensure each student is prepared and ready to rise to his or her full potential.

Results

The purpose of this study was to describe the lived experience of 11 special education teachers, who implemented the iPad as an instructional tool for elementary students with intellectual disabilities. The special education teachers' lived experiences were obtained through data collection of verbal data from individual interviews, classroom observations, and focus group discussions. Data saturation was considered to be achieved when the participants' responses became redundant, and new information was not available. The techniques, which

were developed by Husserl (1964; i.e., bracketing) and Moustakas (1994) (i.e., horizonalization), were used in this study. As a special education teacher of students with intellectual disabilities, bracketing (or epoche) allowed me to block my personal experiences and set aside any preconceptions in regard to the phenomenon under investigation. Horizonalization was used to identify a description of the shared experiences between the special education teachers and the phenomenon. Also, during this process, themes emerged, which were used to construct textural descriptions.

All collected data from this research were transcribed verbatim and analyzed with use of Moustakas' (1994) transcendental phenomenological reduction technique. During this process, common themes evolved from the special education teachers' shared experiences of their use of the iPad as an instructional tool for elementary students with intellectual disabilities. The common themes were identified through recognition of notable statements, and by the use of notes about the key patterns, which were present in the participants' data. The participants' statements were grouped into units and assigned codes, which left only the horizons "or statements relevant to the topic and questions as having equal value" (Moustakas, 1994, p. 118). Next, the clusters of meaning were discernable among the coded statements, which reduced to four themes. These themes were: (a) desire for knowledge, (b) desire for support and guidance, (c) supportive educational advantages, and (d) teaching through challenges. These individual themes, in addition to textural and structural descriptions**,** described the essence of the special education teachers' shared experience (Merriam, 2009; Moustakas, 1994). Through use of these phases, the phenomenon and the meanings of the research questions were analyzed. The first collection technique tool were the individual interviews with all 11 participants.

Interviews

Each of the 11 special education teachers, who had used the iPad as an instructional tool for students with intellectual disabilities**,** participated in one-on-one, face-to-face, and in-depth interviews. All interviews were conducted on their school campus at a location of the participants' selection. The times at which the interviews occurred varied from 7:15 a.m. to 7:30 p.m., which was selected by each participant for their convenience. Each participant was asked 15 standardized open-ended interview questions, which were based in the literature review. The questions remained the same throughout each interview. Probing questions were used during the interview as needed. The probes stimulated an informant to respond with more details. The final interview question provided each participant the opportunity to elaborate on any information he or she felt was relevant to the study. To ensure accuracy, all interviews were audiotaped with each participant's consent. Each interview lasted from 45 minutes to 1 hour.

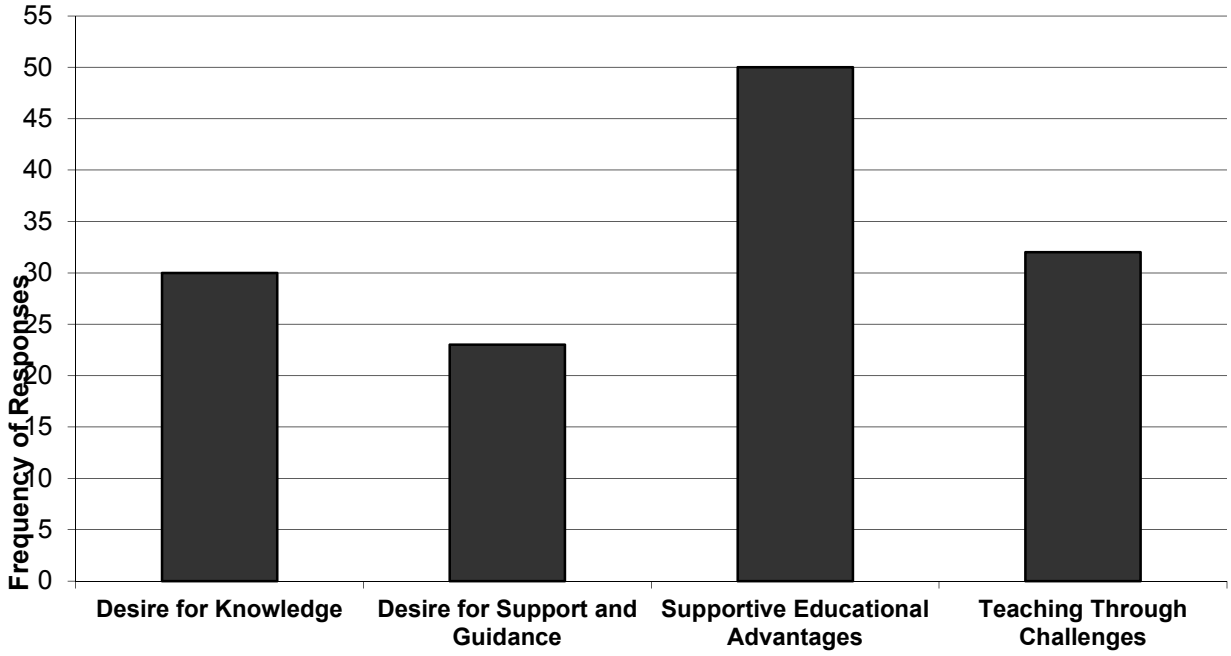
Prior to conduct of the interview, a pilot interview was conducted with a special educator expert who was not a participant in the study. This interview allowed the researcher to verify the accuracy and meaning of the interview questions, but to: (a) test the appropriateness of the questions, (b) test the timing, and (c) to provide practice in asking, and recording the participants' responses.

Each of the participants' interviews was literally transcribed and sent to the them for member checking, which allowed the researcher to verify the: (a) accuracy, (b) credibility, (c) validity, and (d) transferability of the study. During the process of member checking, each participant was asked to review their responses in order to clarify their replies and to make any changes, if necessary, to agree with their transcript. The participants were asked to call or email the researcher their responses in regard to their interview transcript. All the participants agreed

with the veracity of their transcript; however, two participants made a few grammatical adjustments. Data from the interviews were then analyzed with the use of Moustakas' (1994) techniques. The individual interview questions are located in Appendix I.

Four themes were identified in this study. These themes were characterized as: (a) desire for knowledge, (b) desire for support and guidance, (c) supportive educational advantages, and (d) teaching through challenges. Each of these themes evolved from the codes, which were developed from the participants' interview responses. Since the responses for the themes were extensive, they are presented in Appendix K.

Figure 1. Participants' interview responses.



Theme three was the predominant code, which occurred 50 times during the interview. Theme four was the second most mentioned code, which occurred 32 times. Theme one occurred 30 times, and theme two occurred 23 times. There were a total of 135 codes that occurred within the participants' interview.

Classroom Observations

Each of the 11 special education teachers, who experienced use of the iPad as an instructional tool for elementary students with intellectual disabilities**,** participated in one scheduled observation. All observations were conducted in the special education teachers' classroom. The times at which the observations occurred varied from 8:15 a.m. to 3:30 p.m.; each teacher chose a time, which was convenient for them.

During the classroom observations, the researcher was able to experience the special education teachers, as they implemented the iPad as an instructional tool for elementary students with intellectual disabilities in a real-life teaching situation. Also, the researcher could witness the differentiated instructional strategies employed by the special education teachers. During this process, the researcher had the opportunity to spend time with the "participants in their proximity, as they experienced the phenomenon" (Moustakas, 1994; Patton, 2002).

In the conduct of each observation, the researcher was identified as "an outsider to the group, who observed and took field notes" (Creswell, 2013, p. 167). During the interviews, the researcher was able to collect data only from the participants' perspectives, direct observations were an important component of data collection. According to Gall et al. (2007), observations allow researchers the opportunity to "formulate their own version of what is occurring and then check it with the participants" (p. 276). Creswell (2013) described observations as the "process of gathering open-ended, firsthand information by [the] observation [of] people and places" (p. 213).

During each observation, an observational protocol/template was used to consistently note the observations (see Appendices G and H). The observational protocol tool provided the researcher the opportunity to document descriptive and reflective notes about the special

education teachers' experiences with current practices**,** as they used the iPad as an instructional tool. Also, during the observations, the researcher was able to view the special education teachers' non-verbal communications, such as their body language**.** In addition, she was able to document detailed accurate descriptions of what was seen, heard, and experienced during the observation. The data collected in the reflective notes allowed the researcher to build on the descriptive field notes and reflect on the learning experience. Overall, use of the observational protocol/template ensured that all actions were recorded accurately with use of both descriptive and reflective notes (see Appendix H for the observational protocol form). In addition, use of the form allowed the researcher to capture the physical setting and describe all events as they were seen and heard (Creswell, 2007). Each classroom observation lasted for 45 minutes. All observations were videotaped. All notes from the observational protocol form were recorded in a field notebook and transferred to the researcher's password protected hard drive.

The classroom observation provided the researcher the opportunity to observe the special education teachers' experiences**,** as they implemented the iPad as an instructional tool in their work environment. An observation overview was developed, which provided the following information about the participants in this study: (a) the students' cognitive impairment, (b) subject(s) taught, (c) instructional time, (d) students' participation, (e) teachers' comfort level, and (f) the students' access to the iPad.

The observation overview of the special education teachers' current caseload is provided in Appendix M. The majority of the special education teachers taught a mixture of students with moderate, severe, or profound cognitive levels and three special education teachers taught only students with a mild cognitive level. Six special education teachers' instructional time were 16-30 minutes a day, four were 15 minutes a day, and one special education teacher's instructional

time was 31-45 minutes day. The majority of the students with intellectual disabilities, who were observed in this study, used the iPad independently, several students required prompts, and other students required hand over hand guidance to use the iPad. The special education teachers' self-reported comfort level on a scale of 1-10 (i.e., 1 is lowest) was: (a) one special education teacher's comfort level was on a scale of 10, (b) one special education teacher was 6, (c) one was 5, (d) one was 5, (e) one was 3, (f)) two were at 4, (g) two were at 8, (h) two were at 9, and (i) three were at 8.

Displayed in Appendix N are the iPad applications and adaptive devices that the 11 special education teachers were observed using during their classroom observation. They were observed using various iPad applications for elementary students with intellectual disabilities. The iPad applications that were used by multiple special education teachers were: (a) Look2learn, (b) Proloquo2go, (c) iConverse, (d) Adobe Voice, (e) Class DOJO, and (f) Word. These iPad applications were used to enhance and develop their students' communication skills. Other applications, which were in use, were: (a) Starfall, (b) ABC Mouse, (c) PBS KIDS, (d) You Tube, (e) Reading Eggs, (f) Ninja, (g) web pages, and (h) virtual sites. These iPad applications were used to teach students to adapt to situations and to develop social skills. During the observation, the documented special education teachers' iPad application awareness: (a) five special education teachers were somewhat aware, (b) two special education teachers were considerably aware, (c) two special education teachers were partially aware, and (d) two special education teachers were very aware. In conclusion, the following adaptive devices were observed during the special education teachers' implementation of the iPad: (a) smartboard, (b) iPad holder, (c) computer, (d) Bright Link PC projector, (e) ear buds, (f) a pointer, (g) a floor stand, (h) easels, (i) student's desk, and (j) a small table. One special education teacher held the

iPad for the student, and there were four special education teachers, who did not use any adaptive devices in the use of an iPad as an instructional tool.

Focus Group Discussions

After completion of the special education teachers' individual interviews and classroom observations, each participant was asked to participate in a focus group discussion. Creswell (2013) identified a focus group as the procedure of "collecting data through interviews with a group of people" (p. 218). Participation in the focus groups allowed these teachers to engage in meaningful and mutual discussion, and they provided ideas that were not discussed in the interviews.

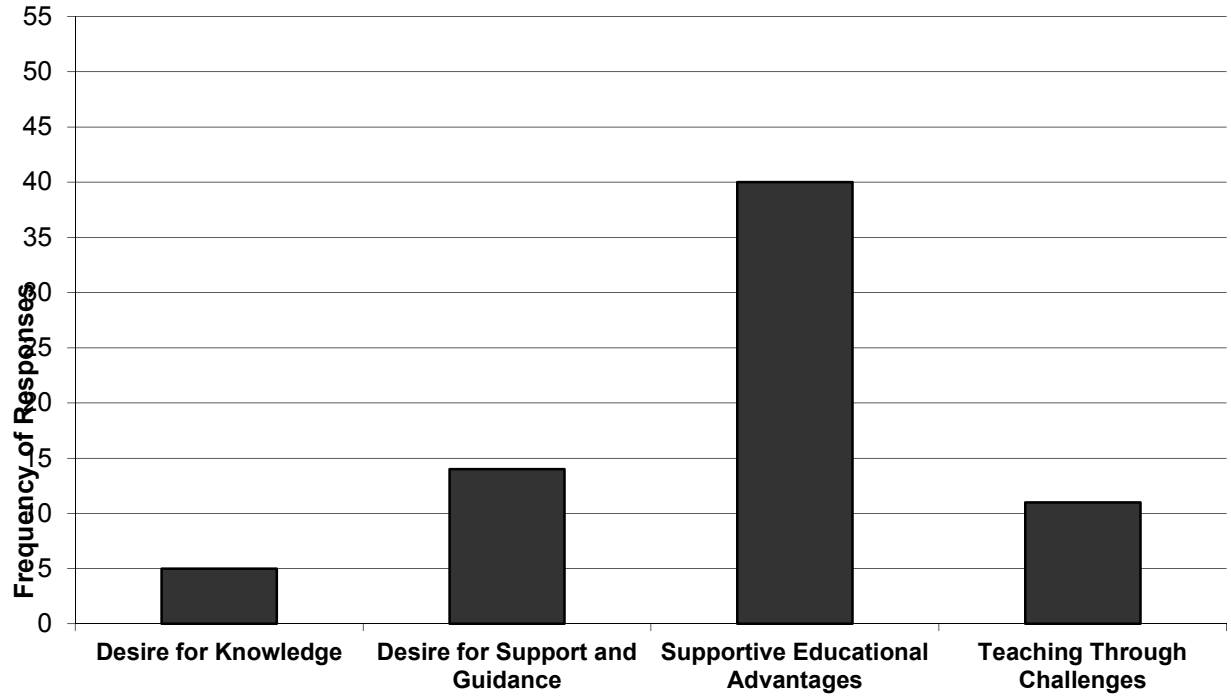
Also, during the focus group discussion, the researcher was able to collect additional data about the shared experiences of these special education teachers, who implemented the iPad as an instructional tool for elementary students with intellectual disabilities. During the focus groups, the researcher participated in a non-directive role, but did facilitate the discussions among the participants (Gall et al., 2007). The data from the focus group discussions were advantageous and allowed the researcher to be more confident about the patterns that emerged from the participants' individual interviews (Patton, 2002). A thick and rich description of the phenomenon was developed as the participants interacted and discussed each other's responses in addition to their considered views (Patton, 2002).

The focus group occurred at a neutral location, after school. The times at which the focus group discussions occurred varied from 4:15 p.m. to 7:15 p.m., which was agreed upon by the participants for their convenience. The participants were asked 10 standardized open-ended questions, which were based in the literature. The questions were the same for each focus group discussion. During the focus group discussion, probe questions were utilized to clarity a

response and to stimulate an informant response's to produce more details. There were three focus group discussions conducted, which consisted of three to five participants. Each focus group discussion lasted a maximum of 1 hour 15 minutes. To ensure accuracy, each focus group discussion was audio recorded with the participants' consent. The focus group questions are displayed in Appendix J.

All four themes identified in this study were discussed during the focus group discussion. These themes were characterized as**:** (a) desire for knowledge, (b) desire for support and guidance, (c) supportive educational advantages, and (d) teaching through challenges. Each of these themes was identified by the codes, which were developed from the participants' responses during their focus group discussion. The codes, which occurred during the focus group discussion, are presented in the order they occurred, and the theme that developed from each code (see Appendix L).

Figure 2. Participants' focus group responses.



As with the interviews, Theme three was the most frequently discussed code, which occurred 40 times during the focus groups. Theme two was the second most discussed code, which occurred 14 times. Theme four occurred 11 times and theme one occurred 5 times. There were a total of 70 codes that occurred during the focus groups.

Themes

After data from the individual interviews, classroom observations**,** and focus group discussions were collected and transcribed, meaningful statements were identified. Four themes were developed from the statements, which formed the shared essence of the special education teachers, who used the iPad as an instructional tool for elementary students with intellectual disabilities. The four themes were:

1. A Desire for Knowledge (e.g., professional development, self-taught experiences, and learning from others);
2. A Desire for Support and Guidance (e.g., lesson planning time, funds for materials applications and assistive technology devices, and vast resources);
3. Supportive Educational Advantages (e.g., instruction differentiation, student motivation and Engagement, enriched teaching, and student collaboration); and
4. Teaching through Challenges (e.g., iPad usage based on students' instructive need**,** need for substantial number of iPads**,** and 24/7 technical support).

These themes described the shared experiences of the special education teachers, who used the iPad as an instructional tool for elementary students with intellectual disabilities. Each special education teacher's statement was quoted to support the documented themes. Displayed in Table 3 is the enumeration of open-code appearance through data sets in relation to the four identified themes.

Table 3

Enumeration of Open-code Appearance across Data Sets in Relation to Themes

Open –Codes	Open-code Appearance across Data Sets	Themes
Professional Development	16	A Desire for Knowledge
Self-Taught (Experiences)	12	
Learning from Others	11	
Lessons Planning Time	6	A Desire for Support and Guidance
Funds for Materials (Applications and Assistive Technology Devices)	16	
Vast Resources	12	
Instruction Differentiation	19	Supportive Educational Advantages
Student Motivation and Engagement	34	
Enriched Teaching	28	
Student Collaboration	9	
IPad Usage Based on Students' Instructive Need	9	Teaching through Challenges
Need Substantial Number of IPads	21	
24/7 Technical Support	12	

A desire for knowledge. The special education teachers' desire for knowledge was identified as the first theme in this study. This theme was noted throughout the data with repetition of the following open-codes: (a) professional development, (b) self-taught-experiences, and (c) learning from others. Special education teachers have a desire for

knowledge, which is vital for students' success in their use of the iPad as an instructional tool. This researcher described the special education teachers' shared experiences implementing the iPad as an instructional tool for elementary students with intellectual disabilities. The participants in this study discussed the importance of: (a) attendance at professional development symposia to stay aware of new research on how elementary students with intellectual disabilities learn, (b) keep up-to-date with new iPad application developments, (c) gain knowledge about the use of AT devices for students' instruction, and (d) remain current with new curriculum resources related to the iPad. Documented below are some of the meaningful narratives from the participants about the topic.

Aaliyah. In today's classrooms, teachers are identified as a role model in addition to a subject developer for their students. With this said, I believe it is imperative for teachers to seek learning opportunities through continual professional developments and trainings to bring new knowledge to their educational setting. Personally, I believe a teacher's role as a subject disseminator, which is also highlighted by concentrating on the "good teacher," who in an inspiring way, stimulates and motivates his/her students for learning. I believe many veteran teachers are threatened by technological devices such as the iPad. It is important for all teachers to participate in technology professional developments to develop an ease and to familiarize ourselves with 21st Century teaching devices. The way I see it, technology is changing our classrooms and making our role different in the classroom.

Abby. As a special educator, I am always striving to improve my teaching skills to educate students with intellectual disabilities. In recent years, many things have changed at an incredibly rapid pace such as using iPads to teach students along with teachers using iPads to

develop lessons. I think it is vital for me to keep up with all the changes to ensure my students' educational needs are met.

Abigail. I think the educational system is continuously challenged to offer students a better education. During this transformation, technological development continually opens up new possibilities and methods of learning, which makes it essential for all educators to have a desire for knowledge. Having a desire for knowledge prepares us to be effective educators along with teaching students using 21st Century instructional tools, such as the iPad.

Brenda. My role as a special education teacher is often full of countless challenges and the time constraints are very tight. However, it is my objective to provide the students I teach creativity and innovative learning opportunities, with that being incorporating technology devices into my lesson. Using the iPad is not my strongest area; therefore, I consider it is important for me to participate in ongoing trainings, consult with coworkers, or participate in various means of professional development, even if trainings are online. Participating and taking advantage of professional development opportunities provides me knowledge that will endow me comfort. Participating in professional development opportunities will also aid me to develop new teaching skills and most importantly, different methods to effectively teach my students.

Carissa. I believe ongoing professional development is important when teaching students with special needs. My notion in regards to special education teachers implementing new instructional tools such as the iPad in the classroom requires ongoing professional development. As a special education teacher, I believe it is important for educators to reflect through various teaching techniques and to determine the most apt teaching approach for students with intellectual disabilities. I consider special education teachers participating in

professional development as well as keeping abreast of the latest evolution via trainings and consulting with colleagues are key components regarding implementing new instructional tools.

Chloe. Technological devices such as iPads are continually changing the teaching approach in educational settings. As change occurs, I think it is important for special educators to keep abreast of the latest technology developments. I strongly believe without the special education teacher's desire to keep abreast of the latest technology developments, students will miss out on a variety of effective teaching strategies.

Jackson. With the rapid technological developments during the last few years, I believe it is important for special education teachers to feel competent to move forward with the new technology tasks in hand. I think it is important for all teachers to receive ongoing professional development in the subject area they teach. I believe ongoing professional development motivates teachers and provides us competence. I identify motivation and competence to be closely connected when teaching students with intellectual disabilities. I believe increased competence leads to increased motivation. With this said, I consider the interplay between special education teachers and their students are important. I consider seeking new knowledge results in positive interplay and commitment, which also provides students with intellectual disabilities motivation and effective instructions.

Jasmine. I consider implementing the iPad as an instructional tool for students with intellectual disabilities is influenced by teachers' educational experiences. In the 21st century, teachers are continually meeting new expectations and at times, many of us may feel a little burdened. Due to the rapid changes in technology, I believe it is extremely important for special education teachers to keep abreast of the latest technology trend, such as using the iPad as an instructional tool.

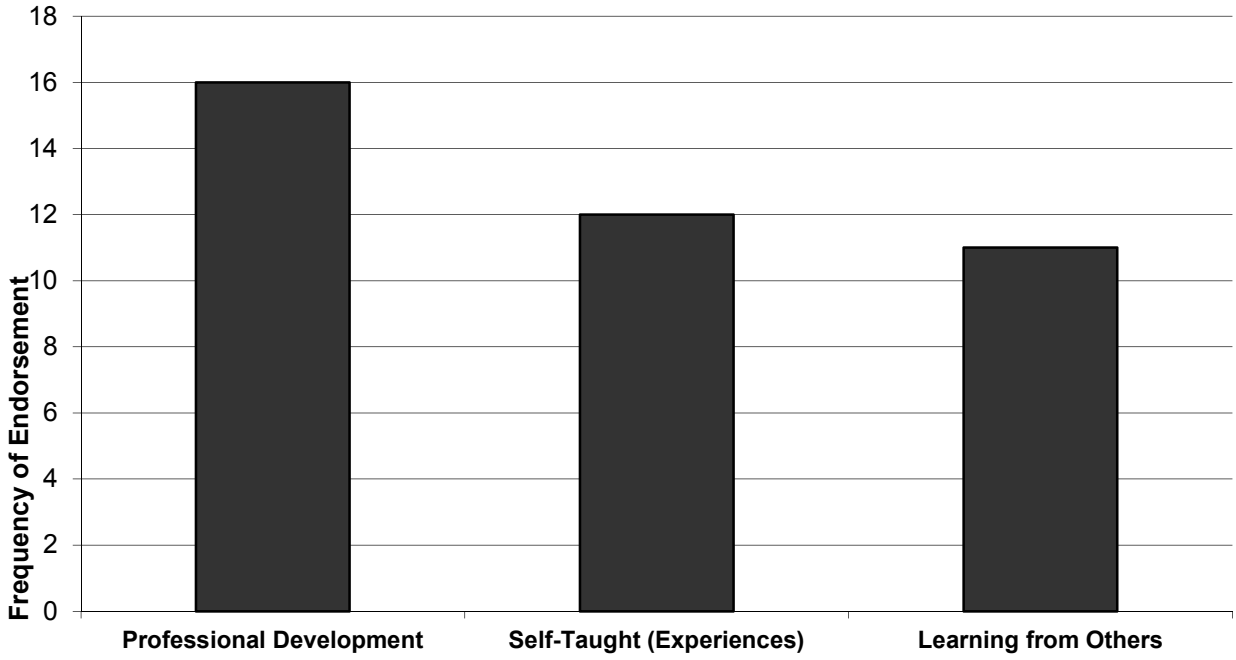
Karen. I consider, special education teachers participating in ongoing professional development, group trainings, or professional learning community trainings are the key to effective teaching. I believe effective teaching requires ongoing professional development, which situates advance demands and expectations on the teachers' instructional skills. During this development, special education teachers gain knowledge and acquire strategies to comprise ways to use the iPad as an instructional tool for students with intellectual disabilities verses teaching tasks with traditional learning methods.

Kellie. Implementing the iPad as an instructional tool is an important teaching approach in the 21st Century classroom. I consider implementing the iPad with students with intellectual disabilities must be carefully planned and put into a pedagogical framework. Foremost, implementing the iPad requires the teacher to possess good pedagogical and didactical knowledge and be able to educate students to promote learning processes. I consider participating in professional development, such as educational workshops, trainings, discussing methodologies with colleagues are important when teaching students. I think professional development provides educators knowledge and approaches to develop new techniques and teaching strategies to enhance students' learning.

Nicole. I consider professional development to be a controversial topic in education. I believe using the iPad as an instructional tool for students with intellectual disabilities requires specific teaching standards. I strongly believe appropriately implementing the iPad in special education classrooms will require teaching techniques that are substantially different from practices that are in place in a regular education classroom. I consider implementing the iPad as an instructional tool for students with intellectual disabilities, will take the time not just to teach those techniques, but also to give teachers a chance to implement the iPad as an effective

instructional tool. To be effective, I think professional development is required for all educators. I believe knowledge acquired through professional development may provide educators the opportunity to apply what they have learned to their teaching instruction. I really believe professional development leads to better instruction and improved student learning.

Figure 3. Desire for knowledge.



The first Theme of the three open-codes is displayed in Figure 3; the need for professional development appeared 16 times. Self-taught-experiences were the second open-code, which appeared 12 times. The learning from others was the third open-code, which appeared 11 times. There were a total of 39 open-codes that occurred during the theme one.

A desire for support and guidance. The second Theme identified in this study was a desire for support and guidance. Special education teachers discussed the use of iPads in their instructional settings for students with intellectual disabilities. They emphasized how implementation of the iPad for students with intellectual disabilities requires a range of support and guidance to scaffold student learning. They maintained that use of iPads helps make

knowledge accessible to students with intellectual disabilities, as well encourage them to engage with knowledge in altered methods.

A desire for support and guidance was mentioned in all three of the data collection methods. Given that the special education teachers provided a strong emphasis in this area, the desire for teachers to have support and guidance is considered a significant theme. The special education teachers identified a desire for support and guidance in the area of having lesson planning time; funds for materials (applications and assistive technology devices); and vast resources. The special education teachers strongly voiced their concern of not having adequate time for individual or collaborative planning, which they accentuated how iPads has been known to support student learning outcomes. The special education teachers also voiced their concern about having limited funds to purchase applications and assistive technology devices, which they stressed are required to educate the students along with ensuring the iPad is accessible for each student.

Aaliyah. Special education teachers use various techniques to promote learning. As a special educator, I believe one of the most common desire for support and guidance when using the iPad as an instructional tool in special education classrooms is having the funds to purchase applications and assistive technology devices. I think the lack of funding to purchase educational material touches every level of education and makes it particularly difficult to provide students effective instruction. I fervently believe one of the most critical steps to educate students with intellectual disabilities is for educators to ensure students have the necessary teaching materials to carry out their lessons.

Abby. I believe limiting funding in educational classrooms can mean restricting students' instructional training. Research indicates that iPads provide special education teachers

efficient teaching to educate students with intellectual disabilities. I consider having educational applications and adaptive devices related to the students' capabilities are key materials for effective teaching. I believe it is important for special education teachers to ensure instructional tools such as the iPad is accessible to each student. Most significantly, having available funds to purchase instructional materials for students with intellectual disabilities enables special education teachers to offer innovative and more effective methods of teaching. I also believe effective funding allows special education teachers the opportunity to individualize students' instruction in the broad range of their learning needs.

Abigail. I consider special education teachers has a great need for support and guidance in our instructional area. I think it is essential for special education teachers to be provided funding to purchase instructional materials. At this time, I have 21 students throughout the day and four to five students during a class period. I was issued one iPad with a few trial educational applications for instructional use in my classroom. Due to limited funding to purchase additional applications, I am forced to use recycled computers as instructional tools to deliver and facilitate learning. I think it is essential to have funds available to purchase more educational iPad applications. As a special education teacher, I feel very limited having to depend on trial iPad applications to teach students with intellectual disabilities.

Brenda. My desire for support and guidance are in the areas of funding and planning. I have one iPad to share with four students during a class period. I believe various lesson plans can be used universally; however, many special education lessons require modifications and crafting. I consider quality planning time and having additional iPads with a variety of educational applications important. I also believe being provided funds to purchase iPads and educational applications for each student along with incorporating additional planning time is

essential for special education teachers. Having time to individualize teaching materials along with having an iPad equipped with a variety of educational applications for each student's instructional needs results to effective teaching and learning in the classroom.

Carissa. My desire for support and guidance is in the area of planning. I like the idea of using the iPad as an instructional tool for students with intellectual disabilities. The truth is, implementing new technology such as the iPad takes a lot of planning time for some teachers. For example, I am not a tech savvy teacher. On a typical day, I spend my entire planning time adapting lessons to assist students to learn. With this done, my time is limited to exploring new technology such as the iPad. Most of the time, I use my personal time after work to explore iPad applications that are appropriate for my students. I think it is very important for more planning time to be allotted for teachers to explore using the iPad as an instructional tool for students with intellectual disabilities.

Chloe. As a special education teacher, we have always dreamed of having access to the most cutting-edge teaching tools to facilitate learning for all of our students. Over the past couple years the iPad has been identified as a device to provide effective instruction to students with intellectual disabilities. Overall, I feel iPads has become a natural instructional tool for students with intellectual disabilities; however, one of my major obstacles is receiving funds to purchase additional educational iPad applications for my classroom. At this time, I have one iPad with four educational applications installed to use with three students. It is very difficult to individualize lessons for students with intellectual disabilities having to share one iPad with only four educational applications downloaded on it.

Jackson. My desire for support and guidance is in the areas of funding and planning. I consider the iPad to be a great supplemental method of instruction. I feel it is important for

special education teachers to be provided instructional environments that accommodate learning, and to ensure enhanced and equitable learning situations for each student. I think it is very essential for teachers to have support and guidance in the areas of planning and funding. One of the most challenging things in my classroom is a few of my students have physical disabilities, which requires additional time for me to resolve iPad accessibility for those students. During this process, additional time for positioning the iPad is required and funds are needed to purchase assistive technology devices, which are necessary to ensure the iPad is accessible for each student.

Jasmine. I love the idea and having the opportunity to use iPads as an instructional tool for student with intellectual disabilities. My desire for support and guidance is in the area of funding. My school has issued me one iPad with approximately five downloaded applications to use with four students during a class period. My school has an iPad cart we share that has a variety of applications downloaded on them, if additional iPads are needed. Many days I am unable to check out the iPads for my students because the regular education teacher reserves them very frequently. I desire support and guidance for additional funds to purchase a cart of iPads with a variety of applications for students receiving special education services. Each student having access to an iPad with various educational applications during instruction, allows me the opportunity to individualize lessons to assist students to achieve their academic objectives.

Karen. My desire for support and guidance is in the area of planning. As a special education teacher, I feel it is very important for students with intellectual disabilities to be exposed to instructions using an iPad. I think using iPads as an instructional tool presents teachable moments for the teacher and their students. In my classroom, I have one iPad for

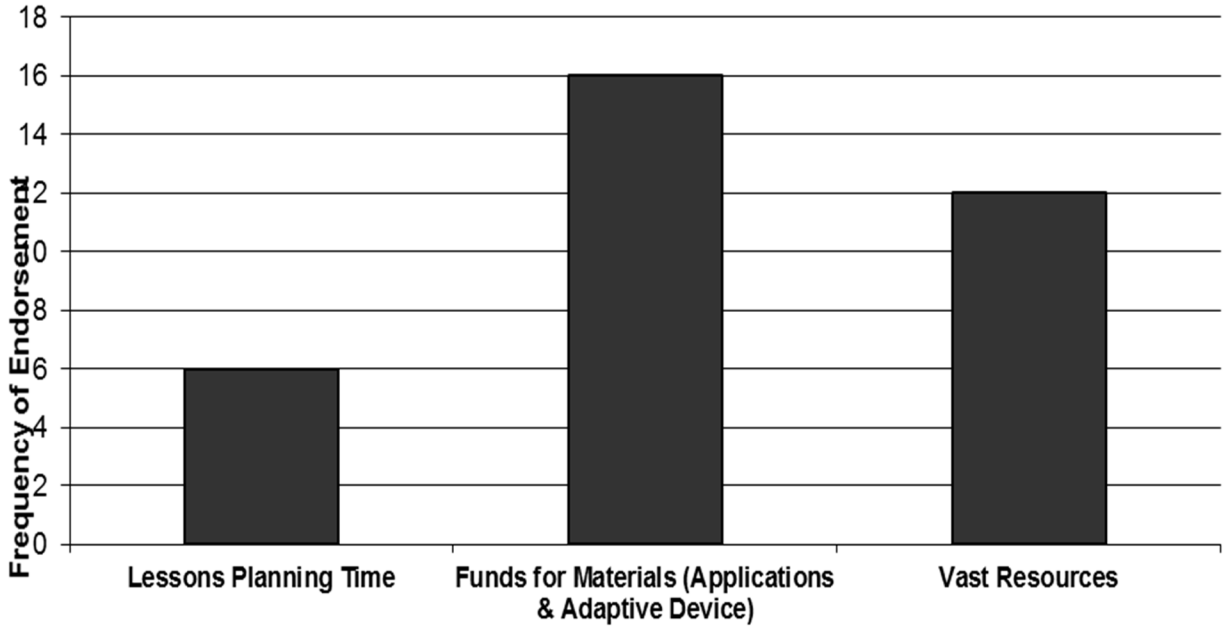
instructional use of three students during a class period. I am only allowed to use the iPad for 15 minutes per class period. I also find time for planning very difficult. To ensure my students receive effective instructional time with the iPad, I spend additional hours after work exploring applications to assist my students to achieve their educational objectives. This time is greatly needed, as it helps me enter my classroom prepared with the objectives and strategies to support students' learning.

Kellie. My desire for support and guidance is in the area of planning. IPads have become a valuable instructional tool for students with intellectual disabilities. I consider incorporating the iPad into students' curriculum requires organizing and structuring my classroom to ensure materials are accessible. At this time, I feel incorporating the iPad into my students' curriculum is difficult and time intensive. Developing lessons for students with intellectual disabilities requires a lot of extra effort, which includes modifying lessons to meet students' needs and implementing strategies to assist students to comprehend the materials. I consider these concerns in addition to implementing new technology such as the iPad requires extra planning time, which sometimes reduces students' instructional time. Most of the time, I find myself working over to plan students' lessons when using the iPad as an instructional tool. I feel pressure would be released from me if I had a little support and guidance in the area of planning.

Nicole. In the 21st Century, I consider iPads are natural for students with intellectual disabilities. I have a desire for support and guidance in the area of planning. As a special education teacher, I think it is important to explore the iPad with students. During this time, I look for sensitivity of the touch screen, the availability of appropriate educational applications, and the accessibility of devices for the students I teach. When exploring the iPad, I think our

instructional time is limited because additional time is not allotted in our schedule to explore new training materials. I think it is extremely important for special education teachers to receive support and guidance with additional planning time to explore the iPad. I believe additional planning time will provide teachers the opportunities to ensure lessons are appropriate along with addressing students' educational needs.

Figure 4. Desire for support and guidance.



In the special education teachers' shared experiences, they emphasized a desire for support and guidance, which was the second theme and identified from three open-codes. As displayed, the teachers reported that funds for materials (e.g., such as applications and adaptive devices) was the most frequently opened-code discussed, which appeared 16 times. Access to vast resources (e.g., (a) multimedia, (b) colorful graphics such as magazines, newspapers, books, transcripts, maps, images, posters, (c) web links, and (d) audio/video titles) was the second most discussed open-code, which appeared 12 times**,** and lesson-planning time was the third

mentioned open-code, which appeared 6 times. There were 34 open-codes, which occurred during Theme two.

Supportive educational advantages. Supportive educational advantages were mentioned in all three of the types of data collection and, consequently is considered as a substantial theme. These special education teachers, who use the iPad as an instructional tool for students with intellectual disabilities, provided an important contribution to both teachers' educational techniques and students' learning. They discussed the educational advantages of the iPad**,** when used as an instructional tool with their students. In fact, they perceived the iPad as a valuable therapeutic tool, which can be used to provide: (a) instruction differentiation, (b) student motivation and engagement, (c) enriched teaching, and (d) student collaboration. Presented below are some meaningful narratives of the special education teachers who discussed their uses of the iPad.

Aaliyah. I love using iPads as an instructional tool. IPads have given me more motivation in my instruction and have provided me the opportunity to give my students the whole picture type of instruction when teaching a lesson. I really like iPads because they simplify the collection and retention of materials. Many of my students repeatedly say, "I lost it" or "I left it at home." When they have iPads, there are no excuses: their educational materials are stored in the iPad and are available electronically at all times. IPads has really broadened my teaching style for my students. It has given me another access to teaching and an alternative avenue for my students to explore and learn. With the iPad my students can create their work on this device and use it to complete research projects by collecting, searching, and organize all their topics electronically. I also like the iPad because it is green efficient, which make it paperless.

Abby. I love using the iPad. Using iPads makes me think outside of the box to plan my lessons. There are numerous benefits associated with the use of the iPad. I see the iPad as a versatile, powerful tool that is changing the face of education. The iPad provides me a diverse method to deliver instructions and to engage students. Importantly, the iPad provides me strategies and techniques to teach based upon the needs of my students individually.

Abigail. I love having the opportunity to use the iPad in my classroom. Integrating the iPad into my students' lesson has been a huge helpmate. The iPad provides immediate feedback and whole class participation. I truly appreciate having the opportunity to use iPads with my students. Using the iPad as an instructional tool has become a natural instinct by providing smoother communication and transmission of materials between teachers and students. I have found a few language arts and math educational applications that are free and they have been very beneficial.

Brenda. My students and I love the iPad. The dream of having iPads in the classroom turned into a reality. As with anything else, I have seen some disadvantages and advantages with this cool, new classroom instructional tool. First, my students' progress monitoring scores and benchmark scores has increased. In addition, iPads has motivated my students to complete and submit assignments in exchange for a positive reward. And most importantly of all, my students are having fun and learning at the same time.

Carissa. Having access to iPads as an instructional tool for students with intellectual disabilities makes me feel excited and grateful. The iPad is so cool. In my classroom it has made introverted students excited, curious, and engaged. Seeing my students engaged has inspired me to become excited and motivated about teaching and not so stagnate in the delivery

and methods of teaching. And most prominently, the iPad has tremendously increased my students' attention span.

Chloe. I love using the iPad as an instructional tool for students with intellectual disabilities. I feel iPads in the classroom are very exciting for teachers and students. I identify iPads as great learning and teaching tools. I use the iPad as an instructional tool and as a reward for students. As an instructional tool, the iPad provides me alternative ways to introduce lessons to my students. The iPad increases my students' interest and motivates my higher functioning students to work more consistently and independently. The iPad also provides me time to directly work with students who require more attention while, students who necessitate less attention work independently on assignments. Finally, I use the iPad as a reward at the end of the day if students obey the classroom rules and actively participated in assignments.

Jackson. I am very excited to implement the iPad in my classroom, a 21st **C**entury instructional tool to teach students diagnosed with severe or profound intellectual disabilities. As I reflect, I think the positive outcomes of iPads outweighs any negative outcomes. Over the past 2 years, I have observed how the iPad has transformed my classroom instruction by enhancing individual learning opportunities and enabling greater flexibility and personalization for each student's lesson. The iPad has served as an educational advantage to me by assisting me to track my students' progress and to make assignments more interactive. The iPad has served as an educational advantage for the students I teach by encouraging them to be more creative and has increased their peer collaboration. Overall, my students really enjoy using the iPad as an instructional tool, especially during math class. During math class, the iPad stimulates my students' learning by providing them audio stimulation.

Jasmine. The iPad is a cool device. It has enhanced my students' engagement in learning and increased their motivation to learn. Throughout my years of using the iPad as an instructional tool, I have overwhelmingly noticed that the positive outcomes of using the iPad in classrooms include a decrease in discipline problems and an improvement in class behavior. I have also noticed that the iPad positively supported classroom instruction, encouraged students to be more independent, and on task. The iPad has significantly increased my students' practice skills in math, reading, and their fine motor skills.

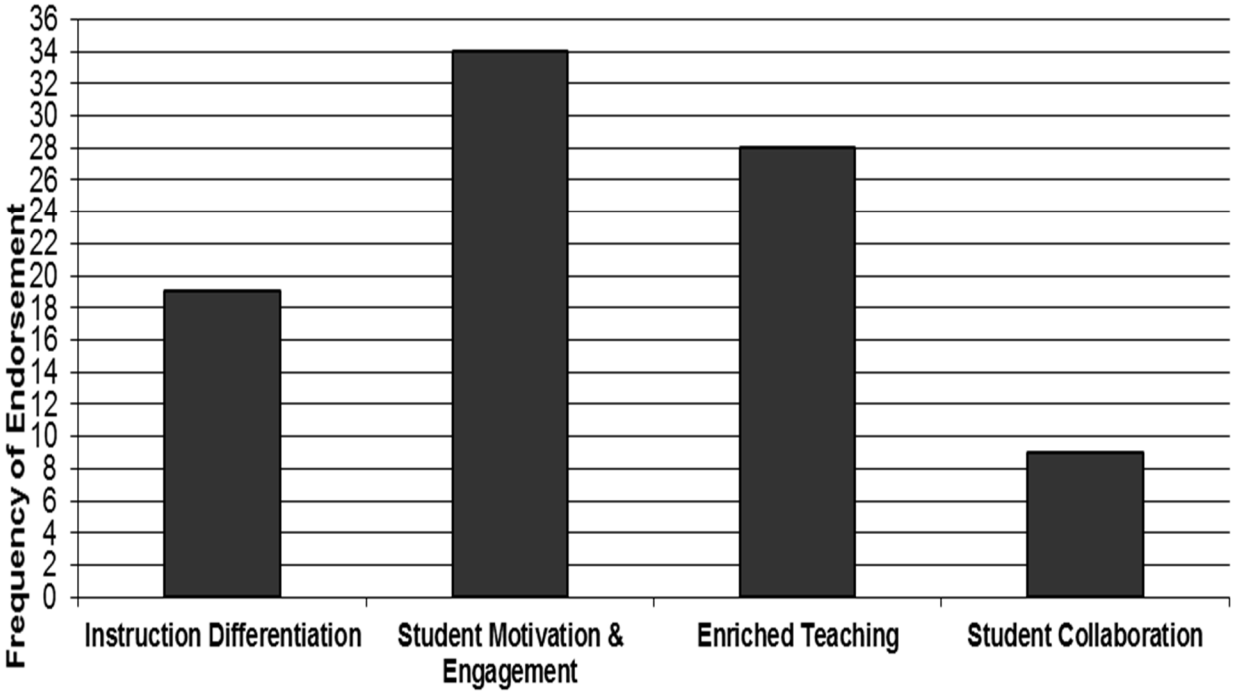
Karen. I am very excited and energized about using iPads as an instructional tool. I identify the iPad as a great instructional tool with flexibility. I believe iPads provide substantive and creative educational opportunities in the classroom for students with intellectual disabilities. Employing iPads in my classroom have increased my students' literary skills and provided differentiation during instructions. In addition, the iPad has also increased my students' creativity. Generally, the iPad provides me the opportunity to explore new ways of teaching and learning, which reveals transformational results.

Kellie. The iPad is a great teaching tool. It allows my students to stay engaged, create, explore, and learn in new ways. The iPad also has provided my students the freedom to explore different subject areas on their own and to discover new information about a topic of interest. When students discover new information, they become excited to share their discoveries with other students. The iPad has mainly served as a reading tool for books that are not in our classroom media center. My students really enjoy engaging in literacy activities using the iPad.

Nicole. I love using the iPad. IPads are a powerful, versatile tool that is virtually changing the face of education. With an iPad in my classroom, I can actually walk around the classroom interacting with each student. The iPad has helped increase confidence among both

teachers and students. I have found success using the iPad as an instructional tool. IPads have increased my students' engagement and made them more conversational. Overall, the iPad has enabled more opportunities for creative and interactive assignments in the classroom.

Figure 5. Supportive educational advantages.



During the special education teachers' reports of shared experiences, the third theme (supportive educational advantages) was identified in this study. This theme was identified from four open-codes. In Figure 5 the open-codes are displayed: (a) student motivation and engagement was the most frequent open-code, which appeared 34 times; (b) enriched teaching was the second most discussed open-code, which appeared 28 times, and (c) instruction differentiation was the third open-code, which appeared 19 times. There were a total of 90 open-codes that appeared during this theme.

Teaching through challenges. The fourth theme identified was teaching through challenges. The teachers identified this theme as the major obstacle. They reported that

challenges were: (a) implementation of the iPad usage based on students' instructive need, (b) (b) need for a substantial number of iPads, and (c) a need for 24/7 technical support. According to Chien (2013), many special education teachers are enthusiastic about use of the iPad as an instructional tool for students with intellectual disabilities, but there are some, who still feel unprepared to implement the iPad into their students' curriculum. Additional obstacles to implement the iPad as an instructional tool may include: (a) teachers' resistance to the device, (b) the need to ensure that all students have access to an iPad after school or at home, (c) security standards to ensure students' safety, (d) limited educational support staff to assist the students, and (e) demonstration of compliance with the Children's Internet Protection Act (CIPA[cite]). Some of the meaningful narratives are presented below.

Abby. Special education teachers are embracing the use of implementing the iPad as an instructional tool for students with intellectual disabilities to enhance their classroom teaching. But in order to effectively use iPads in our classrooms, I think we must have enough devices for each student. At this time, two students are assigned to one iPad to share. I believe when iPads are used as an instructional tool, they should be used in isolation. I think using the IPad in isolation will provide the teacher the opportunity to individualize students' assignments.

Aaliyah. I love using the iPad as an instructional tool. I currently have four iPads in the classroom for my students. That is one iPad to four students, with a class size of 15 students. The biggest challenge I have had with implementing the iPad as an instructional tool is not having access to the iPads for all students; however, the budget does not allow for more iPads to be purchased. I just wish we had more access to using the whole class approach on a daily basis. My students learn best when they are using hands on learning. They learn best by doing the work themselves. They are visual learners and the iPad is more exciting to learn from than the

teacher's lectures. I am currently looking for sources to either write a grant for more iPads in our classroom and a generous donation to the class for such. The administration team is assisting me in trying to find the right avenue in which to pursue.

Abigail. My greatest challenge is the limitation of having only one iPad to utilize for student instruction. In special education classrooms, I consider iPads are designed as a single-user device and not meant to be shared amongst students. I do understand the financial constraints have forced many schools to abandon 1:1 aspirations, but I truly feel sharing iPads separates the functionality from the user. To ensure effective teaching and academic success for students, I would like to have an iPad for myself and two other devices for student use.

Brenda. I only have one iPad to use with a class of 14 students. Our school has a cart of iPads that are shared with the entire school. It is very difficult to check out the iPad cart. When I try to check out the iPad cart, it is usually already checked out by regular education teachers. I feel iPad carts that rotate through several classrooms force teachers to take time away from learning, create a nightmare regarding students' learning, and often focus attention on workflow systems rather than learning. I would love to have additional iPads in my classroom instead of sharing my one iPad or waiting for an opportunity to use the iPad cart.

Carissa. I like using iPads as an instructional tool; however, I am limited to the amount of time to use the iPads with my students due to the iPads are shared. My school was provided a grant through the Department of Defense that provided us with carts of iPads that are utilized in multiple classrooms. The cart is very limited and difficult to obtain in my area. I feel instead of sharing iPads across multiple classrooms, schools should implement a pilot program. I believe a pilot program will offer iPad usage consistency by allocating them to select classrooms for a

period of time. Overall, I feel this system will provide a fair opportunity for the teachers and students to utilize iPads until funds are available to purchase additional devices.

Chloe. My greatest challenge is not having 24/7 technical support to assist me as iPad issues may occur during instruction. My school is currently without a technical support person; hopefully, we will get one soon. I think a technical support person is really required in schools that has technology devices. I can only speak for myself, "not all teachers are tech savvy." I believe technical support availability determines whether or not a teacher continues to use technology devices after an issue has occurred. At this moment, I consider myself very lucky because I have a teacher assistant that is tech savvy and she is wonderful with troubleshooting and fixing iPad issues in my classroom.

Jackson. I consider great strides have been made in infusing technology devices such as the iPad into schools and into the students' instructional process. Currently, some of the students I teach have physical disabilities, which makes their reaching and pointing skills very limited. A challenge in my classroom is these students have limited capabilities of touching the iPad screen. After identifying this disadvantage, I researched several assistive technology devices that may be a benefit; however, the funds to purchase these assistive devices are not available in our school's budget. I would like to have funds to purchase adaptive devices that are needed to enhance students' abilities.

Jasmine. I really like using the iPad as an instructional tool. A challenge in my classroom is having limited access to multiple iPads for a whole class lesson. At my school, additional iPads are provided on an iPad cart. Not having an iPad for each student all the time, makes me plan around the iPad cart availability and around other teachers using them. Because the grade level normally signs up for the iPads for a full day, I have to coordinate with every

grade level for the one period the iPads are available. If there were more carts available or if I had a set of iPads to use in my room, it would be immensely easier to implement a strategic use for them.

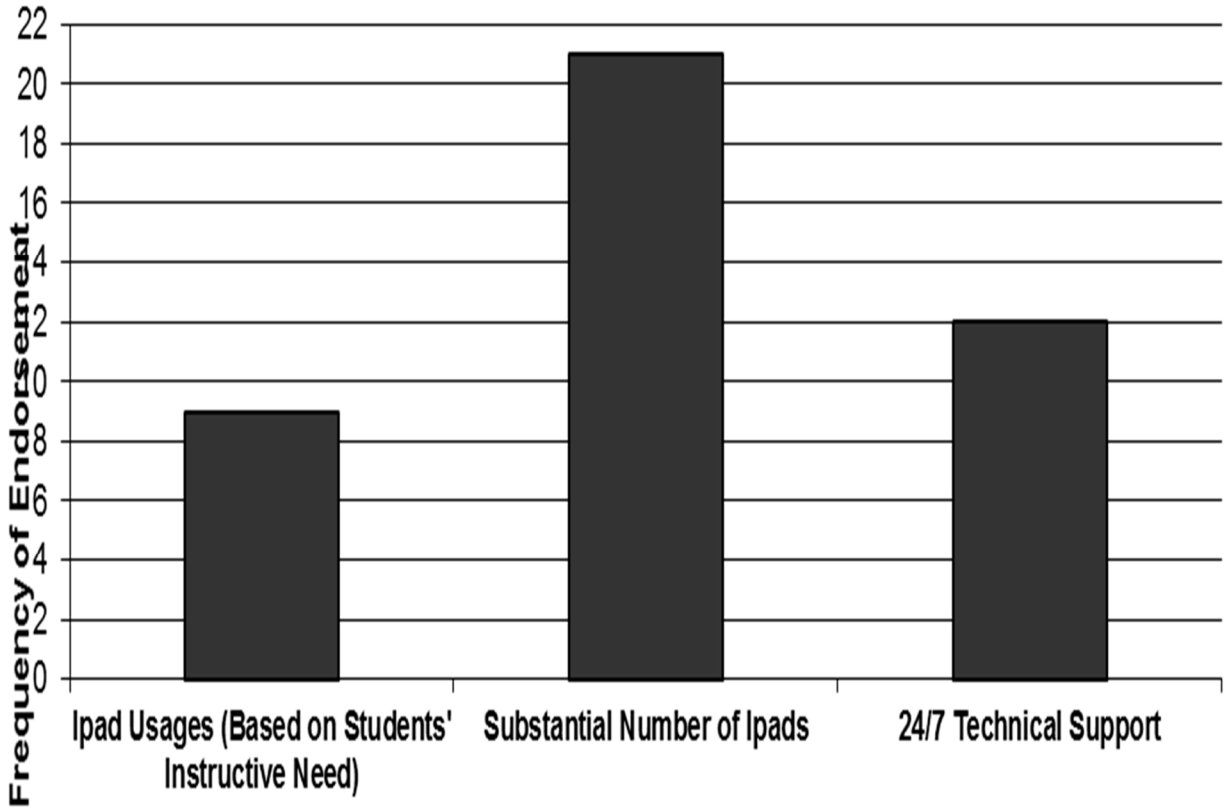
Karen. A challenge in my classroom is not having enough iPads during instruction. My class was provided one iPad to three students. Some of my students have trouble taking turns using the iPad during instruction. When this challenge occurs, we take a break from the iPad and model the appropriate way to share and use the iPad. If we had more iPads this challenge may not occur as often.

Kellie. My challenge using the iPad as an instructional tool is having limited devices available for student instruction. I do not have an iPad for each student. Some students know how to use an iPad while, others require step-by-step directions to navigate the iPad. Also, some students require 1:1 supervision when others demonstrate the ability to work well in a small group of three to four students. I feel sharing an iPad with students who has different skill levels and supervision requirements reduces instructional time from the students. I would like for each student to have an iPad to work on independently. I think instructional time will flow smoother with additional iPads available.

Nicole. The challenge I am currently working through is a shortage of iPad devices. I was provided one iPad for my classroom. With the one iPad, I provide instruction to four students during a class period. While using the iPad as an instructional tool, I experience slow internet capability, crashing of servers due to too much use of the school system at one time (testing days for example), and lack of ability to easily access some sites due to security are the primary challenges in consistently implementing this type of technology.

In addition, I am somewhat leery of allowing my students a lot of freedom to use the iPad without close monitoring. I have a few students who are less likely to understand the value of the device and I am afraid that it may get broken. At this time, I consider the use of iPads as an educational "luxury" that requires close supervision in the special education classroom.

Graph 6. Teaching through challenges.



Teaching through challenges was the fourth Theme identified in this study. This theme was identified from three open-codes. The graph in Figure 6 shows the substantial number of iPads as the most frequently open-code discussed, which appeared 21 times during this theme. The provision of 24/7 technical support was the second most discussed open-code, which appeared 12 times, and iPad usage based on students' instructive need was the third open-code, which appeared 12 times. There were a total of 42 open-codes for Theme four.

Research Questions

The following research questions guided this study:

Central research question. What are the special education teachers' shared experiences in their implementation of the iPad as an instructional tool for elementary students with intellectual disabilities?

The participants described their experiences as positive, in regard to implementation of the iPad as an instructional tool for elementary students with intellectual disabilities. They reported that use of the iPad was a positive and enriching teaching tool, which allowed for multiple learning opportunities for students with intellectual disabilities. This point paralleled Theme three, which was discussed in the beginning of this chapter. The third Theme, supportive educational advantages, is directly related to answer the central question for this study. Each participant in this study provided positive responses on how use of the iPad provides enriching teaching and learning opportunities for students with intellectual disabilities. Also, they noted how use of iPad provides: (a) motivation, (b) engagement, and (c) student collaboration in all three of the data collection procedures in this study. Several teachers discussed their students' response and reaction when they used the iPad as an instructional tool with their students.

Jackson. My students' cognitive impairment is identified as mild, moderate, severe, or profound intellectual disability. A few of them have physical limitations, which includes limited motor skills. Some of them have speech and language deficits, sensory impairments, and developmental delays. When the iPad was initially implemented with my students, their response was exciting. The iPad allowed my students the opportunity to interact with it as a leisure device to play games, a communication device to increase communication, and most importantly an enriching learning tool.

Kellie. Using the iPad as a communication device or as an instructional tool to communicate was one of the most educational advantages in my classroom. I think using the iPad during literacy lessons provided teachable moments for my students. I consider Proloquo2go and Look2learn as effective iPad applications for students with intellectual disabilities. I dislike these applications as a trial, which only lasted for a few months. Unless I purchase these two applications with my personal funds, I will no longer have access to use them with my students.

Nicole. The iPad applications Proloquo2go and Look2learn was shared with me by a former colleague. I consider Proloquo2go and Look2learn are great iPad applications, which allows students with intellectual disabilities to communicate at varying levels. These applications have assisted my students to communicate choices during class, leisure, mealtimes, and on community field trips. My students seem more engaged with Proloquo2go communication application. I believe these programs are customizable to best fit my students' educational needs.

Special education teachers have many students with varying educational needs in their classroom, and they identified the iPad as an instructional tool, which can help provide their students with lessons in an alternative way. Abigail said, "The iPad is a constructive teaching tool that is lightweight and its touch screen design makes it accessible for students with intellectual disabilities to use." All of the special education teachers were delighted with the academic enhancement in their students' educational results. Specifically, one teacher mentioned that she noticed improvements in conceptual understanding on assignments, as well as increased student engagement. Nicole concluded that students demonstrated academic success, in part, because of the way she implemented the iPad as an instructional tool to teach a

lesson, which entailed teaching students the lesson the way they would practice the lesson. Karen commented, "The iPad makes me more excited about venturing 'outside the box'. Implementing the iPad into my students' curriculum has allowed me to observe academic improvement in concepts on which they had been previously unsuccessful. Additionally, I feel the interactive nature of the iPad used offers opportunities for both remediation and challenge."

The special education teachers emphasized their successful experiences in use of the iPad as an instructional tool to enrich student learning. Nearly all of the special education teachers commented that students enjoyed using the iPad more than what one teacher referred to as, "sit-and-get" instruction. Most of the special education teachers indicated there was a notable and very positive impact on learning and teaching with use of the iPad. The majority of the teachers maintained that use of the iPads as instructional tool, which was reflected in students' achievement and attainment. They felt thankful for the changes in pedagogy, as well as the availability of innovative methods of learning supported by the portability of access to teaching materials and learning tools.

Research sub-question one. How do special education teachers describe their experiences with the integration of iPads to meet the educational needs of elementary learners with intellectual disabilities?

In response to sub-question one, the special education teachers noted that use the iPad is both highly customizable and intrinsically motivating to students with intellectual disabilities. All of the special education teachers spoke about how the iPad is particularly well suited to expand their students' learning experience, that its use has provided with resources to assess their students' strengths and needs. Also, they reported that use of the iPad has provided an active

experience for students with intellectual disabilities and equipped their students to independently organize their learning process.

All four themes identified in this study added value to the conclusion to the question, Theme one, special education teachers have a desire for knowledge. This theme supported special education teachers to explore innovative instructional strategies to: (a) engage learners, (b) find creative methods to modify curriculum, and (c) employ a range of educational applications as well as adaptive devices to help students with intellectual disabilities to succeed. Theme two was the teachers' desire for support and guidance. Some veteran special education teachers lack confidence with the use of the iPad as an instructional, and they may feel a lack of confidence and need support and guidance to increase their confidence. This support and guidance may consist of: (a) additional planning time, (b) increase of resources, and (c) increased funding to purchase assistive technology devices and teaching materials to aid them with integrating the iPad into their instruction. Theme three was supportive educational advantages. As special education teachers advance further into the 21st Century, the implementation of iPads as an instructional tool is becoming increasingly more integrated into the classroom. The rapid and widespread adoption of the iPad has largely changed the way teachers teach and students learn. The special education teachers' proficiencies, as they used the iPad, have had a profound impact in educational classrooms. Specifically, iPad use has been associated with: (a) motivation and increased students' engagement during lessons, (b) enriched teaching**,** and (c) improved students' collaboration. Finally, Theme four was teaching though challenges. Successful, integration of technology into educational practices has proven to be a slow and complex process for some schools. In special education settings, the most predominant challenges to successful integration include: (a) organizational support, (b) teachers' level of

proficiency, and (c) accessibility to the technological devices as well as available for use. Clearly, effective ways to integrate technology, such as the iPad, consists of: (a) use of the device based on students' instructional need, (b) have a substantial number of iPads, and (c) access to 24/7 technical support.

Without exception, the participant teachers described their experiences in the integration of iPads as positive. Aaliyah described her experiences in integration of the iPad in her classroom:

> I love using the iPad. I think iPads makes creating teaching materials easier and manageable. Over the years, I have invested hundreds of dollars purchasing worksheets, books, and other printed materials. Using iPads has drastically reduced the costs of creating teaching materials and helped me as a teacher to "go green."

Jasmine described her experiences with the iPad in her instructional setting:

> I really appreciate the iPad. I identify the iPad as a cool powerful, versatile learning tool. The iPad is a lifesaver for me on a personal and professional level. The iPad has made its way from my home into my classroom. In my classroom, the iPad is an effective learning tool that offers educators like me more diverse methods of engaging and educating students.

Research sub-question two. How do special education teachers describe their technological awareness and their ability to integrate the iPad as an instructional tool for elementary students with intellectual disabilities?

Many special education teachers reported that their technological awareness and ability to integrate the iPad as an instructional tool for elementary students with intellectual disabilities was influenced by their desire for knowledge. They associated their desire for knowledge to

their professional behaviors, which entailed having the opportunity to learn from colleagues in addition to seeking professional development. Chloe stated:

> Using the iPad as an instructional tool has definitely made my job as a special education teacher easier! Prior to integrating the iPad into my students' curriculum, professional growth opportunities were very limited. It was usually a "one-shot deal" that was limited by our work schedules. Now with the iPad, I have the opportunity to seek professional development on my own by connecting to social media, professional learning networks, and teaching websites. Since the nature of my daily schedule may prevent me from visiting colleagues' educational settings and attending off site workshops, receiving professional development online and connecting to colleagues across the world virtually is truly a benefit for me and my students.

Addy stated:

> I consider having a desire for knowledge, support and guidance, in addition to teaching through challenges are very important for teachers and these focuses has the potential to affect students' learning. I feel student learning and achievement enhances when educators participates in professional development concentrated on the skills the educator may need in order to address students' educational objectives. I believe the school district should provide educators, professional development opportunities. In doing so, I think it is important for them to consider a teacher's need for flexibility, collaboration, and personalization.

Special education teachers, who integrate the iPad as an instructional tool for elementary students with intellectual disabilities, does not, necessarily, mean that they are a skillful teacher or have a great deal of technological awareness. Integration of the iPad as an instructional tool

for elementary students with intellectual disabilities, is the result of: (a) learning, (b) reflection, (c) practice, (d) preparation, and (e) hard work. Whether students' cognitive impairment is mild, moderate, severe, or profound, they will learn more if their teachers regularly engage in high-quality desire for knowledge to uphold their technological awareness.

Research sub-question three. How do special education teachers describe their instructional strategies for using the iPad as an instructional tool to enhance the teaching and learning process for elementary learners with intellectual disabilities?

The third research sub-question in this study described special education teachers' instructional strategies for use of the iPad as an instructional tool to enhance the teaching and learning process for elementary learners with intellectual disabilities. Students with intellectual disabilities present a vast range of challenges to special education teachers. Use of the iPad as an instructional tool to enhance the teaching and learning process for students with intellectual disabilities requires many teaching strategies, most of which are chosen through trial and error. The answer to this final research sub-question emerged from Theme one, Desire for knowledge and Theme two, Desire for support and guidance.

The special education teachers concurred that iPads are a powerful force for enhancing the teaching and learning process for elementary learners with intellectual disabilities. Abby stated:

> IPads are very powerful instructional tools. I believe when iPads are properly used as an instructional tool, it becomes an essential part of the student's educational approach. I consider the iPad as a very effective instructional tool for enhancing and improving the teaching and learning process in the content areas involving all students in complex, authentic tasks.

Jackson. Using the iPad as an instructional tool in special education classrooms cannot be considered a panacea for educational reform. I think the use of iPads in educational settings can give students with intellectual disabilities a learning environment that allows discovery and creativity through the use of visualizations, such as modeling and simulations. I believe the opportunities for students with intellectual disabilities can range from achieving greater independence and maximizing productivity to connecting with the virtual communities via iPads. I think the educational needs of students with intellectual disabilities can be provided with access to a variety of iPad applications that can be used to empower and enable students to be successful by enhancing the teaching and learning process.

Jackson shared the following strategies, which he found to be successful in use of the iPad as an instructional tool: (a) small group instruction; (b) tunes and singing to recite information; and (c) modeling (e.g., for example, the teacher or another student modeling correct behavior).

Many students with intellectual disabilities require adaptive devices to help them meet the challenges posed by their disabilities. A few teachers voiced they were aware that several programs and strategies are researched based for students with intellectual disabilities using the iPad as an instructional tool. The special education teachers also revealed they have not had the chance to search or have received professional development to support them in this area. Aaliyah stated, "I know utilizing technology such as the iPad opens up a new dimension and interest during the teaching and learning process of elementary students with intellectual disabilities." Aaliyah concluded by saying, "This will be the wave of the future of my students." Karen mentioned her biggest challenge while using the iPad as an instruction tool is her students escaping an application to go to another application during instruction. Karen indicated this

behavior signifies that her students are having difficulty staying on task. Karen specified her teaching strategy to redirect this behavior is to disable the "Guided Access" key on the iPad. Karen stated, "This strategy redirects my students to their original assignment." Karen mentioned, "This strategy is also very effective in aiding learners to stay on task." Nicole added:

> I feel somewhat limited in this area. I feel the most useful instructional strategy for using the iPad as an instructional tool to enhance the teaching and learning process is frequent monitoring or having oversight of students' use with the iPad to keep them from moving too quickly through a program and not really thinking through the concepts taught. I consider these strategies are best provided by the teacher or another real person, rather than through the iPad device itself.

Nicole emphasized that it was important to implement learning strategies into students' curriculum and let those strategies guide the curricular instruction and not the other way around. She said use of iPad should be a support, not just because they have found something cool for their students to do. Nicole stated, "That does not fit into the schema of the curriculum."

The special education teachers concluded by their discussion of how important it is for educators to have a desire for knowledge as well as a desire for support and guidance. Each teacher mentioned the importance of resources being available to help support educators: (a) allow sufficient planning time to create lesson plans, (b) have a system in place to manage classroom environments, and (c) access to high-quality instruction for students with intellectual disabilities.

Summary

The purpose of this chapter was to describe the lived experience of 11 special education teachers, as they use using the iPad as an instructional tool for elementary students with

intellectual disabilities. The data for this study were collected through individual interviews, focus groups, and observations, in which the teachers were asked to describe the lived experiences of working with students with intellectual disabilities. An analysis of data revealed four themes: (a) Desire for knowledge; (b) Desire for support and guidance; (c) Supportive educational advantages; and (d) Teaching through challenges. Member checking was utilized to ensure the accuracy of the themes. These themes derived from the related literature in this study, which intended to describe the experiences of the special education teachers using the iPad as an instructional tool for students with intellectual disabilities.

CHAPTER FIVE: DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Overview

The purpose of this transcendental phenomenological study was to describe the lived experience of 11 special education teachers, who implemented the iPad as an instructional tool for elementary students with intellectual disabilities at a school district in the eastern tier of North Carolina. For the purpose of this study, the iPad as an instructional tool is defined as "an instrument used to enhance the teaching and learning process in an educational setting" (Helps & Herzberg, 2013, p. 233). According to research conducted by Davidson (2012), there has been few studies on the use of the iPad as an instructional tool for elementary students with intellectual disabilities. It is difficult for many youth with intellectual disabilities to: (a) effectively participate in postsecondary education, (b) acquire meaningful employment, and live independently in their communities (Fox, 2010). Abrahms (2011) reported that some teachers are still hesitant about the use of technology such as the iPad. However, both Abrahms and Fox (2010) indicated that iPads have been highly advertised as the next assistive technology (AT) innovation for learners. The views can help develop an understanding of the special education teachers' experiences in their use of the iPad as an instructional tool by an investigation of their methodologies and proficiencies are used utilized to instruct elementary learners with intellectual disabilities.

Presented in this chapter is a summary of the findings detailed in Chapter Four, as well as a discussion of those findings in regard to the theoretical framework and related literature. Additionally, the implications from the study, recommendations, delimitations and limitations, and future research suggestions are included.

Summary of Findings

The special education teachers in this study shared numerous resourceful acquaintances in regard to their experiences with use of the iPad as an instructional tool for elementary students with intellectual disabilities. This researcher identified several significant themes and open-codes. Some of these themes and open-codes were identified as: (a) professional development, (b) learning from others, (c) instruction differentiation, (d) student motivation and engagement, (e) enriched teaching, and (f) student collaboration. Principally, the special education teachers greatly appreciate the opportunity to use the iPad as an instructional tool for students with intellectual disabilities. All commented about how use of the iPad brings more interaction to the classroom. The special education teachers commented about: (a) how the iPad is an efficient lesson planning tool; (b) an instructional tool, which can be used as a virtual tour guide to provide students the opportunity to experience field trip destinations from their classroom; and (c) its portability allows teachers to be mobile instead of standing in front of the classroom teaching from a podium or desk all day.

The special education teachers in this study noted that the iPad is an excellent tool, and they are very pleased to use the iPad as an instructional tool for students with intellectual disabilities**.** However, they noted that it was important to have access to: (a) professional development, (b) technical support, (c) sufficient number of devices for each student, and (d) funds available to purchase teaching material and devices. The participants in this study reported various viewpoints and feelings in regard to the effective use of the iPad as an instructional tool in their classroom. These teachers identified major prerequisites for successful implementation of the iPad as an instructional tool. Each of these prerequisites was discussed by each of the

participants in the study through their participation in interview, observation, and focus group discussions.

The purpose of this study was to describe the experience of 11 special education teachers as they implemented the iPad as an instructional tool for elementary students with intellectual disabilities. The special education teachers in this study informed the researcher about their knowledge of the iPad as an instructional tool for students with intellectual disabilities. This knowledge, which was distilled from the collective voices of these special education teachers, who used the iPad as an instructional tool, may benefit the teaching and learning process in special education classrooms. By their description of their lived experience in the implementation of the iPad as an instructional tool, other special education teachers can share and enhance their knowledge on how iPads can impact student learning.

For this study, I utilized the transcendental phenomenological research design. Analyses of the collected data led to the identification of four themes related to these special education teachers' lived experiences. These four themes are:

1. A Desire for Knowledge (e.g., professional development; self-taught-experiences; and learning from others);
2. A Desire for Support and Guidance (e.g., lesson planning time, funds for materials such as applications and assistive technology devices, and vast resources);
3. Supportive Educational Advantages (e.g., instruction differentiation, student motivation and Engagement, enriched teaching, and student collaboration); and
4. Teaching through Challenges (e.g., iPad usage based on students' instructive need, substantial number of iPads, and 24/7 technical support).

The themes developed were used to answer the four research questions, which guided this study. In order to answer these four research questions, I followed Moustakas' (1994) design for transcendental phenomenological research. In doing so, 11 special education teachers were selected for this study. Each special education teacher participated in an interview, classroom observation, and a focus group discussion. The data for this study were analyzed through the process of phenomenological reduction (Moustakas). The four research questions, which were developed from the related literature and framed the investigation, are presented below.

Central Research Question

What are the special education teachers' shared experiences in their implementation of the iPad as an instructional tool for elementary students with intellectual disabilities? The special education teachers identified the iPad as an instructional tool that is changing the way teachers teach and the way students learn. They described their experiences in implementation of the iPad as positive and enriching. Positive, because use of the iPad has improved their students' academic performance and increased their students' engagement and motivation in the classroom. Enriching, because reason the iPad has instructional flexibility and is identified as an instructional tool, which that is resource efficient for teachers and students. Generally, every participant in this study discussed how iPads in the classroom have integrated focus on content quality and design among elementary students with intellectual disabilities and have accelerated and enriched their learning and comprehension.

Research Sub-question One

How do special education teachers describe their experiences with the integration of iPads to meet the educational needs of elementary learners with intellectual disabilities? The special education teachers described their experiences as an enriching way to integrate iPads to

meet the educational needs of elementary learners with intellectual disabilities. They felt it was enriching for them because they were able to provide knowledge, support, and guidance to their students. Effective integration of iPads to meet the educational needs of elementary students with intellectual disabilities requires special education teachers to develop an understanding of how to become proficient and effectively: (a) planning, (b) implementation, and evaluation of instruction that can foster students' success. During this process, special education teachers reported that their experiences with the iPad and their students meant they had a desire for knowledge as well for support and guidance in their integration of the iPads in order to meet the educational needs of students with intellectual disabilities. It is important that special education teachers have access to new information and new research in order to teach their students effectively. Repeatedly, these special education teachers reported their need for: (a) ongoing professional development, (b) experiential experiences, (c) learning from others, and (d) have the financial resources to facilitate learning in the special education classroom.

Research Sub-question Two

How do special education teachers describe their technological awareness and their ability to integrate the iPad as an instructional tool for elementary students with intellectual disabilities? The use of iPads is evolving at an astonishing rate in educational settings. It has dramatically changed the way teachers teach**,** in addition to the way students learn and interact in special education classrooms. Their ability to integrate the iPad as an instructional tool for elementary students with intellectual disabilities was directly related to their desire for knowledge. Also, the special education teachers in this study, felt successful in the integration of the iPad as an instructional tool, because of their preparedness and skill level with the technology. They emphasized the importance of participation in high-quality professional

development that leads to a professional community centered on effective integration of the iPad into the students' curriculum. The teachers in this study maintained that access to high quality professional development deepens teachers' content knowledge and pedagogical skills. In addition, they considered their access high-quality knowledge provides them with the opportunities to practice, research, and reflect on their teaching.

Knowledge plays a major role in improving special education teachers' skills and competencies to produce outstanding educational results for students with intellectual disabilities. Knowledge is a key element in regard to special education teachers' technological awareness, which involves professional development, previous experiences, and learning from others. Special education teachers' technological awareness is effective, when they can acquire knowledge which impacts their learning and, ultimately, their students' learning.

Research Sub-question Three

How do special education teachers describe their instructional strategies for the use of the iPad as an instructional tool to enhance the teaching and learning process for elementary learners with intellectual disabilities? Students with intellectual disabilities may require direct instruction and/or adaptive devices to help them meet the challenges posed by their disabilities. Often, special education teachers are asked to modify instruction to accommodate the need of students with intellectual disabilities. These special education teachers were aware of the use of strategies, such as modifications and adaptations, which may be required for the use of iPads as an instructional tool to enhance the teaching and learning process for elementary learners with intellectual disabilities. The special education teachers discussed several useful strategies: (a) differentiate instructions; (b) monitor students; (c) redirect tasks; (d) teach one step at a time to help support memorization and sequencing; (e) teach students in small groups or one-on-one; (f)

allow students multiple opportunities to practice skills; (g) use cues such as gestures, physical prompts, verbal prompts, or manipulations to guide correct responses**;** and (h) provide social praise and/or rewards to reinforce the students' responses.

Discussion

Use of the iPad provides special education teachers with numerous ways to engage their students and bring every lesson to life. The integration iPads, when they are used in special education classroom instruction means more than just teaching the basic skills. In special education classrooms, the iPad instructional materials can be expanded beyond the classroom, such as: (a) explore a variety of educational applications, (b) interactive books, (c) research information, (d) virtual tours, and (e) watch videos from around the world (Cumming et al., 2014).

Theoretical Literature

The problem, which was addressed in this study, is the number of research studies which have been conducted in regard to special education teachers' experiences, such as advantages and impediments in the implementation of the iPad as an instructional tool for elementary students with intellectual disabilities (Riley, 2013). As a special education teacher, it is essential to explore the use of iPads as an instructional tool for students with intellectual disabilities. Recently, Jahnke and Kumar (2014) examined general education teachers' experiences in the implementation of the iPad as an instructional tool. Presently, few researchers have explored the use of iPads as an instructional tool for students with intellectual disabilities (Davidson, 2012). Also, Davidson's found little research on the use of iPads with elementary students with intellectual disabilities and how iPads affect their knowledge and impact learning. This current researcher used a qualitative approach to describe the special education teachers' experiences

using the iPad as an instructional tool for students with intellectual disabilities. Much of the literature, as presented in Chapter Two supported the implementation of the iPad as an instructional tool for elementary students with intellectual disabilities.

The findings from this study showed that the use of iPads can enhance the knowledge of elementary students with intellectual disabilities and positively impact their learning. The use of the iPad as an instructional tool in educational settings has the potential to facilitate the diverse learning styles of students with intellectual disabilities. The findings in this study served as a confirmation to previous theoretical and empirical research. Also, the results from this study provided educators a lucid understanding of the requisite knowledge and work required for special education teachers to effectively implement the iPad as an instructional tool for elementary students with intellectual disabilities. In addition, there was an emphasis on the importance of the provision of support and guidance for special education teachers. They need access to: (a) innumerable resources, (b) availability of diverse applications and devices, (c) AT, and (d) adequate planning time. These components were identified as essential by the teachers to help students with intellectual disabilities to become skilled at their level of interest and ability.

Students with intellectual disabilities learn differently. Implementation of iPads as an instructional tool for students with intellectual disabilities allows teachers to educate students on the same lesson at the same time, however, with different methods. With the iPad, special education teachers have the opportunity to customize students' lessons to fit their learning style and cognitive level.

In special education classrooms, the iPad can be used to provided special education teachers with effective ways to evaluate students' understanding through multiple means, as well as enhance the relationship between the teacher and student (Roblyer & Doering, 2013). In this

study, the iPad uses multi-touch sensitivity that enables students with intellectual disabilities to mildly touch the screen to receive a response, which makes it very accessible for students with physical limitations. Also, it is a device with many applications, which can be customized to assist students with intellectual disabilities to achieve their educational objectives. Finally, the iPad was identified as a device with many accessibility features for students with intellectual disabilities due to its portability, which allows a student to learn anywhere at any time (Cumming et al., 2014). Other features include: (a) enlarged text and changes in the font for students with a visual impairment; (b) background color used for students with a speech or visual impairment; and (c) an application for screen reading, which enables students with severe visual impairments to use the device.

In Brownell's et al. (2012) study, students with severe intellectual disabilities identified with limited motor skills, speech and language deficits, sensory impairments, and developmental delays demonstrated phenomenal effects when they interacted with iPads as an instructional tool. Reportedly, the iPad allowed these students to: (a) interact with sensory games, (b) communicate, and (c) acquire knowledge and skills like their peers who are not identified with an intellectual disability. Brownell et al. reported that the iPad was successfully used during numerous learning opportunities.

The iPad has been shown to be a useful learning tool for improvement in collaboration, and engagement among students (Jahnke & Kumar, 2014). The findings from this current study supported the literature in regard to educational advantages when the iPad is used as an instructional tool for students with intellectual disabilities. Abrahms (2011) identified the iPad as a communication device for students with intellectual disabilities. The communication applications that were noted in Abrahms' (2011) research was as follows: (a) iConverse, (b)

Look2Learn, and (c) Proloquo2Go. These same applications were noted and discussed in two of the special education teachers' interviews and observations in this study. Abraham (2011) and two of the special education teachers agreed that iConverse, Look2Learn, and Proloquo2Go were very effective applications, which assisted students with intellectual disabilities to communicate at varying levels. Also, Abraham noted these applications supported students with intellectual disabilities to make choices while they participated in education and life skill preparations. Additional educational advantages included: (a) special education teachers' differentiation of students' instruction, (b) creation and development of enriching teaching materials, (c) increased students' motivation and engagement, and (d) a notable increase in students' collaboration, when they participated in group projects and activities during class.

As with all new technology equipment, there were a few frustrating incidents, which occurred when the special education teachers implemented the device as an instructional tool for elementary students with intellectual disabilities. One of the most challenging encounters was the special education teachers' desire for knowledge. It was found that the special education teachers' level of knowledge and skills was necessary in their implementation of the iPad as an instructional tool for students with intellectual disabilities. In regard to the special education teachers' level of knowledge, most of them reported they had some knowledge or little knowledge about use of the iPad as an instructional tool for students with intellectual disabilities. None of the special education teachers reported that they had extensive knowledge; however, one special education teacher reported he or she had good knowledge of the iPad as an instructional tool for students with intellectual disabilities. The majority of the participants reported that they never had taken a college or graduate level course about technology. There was one special education teacher with a Master's Degree in Educational Technology. All the special education

teachers reported a desire for continuous knowledge, such as participation in professional development in order to implement the iPad as an instructional tool for students with intellectual disabilities in their classrooms. Chloe commented, "I need a lot of help implementing the iPad as an instructional tool. I think schools should offer more workshops and specialized training on how to successfully implement the iPad as an instructional tool."

The second problem was noted as the special education teachers' desire for support and guidance. Many students with intellectual disabilities have physical limitations, including spasticity issues. Financial resources to purchase AT devices to assist students with physical limitations**,** and limited fine motor skills are required to help students interact with the iPad to indicate their response. Students with intellectual disabilities may necessitate AT technological devices such as positioning stands or wheelchair mounts to ensure the iPad is accessible. The majority of the special education teachers reported that, to some extent, they were prepared to implement the iPad as an instructional tool in their classroom. A few of the special education teachers reported they were adequately prepared to implement the iPad as an instructional tool in their classroom. There was no teacher who reported that he or she was extremely prepared to implement the iPad as an instructional tool in their classroom. Five of the special education teachers reported they were somewhat aware of iPad applications to apply using the iPad as an instructional tool. Two special education teachers reported they were considerably aware; two reported they were partially aware; and two special education teachers reported they were very aware of iPad applications to apply using the iPad as an instructional tool for students with intellectual disabilities. All the special education teachers reported a desire for support and guidance such as having lesson planning time, financial resources for materials, and vast resources in regards to implementing the iPad as an instructional tool for students with

intellectual disabilities. Jasmine stated, "I think I have some knowledge about assistive technology devices and applications for the iPad, but I feel I'm not prepared to effectually implement the iPad as an instructional tool." Brenda stated, "I'm still unsure of the various applications to implement with my students. I would like to be more exposed to the various iPad applications that are appropriate teaching tools."

The final problem was identified as the special education teachers teaching through challenges. Special education teachers, who implement the iPad as an instructional tool, can experience stress for educators who are not technologically savvy. Critical factors for teachers were: (a) 24/7 technical support, (b) a sufficient number of iPads, and (c) make sure that the iPads are used, based on students' instructional needs. Chien (2013) pointed out that, if technical problems arise frequently, and special education teachers have to wait an extended time to resolve their issue, they are highly likely to abandon their efforts to implement new technology into their curriculum. When there is a school technical support team, whose members can be flexible and available to their educators, it is more likely that the newly implemented teaching tool will be used effectively. The special education teachers in this study strongly voiced their concern for schools to have 24/7 technical support or to provide support to users in a timely manner. Repeatedly, special education teachers indicated the lack of access to iPads, as well as usage constraints have a negative effect in the delivery of effective instructions to students with intellectual disabilities. According to Fox (2010), iPad instruction cannot become a meaningful instructional tool if students have access to it for only a few minutes a week. The findings from this study supported those of Fox in regard to the significance of 1:1 iPad usage based on students' instructional needs. The special education teachers agreed 1:1 iPad training provide opportunities for students to work and excel at their own level and pace. Also, they emphasized

the need for a substantial number of iPads, so teachers can customize lessons to fit each student's progress and learning style.

The Theoretical Framework that guided this study was centered in the works of Piaget's (1954) Cognitive Development Theory and Vygotsky's (1978) Social Development Theory. The theories of Jean Piaget and Lev Vygotsky have had an extensive influence on how students learn. These two theories were appropriate for this study, in that, they helped to described purpose of special education teachers' experiences, as they implemented the iPad as an instructional tool for students with intellectual disabilities. The main concept of Vygotsky's Social Development Theory is that**,** typically, special education teachers are actively involved in the students' process of "making meaning" (De León, 2012, p. 120). Vygotsky's theory is important to this study, in that, the special education teacher plays the important role of a facilitator and develops an environment where directed and guided interactions occur, such as use of the iPad as an instructional tool for students with intellectual disabilities. Vygotsky states, "learning is a necessary and universal aspect of the process of developing culturally organized, specifically human psychological function" (1978, p. 90).

Piaget's (1954) Cognitive Development theory has a major influence on the practice of teaching and learning. The Cognitive Development Theory relates to "how learners come to know" (Awwad, 2013, p. 115). According to Piaget, knowledge is a process, which constructs a realm where teachers establish an approach to learning that is rooted in the students' development and their sense of understanding (Awwad). The Cognitive Development Theory is important to this study, in that, the special education teachers' role is to facilitate learning by providing students a variety of experiences. During this teaching practice, the special education teachers' knowledge of the implementation of the iPad as an instructional tool influences the

curriculum and activities of students with intellectual disabilities. In this study, the special education teachers' knowledge consisted: (a) description, (b) analysis, and (c) examination of the hereditary facts of learning and reasoning (Audi, 2011). Effective implementation of iPad as an instructional tool for students with intellectual disabilities is strongly influenced by the special education teachers' knowledge, which consists of having a clear understanding of how to adjust and refine teaching practices to address students' needs (Audi). It is clear, for special education teachers to better address the instructional needs of students with intellectual disabilities, they must become more thoughtful about teaching and learning. The special education teachers in this study referred to the provision of an enlightening environment with materials and instructions that are consistent with their students' physical and cognitive abilities as well as with their students' social and emotional needs.

The fundamental evidence of the works of Vygotsky's (1978) Social Development Theory and Piaget's (1954) Cognitive Development Theory is that a student's success is initiated by a teacher's knowledge. Special education teachers involved in this study shared their experiences using the iPad as an instructional tool for students with intellectual disabilities. The majority of the special education teachers involved in this study felt implementing the iPad as an instructional tool encouraged educational advantages for students with intellectual disabilities. In this study, the special education teachers expressed a desire for knowledge, support, and guidance as essential concepts for implementing the iPad as an instructional tool for students with intellectual disabilities. Also, the special education teachers in the study recorded their experiences of teaching through challenges, which consisted of limited iPads, time constraints for using iPads, and limited technical support to assist with technology issues. Every participant in the study agreed integrating the iPad as an instructional tool for elementary students with

intellectual disabilities played an important role in each student's learning process along with developing a constructive relationship that is fostered amongst the special education teacher and the student.

Implications

This section addresses the practical implications of the study. The purpose of this study was to describe the lived experiences of special education teachers with the implementation of the iPad as an instructional tool for elementary students with intellectual disabilities at a school district in the eastern tier of North Carolina. It is imperative for special education teachers to effectively integrate the iPad as an instructional tool to enhance the teaching and learning process for learners with intellectual disabilities. The findings from this study indicate iPads provides support for educational advancements, such as: (a) instruction differentiation, (b) student motivation and engagement, (c) enriched teaching, and (d) student collaboration when implemented as an instructional tool for learners with intellectual disabilities (Cumming et al., 2014).

Practical Implications

Special education teachers are in support of the use of iPads as an instructional tool to enhance their teaching. According to Chien (2013), effectively implementation of the iPad as an instructional tool is essential for special education teachers to successfully prepare themselves by creating applicable lesson plans that are aligned to the students' educational objectives.

The practical implications of this study necessitate the professional learning opportunities and support for special education teachers who implement the iPad as an instructional tool for students with intellectual disabilities. Special education teachers play a pivotal role to ensure student achievement in their educational setting. Effective implementation of the iPad as an

instructional tool requires on-going professional development opportunities based on the students' curriculum and instructional strategies.

As identified in this study, professional development influenced special education teachers' knowledge and practices. The research recommend and encourage special education teachers to embrace their opportunity to continue to participate in on-going professional development, which enhances their understanding of their subject matter in regards to the effective use of the iPad as an instructional tool. Special education teachers' recommendations to enhance teaching and learning with the implementation of the iPad as an instructional tool for students with intellectual disabilities includes: (a) implement lessons that are meaningful, (b) adaptable, (c) authentic, and (d) cost-effective. Additional recommendations are: (a) break down learning tasks into small steps by teaching one-step at a time; (b) modify the teaching approach by providing hands on approach; (c) use visual aids; and (d) immediate feedback.

The integration of the iPad as an instructional tool for student with intellectual disabilities can be time-consuming, especially when it must be aligned with the students' curriculum. During this time, many special education teachers spend hours gaining familiarity with the iPad's hardware and software in addition to previewing educational web pages. The second implication of this study necessitates special education teachers provided additional time to integrate the iPad as an instructional tool for students with intellectual disabilities. For many special education classrooms, teachers do not have the time to properly integrate the iPad into their students' curriculum or daily activities. According to Cumming et al. (2013), implementation of the iPad as an instructional tool requires: (a) time to explore the device, (b) research to identify appropriate teaching materials, and (c) investigate instructional methods and strategies to assist the students to meet their educational objectives. Planning time is also required for the special

education teachers to troubleshoot skills and practice the iPad applications they like to incorporate into their instructions. The research also recommend and encourage special education teachers to incorporate additional planning time into their educational schedule to establish a sense of organization that will support them to develop applicable lessons to facilitate students' educational objectives in regards to the implementation of the iPad as an instructional tool. Significant recommendations related to the incorporation of planning time to develop effective lessons consist of special education teachers: (a) participate in co-teaching; (c) collaborate with colleagues and general education teachers; (d) provide flexibility with the implementation of instructions and strategies; and (e) develop daily or weekly schedules.

Limitations

According to Creswell (2013), limitations are an inherent aspect of qualitative research. This was a qualitative study with a sample size restricted to one school district in the eastern tier of North Carolina. This study contributes new and first-hand information to a growing body of research. This study provided a focus on the experiences of the special education teachers only. A limitation of the study relates to limiting this study to elementary students with intellectual disabilities, based on research revealed a gap in the literature for special education teachers who implement the iPad as an instructional tool for students diagnosed with an intellectual disability. Special education teachers teaching students diagnosed with other disabilities or impairments may have provided different experiences with the phenomenon studied. A second limitation of the study was the participants. This study was profoundly represented by females. Ten of the participants in this study were females. It may have been preferable to have had more male participants; however, this situation was inevitable due to the participants' participation was voluntary. The third limitation of the study was related to the subjectivity of qualitative research,

which may lead to bias in reference to the research topic. As a special education teacher the use of an iPad to teach students with intellectual disabilities from a different school district, I acknowledged any bias I may have in regards to special education teachers who implement the iPad as an instructional tool for students with intellectual disabilities. Bracketing allowed me to block my personal experiences and set aside any preconceptions in regards to the phenomenon under investigation. In order to establish transferability, this study should be replicated in numerous school districts, including educators who implement the iPad as an instructional tool with students in various content areas and grade levels.

Recommendations for Future Research

This study was formed and designed to describe the special education teachers' experiences with the implementation of the iPad as an instructional tool for elementary students with intellectual disabilities. Based on the results of this study, several areas were noted to be considered for future research. Due to this study providing a focus on elementary special education teachers, middle school and high school special education teachers were not asked to participate in this study. One of the areas of future research should be considered is incorporating special education teachers from different grade level with the implementation the iPad as an instructional tool for students with intellectual disabilities.

The second area of future research noted in this study to be replicated was the use of more than one school district in different geographic locations. The integration of various school districts would provide new perspectives to the data collection and initiate a more accurate representation of the phenomenon.

Another area necessitate further research provided a focus on special education teachers with the use of the iPad as an instructional tool for students other disabilities. Future research

should be conducted on the implementation of the iPad as an instructional tool for students with other disabilities such as: (a) autism, (b) visual impairment, (c) physical, (c) emotional, (d) behavioral, (e) learning disabilities, and/or (f) communication challenges.

A final recommendation for future research relates to the issue of having limited devices for all students. In this study, limited devices impacted the special education teachers' instructional plans to integrate the iPad as a whole class lesson or to use the iPad as a daily instructional tool. Future research should investigate the experiences of students bringing their own device to school for instructional use.

Summary

The goal of this phenomenological study was to describe the lived experience of special education teachers who implemented the iPad as an instructional tool for elementary students with intellectual disabilities, at a school district in the eastern tier of North Carolina. This study was necessary because there is little research that has been explored with the use of iPads as an instructional tool for students with intellectual disabilities. This study sought to elucidate a rich, descriptive voice for the 11 special education teachers by sharing their experiences in relationship to the phenomenon. This study found that special education teachers' knowledge and skills play a vital role in the implementation of the iPad as an instructional tool for students with intellectual disabilities. This study also found that special education teachers who implemented the iPad as an instructional tool revealed educational advancements and enhanced learning opportunities for the special education teachers and their students. This research substantially revealed that iPads facilitates the 21st Century learners to apply knowledge in a way that is stimulating and meaningful for them in educational classrooms. The special education teachers in this study suggested, as iPads are continuously integrated into students'

curriculum, it is critical for them to continuously participate in professional development and opportunities for collaboration. The special education teachers strongly support acquiring knowledge to keep abreast of the up-to-date teaching strategies in reference to new instructional tools such as the iPad to facilitate teaching and learning in special education classrooms.

REFERENCES

Abbas, P. G., Lai-Mei, L., & Ismail, H. N. (2013). Teachers' use of technology and constructivism. *International Journal of Modern Education and Computer Science, 5*(4), 49-63. doi:10.5815/ijmecs.2013.04.07

Abrahms, M. (2011). IPad apps for people with disabilities. *Disabilities @ Suite 101*. Retrieved from http://www.suite101.com/contentipad-apps-for-people-with-disabilities-a331710

Allor, J., Mathes, P., Jones, F., Champlin, T., & Cheatham, J. (2010). Individualized research-based reading instruction for students with intellectual disabilities: Success stories. *Teaching Exceptional Children, 42*(3), 6-12.

Almekhlafi, A., & Almeqdadi, F. (2010). Teachers' perceptions of technology integration in the United Arab Emirates school classrooms. *Journal of Educational Technology & Society, 13*(1), 165-175.

Alquraini, T. A. (2013). An analysis of legal issues relating to the least restrictive environment standards. *Journal of Research in Special Educational Needs, 13*, 152-158. doi:10.1111 /j.1471-3802.2011.01220.x

An, Y. J., & Reigeluth, C. M. (2011). Creating technology-enhanced, learner-centered classrooms: K-12 teacher beliefs, perceptions, barriers, and support needs. *Journal of Digital Learning in Teacher Education, 28*(2), 54-62.

Andronic, A., & Andronic, R. (2012). Multiple intelligences and learning regarding students – An experimental approach. *Review of the Air Force Academy, 1,* 97-102.

Apple. (2015). *IPad in education.* Retrieved from http://www.apple.com/education/iPad/

Audi, R. (2011). *Epistemology: A contemporary introduction to the theory of knowledge*. New York, NY: Routledge.

Awwad, A. A. A. (2013). Piaget's theory of learning. *Interdisciplinary Journal of Contemporary Research in Business, 4*(9), 106-129.

Benjamin, L. T. (1988). A history of teaching machines. *American Psychologist, 43*, 703-712.

Bouck, E. C., Flanagan, S., Miller, B., & Bassette, L. (2012). Rethinking everyday technology as assistive technology to meet students' IEP goals. *Journal of Special Education Technology*, *27*(4), 47–57.

Brownell, M., Smith, S., & Crockett, J. (2012). *What works for special-needs learners: Inclusive instruction: Evidence-based practices for teaching students with disabilities*. New York, NY: Guilford Press.

Chien, Y. (2013). The integration of technology in the 21st century classroom: Teachers' attitudes and pedagogical beliefs toward emerging technologies. *Journal of Technology Integration in the Classroom*, *5*(1), 5-11.

Churchill, D., Fox, B., & King, M. (2012). Study of affordances of iPads and teachers' private theories. *International Journal of Information and Education Technology, 2*(3), 251-254. doi:10.7763/IJIET.2012.V2.122

Cicconi, M. (2013). Vygotsky meets technology: A reinvention of collaboration in the early childhood mathematics classroom. *Early Education Journal, 42*(1), 57-65.

Ciftci, M., & Kurt, S. (2012). Barriers to teachers' use of technology. *International Journal of Instructional Media*, *39*(3), 225-238.

Connolly, R. E. (1989). Public law 94-142: The education for all handicapped children act. *New England Journal of Human Services, 9*(1), 21-27.

Courduff, J. (2011). One size never fits all: Tech integration for special needs. *Learning & Leading with Technology, 38*(8), 16-20.

Creswell, J. W. (2013). *Qualitative inquiry & research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: Sage.

Cumming, T., & Rodríguez, C. (2013). Integrating the iPad into language arts instruction for students with disabilities: Engagement and perspectives. *Journal of Special Education Technology, 28*(4), 244-250.

Cumming, T., M., Strnadová, I., & Singh, S. (2014). IPads as instructional tools to enhance learning opportunities for students with developmental disabilities: An action research project. *Action Research, 12*(2), 151-176. doi:10.1177/1476750314525480

Davidson, A. (2012). Use of mobile technologies by young adults living with an intellectual disability: A collaborative action research study. *Journal on Developmental Disabilities, 18*(3), 21-32.

Davidson, L. Y. J., Richardson, M., & Jones, D. (2014). Teachers' perspective on using technology as an instructional tool. *Research in Higher Education Journal, 24*, 1-25.

Dean, C. B., Hubbell, E. R., & Pitler, H. (2012). *Classroom instruction that works: Research-based strategies for increasing student achievement* (2nd ed.). Alexandria, VA: Association for Supervision & Curriculum Development (ASCD).

Dee. T. S. & Jacob, B.A. (2010). The impact of No Child Left Behind on students, teachers, and schools. *Brookings Papers on Economic Activity, 2010*(2), 149-194.

De León, L. (2012). Model of models: Preservice teachers in a Vygotskian scaffold. *The Educational Forum, 76*(2), 144-157.

Dixon, F. A., Yssel, N., McConnell, J. M., & Hardin, T. (2014). Differentiated instruction, professional development, and teacher efficacy. *Journal for the Education of the Gifted, 37*, 111-127.

Downing, J. E. (2010). *Academic instruction for students with moderate and severe intellectual disabilities in inclusive classrooms.* Thousand Oaks, CA: Corwin.

Ekeh, P. U., & Oladayo, O. T. (2013). Academic achievement of regular and special needs students in inclusive and non-inclusive classroom settings. *European Scientific Journal, 9*(8), 141-150.

Ellis, J. W. (2013). The law's understanding of intellectual disability as a disability. *Intellectual and Developmental Disabilities, 51*(2), 102-107.

Ensor, T., & Elementary, R (2012). Teaming with technology: 'Real' iPad applications. *Journal of Adolescents & Adult Literacy, 56*(3), 193. doi:10.1002/JAAL.00127

Ergo in Demand, Inc. (2000-2013). *About blackboards: Blackboard technology and chalkboard history advances.* Retrieved from http://www.ergoindemand.com/about_chalkboards.htm

Ertmer, P. A., Ottenbreit-Leftwich, A. T., Sadik, O, Sendurur, E., & Sendurur, P. (2012). Teacher beliefs and technology integration practices: A critical relationship. *Computers & Education, 59*(2), 423-435.

*Evolution of **cl**assroom **t**ech.* (2011-2013). Retrieved from http://www.edulabsglobal.com/evolution-of-classroom-tech/

Flewitt, R., Kucirkova, N., & Messer, D. (2014). Touching the virtual, touching the real: iPads and enabling literacy for students experiencing disability. *Australian Journal of Language & Literacy*, *37*(2), 107-116.

Flores, M. M., Hill, D. A., Faciane, L. B., Edwards, M. A., Tapley, S. C., & Dowling, S. J. (2014). The Apple iPad as assistive technology for story-based interventions. *Journal of Special Education Technology*, *29*(2), 27-37.

Foote, C. (2012). Learning together: The evolution of a 1:1 iPad program. *Internet@Schools, 19*(1), 15-18. Retrieved from www.internet@schools.com

Foulger, T. S., Waker, M. L., Burke, D., Hansen, R., Williams, M. K., & Slykhuis, D. A. (2013). Innovators in teacher education: Diffusing mobile technologies in teacher preparation curriculum. *Journal of Digital Learning in Teacher Education, 30*(1), 21-29.

400 years of school history. (2002). *Curriculum Review, 41*(6), 13. Retrieved from http://www.highbeam.com/doc/1g1-82288781.html

Fox, Z. (2010). 4 ways iPads are changing the lives of people with disabilities. *Mashable*. Retrieved from http://mashable.com/2011/07/25/iPads-disabilities/

Gall, M. D., Gall, J. P., & Borg, W. R. (2007). *Educational research: An introduction* (8th ed.). New York, NY: Pearson.

Gartin, B. C., & Murdick, N. L. (2005). IDEA 2004: The IEP. *Remedial & Special Education, 26*(6), 327-331.

Gentile, M. (2012). The importance of managing iPads in the classroom. *The Education Digest, 78*(3), 11-13. Retrieved from www.ed.com

Gervais, S. (2012). *The evolution of educational tools and technology.* Retrieved from: https://marcplamondon.nipissingu.ca/wiki/2011_Education.Print.aspx?Page=2011_Education

Gilakjani, A. P., Leong, L., & Ismail, H. (2013). Teachers' use of technology and constructivism. *International Journal of Modern Education and Computer Science, 5*(4), 49-63.

Gill, P., Stewart, K., Treasure, E., & Chadwick, B. (2008). Methods of data collection in qualitative research: Interviews and focus groups. *British Dental Journal, 204*(6), 291-295.

Giorgi, A. J., Roberts, T. G., Estepp, C. M., Conner, N. W., & Stripling, C. T. (2013). An investigation of teacher beliefs and actions. *NACTA Journal, 57*(3), 2-9.

Gredler, M. E. (2012). Understanding Vygotsky for the classroom: Is it too late? *Educational Psychology Review*, *24*, 113-131.

Green, S. L. (2014). *S.T.E.M. education: Strategies for teaching learners with special needs.* Hauppauge, NY: Nova Science.

Gu, X., Zhu, Y., & Guo, X. (2013). Meeting the "digital natives": Understanding the acceptance of technology in classrooms. *Educational Technology & Society, 16*(1), 392-402.

Hand-held calculators. (2005). Retrieved from http://www.ideafinder.com/history/inventions/handcalculator.htm

Helps, D. H., & Herzberg, T. S. (2013). The use of an iPad2 as a leisure activity for a student with multiple disabilities. *Journal of Visual Impairment & Blindness, 107*(3), 232-236.

Husserl, E. (1964). *The idea of phenomenology* (Translated by W. P. Alston & G. Nakhnikian). The Hague, Netherlands: Martinus Nijhoff.

Jacob, S. A., & Furgerson, S. (2012). Writing interview protocols and conducting interviews: Tips for students new to the field of qualitative research. *The Qualitative Report*, *17*, 1-10. Retrieved from www.nova.edu/ssssAR/QR17/jacob.pdf

Jahnke, I., & Kumar, S. (2014). Digital didactical designs: Teachers' integration of iPads for learning-centered processes. *Journal of Digital Learning in Teacher Education, 30*(3), 81-88.

Joseph, M., & Ramani, E. (2011). Researching one's way into Vygotsky. *Education as Change, 15*(2), 287-301.

Kagohara, D.M., van der Meer, L., Ramdoss, S., O'Reilly, M. F., Lancioni, G. E., Davis, T. N., & Sigafoos, J. (2013). Using iPods and iPads in teaching programs for individuals with developmental disabilities: A systemic review. *Research in Developmental Disabilities, 34*(1), 147-156.

Kamii, C., & Ewing, J. K. (1996). Basing teaching on Piaget's constructivism. *Childhood Education, 72*(5), 260-264.

Kelly, G. (2013). *Differentiated instruction in the classroom* (Order No. 3568331). Available from ProQuest Dissertations & Theses Global. (1424274598). Retrieved from http://search.proquest.com/docview/1424274598?accountid=12085

Khodamoradi, A., Iravani, H., & Jafarigohar, M. (2013). The effect of teacher's scaffolding and peers' collaborative dialogue on the acquisition of English tenses in the zone of proximal development: A sociocultural perspective. *European Online Journal of Natural and Social Sciences, 2*(2), 336-346.

Kiranli, S., & Yildirim, Y. (2013). Technology usage competencies of teachers: Prior to faith project implementation. *Electronic Journal of Social Sciences, 12*(47), 88-105.

Kleickmann, T., Richter, D., Kunter, M., Elsner, J., Besser, M., Krauss, S., & Baumert, J. (2013). Teachers' content knowledge and pedagogical content knowledge: The role of structural differences in teacher education. *Journal of Teacher Education*, *64*(1), 90-106.

Kluth, P. (2013). Differentiating instruction. *Education Canada, 53*(2), 11-15.

Koehler, M. J., Mishra, P., & Cain, W. (2013). What is technological pedagogical content knowledge (TPACK)? *Journal of Education*, *193*(3), 13-19.

Krause, D. A. (2000). "Among the greatest benefactors of mankind": What the success of the chalkboard tells us about the future of computers in the classroom. *The Journal of Midwest Modern Language Association: Computers and the Future of the Humanities, 33*(2), 6-16.

Laferrière, T., Hamel, C., & Searson, M. (2013). Barriers to successful implementation of technology integration in educational settings: A case study. *Journal of Computer Assisted Learning, 29*, 463-473. doi:10.1111/jcal.12034

Lee, C. G. (2012). Reconsidering constructivism in qualitative research. *Educational Philosophy & Theory*, *44*(4), 403-412. doi:10.1111/j.1469-5812.2010.00720.x

Luckasson, R., & Schalock, R. L. (2013). What's at stake in the lives of people with intellectual disability? Part II: Recommendations for naming, defining, diagnosing, classifying, and planning supports. *Intellectual and Developmental Disabilities, 51*(2), 94-101,138.

Maxwell, J. A. (1996). *Qualitative research design: An interactive approach*. Thousand Oaks, CA: Sage**.**

McLaughlin, M. J. (2010). Evolving interpretations of educational equity and students with disabilities. *Exceptional Children, 76*(3), 265-278.

Merriam, S. B. (2009). *Qualitative Research: A guide to design and implementation*. San Francisco, CA: Jossey-Bass.

Miller, B. T., Krockover, G. H., & Doughty, T. (2013). Using iPads to teach inquiry science to students with a moderate to severe intellectual disability: A pilot study. *Journal Research Science Teach, 50*, 887–911. doi:10.1002/tea.21091

Miranker, C. (2008). *Hands-on history of books: Hornbooks.* Retrieved from http://www.bookmakingwithkids.com/?p=716

Moerer-Urdahl, T., & Creswell, J. W. (2008). Using transcendental phenomenology to explore the "ripple effect" in a leadership mentoring program. *International Journal of Qualitative Methods, 3*(2), 19-35.

Moores, D. F. (2011). Editorial: Waist deep in the big muddy: The individuals with disabilities education act **(**IDEA**)** and no child left behind (NCLB). *American Annals of the Deaf, 155*(5), 523-525. Washington, DC: Gallaudet University Press.

Moustakas, C. E. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage.

Murray, O. T., & Olcese, N. R. (2011). Teaching and learning with iPads, ready or not? *TechTrends, 55*(6), 42-48.

National Center for Intellectual Disabilities. (n.d.). *The **s**tate of **i**ntellectual **d**isabilities*. Retrieved from http://www.ncld.org

Newlands, G. M., & Ruston, R. (2010). Human rights and the image of god. *Scottish Journal of Theology, 63*(4), 488-490. doi:10.1017/S0036930608004353

Nyikos, M., & Hashimoto, R. (1997). Constructivist theory applied to collaborative learning in teacher education: In search of ZPD. *Modern Language Journal*, *81*(4), 506.

Paré, M. (2012). Inclusion of students with disabilities in the age of technology: The need for human rights guidance. *Education Law Journal, 22*(1), 39-61.

Parkay, F. W., Hass, G., & Anctil, E. J. (2010). *Curriculum leadership: Readings for developing quality educational programs.* Boston, MA: Allyn & Bacon.

Parmenter, T. (2011). What is intellectual disability? How is it assessed and classified? *International Journal of Disability, Development and Education, 58*(3), 303-319.

Partnership for 21st century skills and state partners launch common core toolkit at institute.21. (2011). *Economics Week*, 656.

Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.

Pei-Lin, W., Yukiko M., & Emily, C. B. (2014). Effectiveness of cognitive skills-based computer-assisted instruction for students with disabilities: A synthesis. *Remedial and Special Education, 35*(3), 167-180. doi:10.1177/0741932513514858

Piaget, J. (1954). *The construction of reality in the child*. New York, NY: Basic Books.

Pilgrim, J., Bledsoe, C., & Reily, S. (2012). New technologies in the classroom. *Delta Kappa Gamma Bulletin, 78*(4), 16-22.

Qu, S. Q., & Dumay, J. (2011). The qualitative research interview. *Qualitative Research in Accounting & Management*, *8*(3), 238-264.

Roblyer, M. D., & Doering, A. H. (2013). *Integrating educational technology into teaching* (6th ed.). Upper Saddle River, NJ: Pearson.

Ramorola, M. Z. (2013). Challenge of effective technology integration into teaching and learning. *Africa Education Review, 10*(9), 654-670.

Rafool, B., Sullivan, E., & Al-Bataineh, A. (2012). Integrating technology into the classroom. *International Journal of Technology, Knowledge & Society*, *8*(1), 57-71.

Rescher, N. (2003). *Epistemology: An introduction to the theory of knowledge*. Albany, NY: State University of New York.

Riley, P. (2013). Teaching, learning, and living with iPads. *Music Educators Journal, 100*(1), 81-86. doi:10.1177/0027432113489152

Roblyer, M.D., & Doering, A.H. (2013). *Integrating educational technology into teaching*. Boston**,** MA: Pearson.

Rodríguez, C. D., Strnadová, I., & Cumming, T. (2014). Using iPads with students with disabilities. *Intervention in School and Clinic, 49*(4), 244-250.

Rossman, G. B., & Rallis, S. F. (2003). *Learning in the field: An introduction to qualitative research* (2nd ed.). Thousand Oaks, CA: SAGE.

Roth, K. (2014). Technology for tomorrow's teachers. *Journal of Physical Education, Recreation & Dance, 85*(4), 3-5.

Rudestam, K. E., & Newton, R.R. (2001). *Surviving your dissertation: A comprehensive guide content and process* (2nd ed.). Thousand Oaks, CA: Sage.

Schwandt, T A. (2007). *The Sage dictionary of qualitative inquiry*. Los Angeles, CA: Sage.

Shihkuan, H., & Ping-Yin, K. (2013). The impact of multilevel factors on technology integration: The case of Taiwanese grade 1-9 teachers and schools. *Educational Technology Research & Development, 61*(1), 25-50.

Skinner, B. F. (1968). *The technology of teaching*. Englewood Cliffs, NJ: Prentice Hall.

Smith, T. E., & Patton, J. R. (1998). *Section 504 and public schools: A practical guide for determining eligibility, developing accommodation plans, and documenting compliance*. Austin, TX: Pro-Ed.

Stereoscope. (n.d.). Retrieved from www.dlt.ncssm.edu/collections/toys/html/exhibit01.htm

Streep, M. (2001). Evolving classroom: Slate and slate pencils. Retrieved from http://www.pbs .org/kcet/publicschool/evolving_classroom/slate.html

Stewart, C. M., Schifter, C. C., & Selverian, M. (2010). *Routledge research in education: Teaching and learning with technology: Beyond constructivism*. Florence, KY: Routledge.

Vargas, J. (2005). *A brief biography of B. F. Skinner.* Retrieved from http://www.bfskinner. org/bfskinner/AboutSkinner.html

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes.* Cambridge, MA: Harvard University Press.

Wertsch, J. V., & Sohmer, R. (1995). Vygotsky on learning and development. *Human Development,* 38, 332-337.

Williams, P. J. (2013). Research in technology education: Looking back to move forward. *International Journal of Technology and Design Education. 23*(1), 1-9. doi:10.1007 /s10798-011-9170-8

Xiaoqing, G., Yuankun, Z., & Xiaofeng, G. (2013). Meeting the "digital natives": Understanding the acceptance of technology in classrooms. *Journal of Educational Technology & Society, 16*(1), 392-402.

Yollis. (2011). *Film strip projector*. Retrieved from http://yollis365project.blogspot.com/2011 /09/film-strip-projector.html

Zafra, A. (2009). *Brief history of overhead projector.* Retrieved from http://www.brighthub.com/computing/hardware/articles/39556.aspx

Zimmerman, B. J. (1982). Piaget's theory and instruction: How compatible are they? *Contemporary Educational Psychology*, *7*(3), 204-216.

Zirkel, P. A. (2013). Is it time for elevating the standard for FAPE under IDEA? *Exceptional Children, 79*(4), 497-508.

APPENDIX A

Demographic Information

1. What is your age range?
( ) 20-29
( ) 30-39
( ) 40-49
( ) 50-59
( ) 60-69
( ) 69+

2. What is your gender? ( ) Male ( ) Female

3. What is your highest level of degree?

( ) Bachelor's Degree
( ) Master's Degree
( ) Specialist Degree
( ) Doctorate
( ) Other (Please specify: _____)

4. Are you a National Board Certified Teacher?

( ) Yes ( ) No

5. What level if intellectual disability are you currently teaching?

( ) profound ( ) severe ( ) mild ( ) moderate

6. What is your years of teaching experience?
( ) 0-5 years
( ) 6-10 years
( ) 11-15 years
( ) 16-20 years
( ) 21-25 years
( ) 26-30 years
( ) 30+ years

7. How long have you been using the iPad as an instructional tool?
( ) 1-11 months
( ) 1-2 years
( ) 2-4 years
( ) 4-6 years

8. Number of students in your class ( )

APPENDIX B

Recruitment of Sites

Date:

Title

School District:

Dear [Recipient]:

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a Doctor of Education: Curriculum & Instruction. The title of my research project is Special Education Teachers' Lived Experiences Implementing the iPad as an Instructional Tool for Students with Intellectual Disabilities. The purpose of my research is to describe the lived experience of 10 to 15 special education teachers implementing the iPad as an instructional tool for elementary students with intellectual disabilities at North Carolina schools.

I am writing to request your permission to conduct my research in your school district at elementary schools where special education teachers are providing instructions to students with intellectual disabilities using an iPad. I am asking for your permission to utilize your special education teachers' employment list to recruit participants for my research.

Prior to the data collection, each participant will be asked to complete a demographic questionnaire form. The questionnaire is to conduct a background analysis on the special education teachers' knowledge of implementing the iPad as an instructional tool for students with intellectual disabilities. The demographic questionnaire will consist of data with reference to the teachers' gender, level of education, and years of teaching experience. The information collected from the questionnaire will not be analyzed during the data collection process;

however, it will be used to identify the demographics of the teachers in the study. Participants will also be asked to participate in an interview, observation, and focus group. The data will be used to help develop an understanding of this phenomenon by investigating the methodologies utilized by teachers and the experiences they are providing to instruct learners with intellectual disabilities. By examining special education teachers' lived experience implementing the iPad as an instructional tool, special education teachers can inform their proficiencies and knowledge to impact students' learning.

Participants will be presented with informed consent information prior to participating. Taking part in this study is completely voluntary, and participants are welcome to discontinue participation at any time.

Thank you for considering my request. If you choose to grant permission, please provide a signed statement on approved letterhead indicating your approval.

Sincerely,

Takisha Epps

Doctor of Education Candidate

APPENDIX C

Recruitment of Participants

Dear [Recipient]:

As a graduate student in the School of Education at Liberty University, I am conducting research as part of the requirements for a Doctor of Education: Curriculum & Instruction. The title of my research project is Special Education Teachers' Lived Experiences Implementing the iPad as an Instructional Tool for Students with Intellectual Disabilities. The purpose of my research is to describe the lived experience of 10 to 15 special education teachers implementing the iPad as an instructional tool for elementary students with intellectual disabilities at North Carolina schools.

I am writing to request your help as a participant for my research project. Due to the qualitative nature of this study, you will be provided a demographic questionnaire and asked to take part in an interview, observation, and focus group. The questionnaire is to conduct a background analysis on the special education teachers' knowledge of implementing the iPad as an instructional tool for students with intellectual disabilities. The demographic questionnaire will consist of data with reference to the teachers' gender, level of education, and years of teaching experience. The information collected from the questionnaire will not be analyzed during the data collection process; however, it will be used to identify the demographics of the teachers in the study.

The data will be used to help develop an understanding of this phenomenon by investigating the methodologies utilized by teachers and the experiences they are providing to instruct learners with intellectual disabilities. By examining special education teachers' lived

experience implementing the iPad as an instructional tool, special education teachers can inform their proficiencies and knowledge to impact students' learning.

As a participant, you will be presented with informed consent information prior to participating. Listed below, I have provided an overview of the interview, observation, and the focus group:

Interview: This interview will be audio recorded. You will be asked questions about iPads as an instructional tool in your classroom. The interview will take a minimum of thirty minutes to complete.

Observation: This observation will be video recorded. You will be asked to participate in an observation at your worksite demonstrating your experience implementing the iPad as an instructional tool in your classroom. This observation will last for forty-five minutes, depending on your class session.

Focus group: The focus group session will be audio recorded. You will be asked open-ended questions describing the shared experiences of special education teachers implementing the iPad as an instructional tool. The focus group session will be a minimum of thirty minutes.

If you would like to become a participant in this study, please review and sign the included consent form. After signing the consent form please return the form to me via email at:XXXXX@liberty.edu or contact me at 888-123-1234 to schedule a pickup date.

Thank you for considering my request. Taking part in this study is completely voluntary, and participants are welcome to discontinue participation at any time. Please feel free to contact me with any questions regarding the research study either prior to your consent or during the study. My contact information is: Email: xxxxx@liberty.edu Phone: (888)123-1234.

Sincerely,

Takisha Epps

Doctor of Education Candidate

APPENDIX D

Follow-up Recruitment of Participants

The following information will be sent via email to participants who have returned the signed consent form. The following email will express my appreciation for their participation and to inform them that they will be contacted to schedule a time, date, and location for an interview, observation, and focus group.

Dear Participant,

Thank you for agreeing to participate in my doctoral research study. Your data will be used to help develop an understanding of this phenomenon by investigating the methodologies and the shared experiences of special education teachers instructing learners with intellectual disabilities, using the iPad. For this study you will be provided a demographic questionnaire. The questionnaire is to conduct a background analysis on the special education teachers' knowledge of implementing the iPad as an instructional tool for students with intellectual disabilities. The demographic questionnaire will consist of data with reference to the teachers' gender, level of education, and years of teaching experience. The information collected from the questionnaire will not be analyzed during the data collection process; however, it will be used to identify the demographics of the teachers in the study.

As the qualitative nature of this study, data will be collected using three data gathering methods: interview, observation, and focus group. Listed below, I have provided an overview of each data collection method that you are asked to volunteer as a participant. I will be contacting you to schedule a time, date, and location for your interview, observation, and focus group.

Interview: This interview will be auditory recorded. You will be asked questions about iPads as an instructional tool in your classroom. The interview will take a minimum of thirty minutes to complete.

Observation: This observation will be video recorded. You will also be asked to participate in an observation at your worksite demonstrating your experience implementing the iPad as an instructional tool in your classroom. This observation will last for forty five minutes, depending on your class session.

Focus group: The focus group session will be auditory recorded. You will be asked open ended questions describing the shared experiences of special education teachers implementing the iPad as an instructional tool. The focus group session will be a minimum of thirty minutes.

Again, thank you for your participation in my doctoral research study. Your experiences are important to the current literature base. I look forward to meeting you and documenting your appreciated experiences. Please feel free to contact me with any questions or concerns. My contact information is: Email: XXXXX@liberty.edu Phone: (888)123-1234.

Thank you,

Takisha Epps

Doctor of Education Candidate

APPENDIX E

CONSENT FORM (http://www.liberty.edu/index.cfm?PID=20088)

Special Education Teachers' Experiences Implementing the iPad as an Instructional Tool for Students with Intellectual Disabilities

Takisha Epps

Liberty University

School of Education

You are invited to be in a research study that will examine the pedagogical experiences of special education teachers using the iPad as an instructional tool for students with intellectual disabilities. You were selected as a possible participant because of your position as a special education teacher who uses the iPad as an instructional tool to teach students with intellectual disabilities. I ask that you read this form and ask any questions you may have before agreeing to be in this study. Takisha Epps, a doctoral candidate in the School of Education at Liberty University, is conducting this study.

Background Information:

Few studies have explored the use of iPads as an instructional tool for students with intellectual disabilities. It is hoped that special education teachers' experiences will enhance the teaching and learning process using the iPad as an instructional tool for students with intellectual disabilities. The purpose of this study is to examine the experiences of special education teachers using the iPad as an instructional tool for students with intellectual disabilities.

Procedures:

If you agree to be in this study, each participant will receive a demographic questionnaire. The questionnaire is to conduct a background analysis on the special education teachers' knowledge

of implementing the iPad as an instructional tool for students with intellectual disabilities. The demographic questionnaire will consist of data with reference to the teachers' gender, level of education, and years of teaching experience. The information collected from the questionnaire will not be analyzed during the data collection process; however, it will be used to identify the demographics of the teachers in the study.

Each participant is asked to participate in one face-to-face interview. The interview will include questions about iPads as an instructional tool in your classroom. The interview will take a minimum of thirty minutes to complete. This interview will be audio recorded. You will also be asked to participate in an observation at your worksite demonstrating your experience implementing the iPad as an instructional tool in your classroom. This observation will last forty-five minutes, depending on your class session. Lastly, you will be asked to participate in a focus group. The focus group will consist of open ended questions describing the shared experiences of special education teachers implementing the iPad as an instructional tool. The focus group will meet one time and the session will be a minimum of thirty minutes.

Risks and Benefits of being in the Study:

This study is minimal risk, which is no greater that one might participate when going about everyday activities. Benefits of this study outweigh the minimal risk to you as the participant. As a participant, you will be adding to the existing body of research on using the iPad as an instructional tool for students with intellectual disabilities. Your participation in the focus group may allow you to receive a direct benefit as you may have the opportunity to learn what has and has not worked for other special education teachers implementing the iPad for student with intellectual disabilities. Your personal experiences will be shared in a confidential manner that

allows you to speak freely and share openly. It is hoped that we will learn more about using the iPad as an instructional tool for students with intellectual disabilities.

Compensation:

There is no compensation associated with your participation in this study.

Confidentiality:

All information for this study will be kept confidential at all times. During the focus groups, information discussed may run a minimal risk of being repeated by other participants. The researcher will inform participants to be confidential by not identifying other participants in the focus group.

The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify a subject. Collected data will be stored on the researcher's personal, password-protected computer. All written data for this study will be collected and recorded in a field notebook and kept in a locked filing cabinet until final approval of the dissertation committee. Following a three-year retention period, all collected data will be deleted and destroyed. The researcher will use pseudonyms for the participants and their locations to preserve anonymity and confidentiality.

Voluntary Nature of the Study:

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

How to Withdraw from the Study

If you choose to withdraw from the study, please contact the researcher, Takisha Epps, at XXXXX@liberty.edu or at 888-123-1234 immediately. Should you choose to withdraw, data

collected from you, apart from focus group data, will be destroyed immediately and will not be included in this study. Focus group data will not be destroyed, but your contributions to the focus group will not be included in the study if you choose to withdraw.

Contacts and Questions:

The researcher conducting this study is Takisha Epps. You may ask any questions you have now. If you have questions later, you are encouraged to contact:

Takisha Epps	888-123-1234	xxxxx@liberty.edu
Dr. Angela M. Smith, faculty advisor	666-555-0000	xxxxx@liberty.edu

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, you are encouraged to contact the Institutional Review Board, 1971 University Blvd, Carter 134, Lynchburg, VA 24515 or email at irb@liberty.edu.

Please notify the researcher if you would like a copy of this information to keep for your records.

Statement of Consent:

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study. By signing below, I consent to data collection methods and attest to my experience with the phenomenon as a special education teacher.

☐ I consent to having the interview and focus group digitally recorded for audio purposes only and the observation video recorded or photographed.

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

Signature: _____Date: _____

The Liberty University Institutional

Review Board has approved

this document for use from

11/6/15 to 11/5/16

Protocol # 2312.110615

APPENDIX F

Prospective Participant Telephone Contact

The following information will be conveyed via telephone to each participant who has returned the signed consent form. The following telephone call will express my appreciation for their participation and to schedule a time, date, and location for an interview, observation, and focus group.

Hello Participant:

Thank you for your consent to participate in my doctoral research study, which is titled "Special Education Teachers' Lived Experiences Implementing the iPad as an Instructional Tool for Students with Intellectual Disabilities". The nature of this call is to schedule a time, date, and location for your interview, observation, and focus group.

Interview: The interview will take a minimum of thirty minutes to complete.

Available Dates: _____

Available Times: _____

Preferred Location: _____

Observation: This observation will last for forty-five minutes, depending on your class session.

Available Dates: _____

Available Times: _____

Preferred Location: _____

Focus group: The focus group session will be a minimum of thirty minutes.

Available Dates: _____

Available Times: _____

Preferred Location: _____

Again, thank you for your participation in my doctoral research study. Your experiences are important to the current literature base. I look forward to meeting you and documenting your appreciated experiences. Please feel free to contact me with any questions or concerns. My contact information is: Email: xxxxx@liberty.edu Phone: (888)123-1234.

Please have a wonderful day.

APPENDIX G

Observation Notes Procedures

An observational protocol will be conducted to observe special education teachers' experiences using the iPad as an instructional tool for students with intellectual disabilities. During this process the researcher will develop and utilize an observational protocol/template for consistency of observations. The observational tools will provide indications of teachers' experiences with current practices.

1. The participants' observational data will be collected and recorded in a field notebook. All data will be transferred and stored on the researcher's personal hard drive, which is password protected. The field notebook and the researcher's personal computer will be kept in a locked and secured area.
2. Each observation will be recorded in the field notebook and transferred to a personal hard drive. A template will be designed with the following time stamps: participant's assigned pseudonym, date, time, place, and type of data collection (observation).
    a. The observational template will include an area to mark the timestamps, which will include start/stop times, and 5 minute incremental observation scans around the classroom.
    b. The observational template will include categories of applications used, types of supports implemented (if any), pedagogical behavior observed, types of technology

applications used, consistencies, and physical characteristics of the participants.

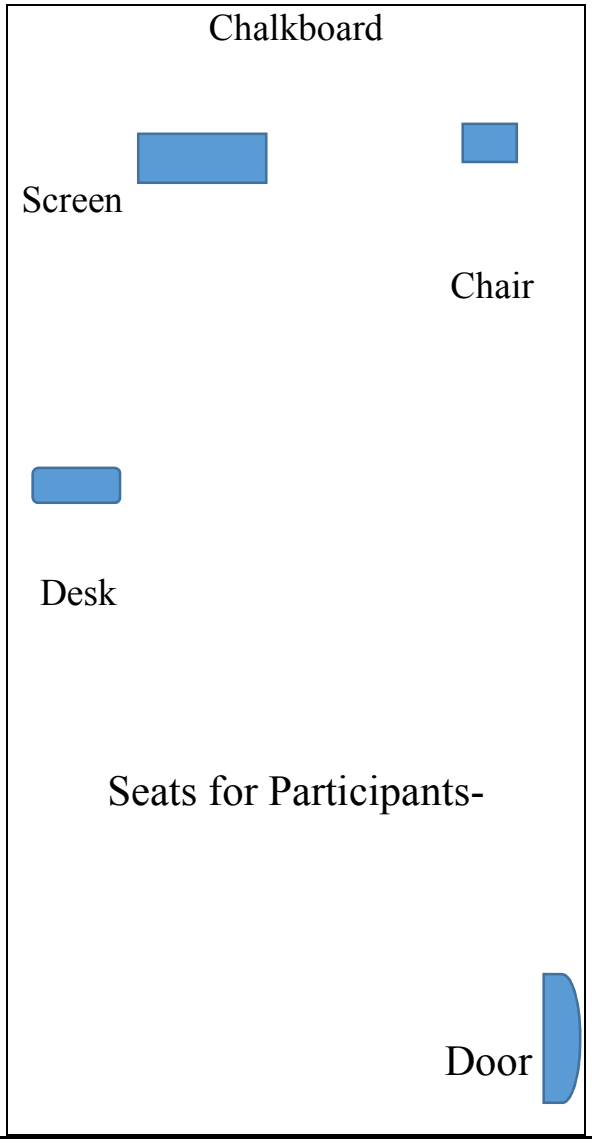
3. A map of each participant's site will be sketched to provide the researcher the layout and detailed specifics of the classroom routine and traffic flow.
4. Typically, teaching environments for students with intellectual disabilities are located in a specific area or location in the classroom. If for any reason the participant has to follow a student, I will adjust and document alternative location in my data collection notes.

APPENDIX H
Observational Protocol

Observational Protocol

Length of Activity: ---Minutes

Descriptive Notes	Reflective Notes
General:	

Description Notes	Reflective Notes
	

	SKETCH OF CLASSROOM

APPENDIX I

Standardized Open-Ended Interview Questions

Shared experiences with the integration of the iPad to meet the educational needs of elementary learners with intellectual disabilities

1. How would you describe your prior experience(s) using the iPad?
2. Please describe your current level of experience using the iPad as an instructional tool for learners with intellectual disabilities.

Silent Probe:……

3. How have your experiences using the iPad as an instructional tool impacted your delivery of the curriculum in your classroom?

Echo probe: "I see……Then what happens? (What were the students' effects)?"

Technological awareness and ability to integrate the iPad as an instructional tool for elementary students with intellectual disabilities

4. How long have you been using the iPad as an instructional tool for students with intellectual disabilities?

Probe: What types of applications did you find beneficial for enhancing students' academic practices?

5. Can you please share how you specifically have integrated some iPad activities and lessons into the students' curriculum?

Probe: What preparation or training prepared you to select your choice of activities and lessons?

6. What are some examples of curriculum connections that you have made using the iPad as an instructional tool for students with intellectual disabilities?

7. What resource(s), if any, have you used to enable you to implement the iPad as an instructional tool at this school?

8. Please describe your planning process for implementing the iPad as an instructional tool for classroom lessons and activities?

Probe: Explain how the implementation of an iPad can be functional for teaching and learning?

Instructional strategies for the use of the iPad as an instructional tool to enhance the teaching and learning process for elementary learners with intellectual disabilities

9. What types of training or preparation did your school provide you prior to implementing the iPad as an instructional tool for your students?

10. What support structures does your school district have to assist you in using an iPad as an instructional tool?

11. Can you please share with me some specific iPad lessons and activities that you use to instruct your students?

12. Can you provide me modifications, if any, that you have applied, while implementing the iPad as an instructional tool?

Probe: Can you explain how you develop modifications?

13. How has your technology professional development assisted you to effectively integrate the iPad in your students' curriculum?

Probe: Can you please describe how you implement learning strategies into your students' curriculum)?

Barriers or challenges (if any) for the use of the iPad as an instructional tool for elementary students with intellectual disabilities

14. Can you describe some barriers, if any, you have encountered in the implementation of the iPad in your classroom?

Probe: How do you address barriers as they transpire?

15. When thinking about implementing the iPad as an instructional tool, can you give me some examples of challenges that may hinder your use in the classroom?

Probe: How did you address the challenges that you experienced?

APPENDIX J

Standardized Open-Ended Focus Group Questions

Shared experiences with the integration of the iPad to meet the educational needs of elementary learners with intellectual disabilities

1. How did you feel when you received an iPad for instructional use in your classroom?

    Probe: Explain how receiving an iPad affected your teaching style.

2. Please describe how the iPad has added value to your students' curriculum?

    Probe: How have the added value stimulated your instructional method?

3. Describe how your pedagogy has been affected or not affected since implementing the iPad as an instructional tool?

    Probe: Explain how this pedagogy influenced your teaching style?

Technological awareness and ability to integrate the iPad as an instructional tool

4. Describe your planning process for implementing the iPad as an instructional tool?

    Probe: Explain how you differentiate instructions for different learners.

5. In your opinion, how appropriate is implementing the iPad as an instructional tool for students with intellectual disabilities?

    Probe: Discuss activities and lessons you have implemented using the iPad as an instructional tool for students with intellectual disabilities.

6. Describe your previous and current experience implementing the iPad as an instructional tool for students with intellectual disabilities.

    Probe: Please explain how you incorporate your prior learning experiences in your current classroom.

Instructional strategies for the use of the iPad as an instructional tool to enhance the teaching and learning process for elementary learners with intellectual disabilities

7. What strategies or programs are you aware of that are based on research for implementing the iPad as an instructional tool?

    Probe: Will you please provide me examples of how the strategies or programs you mentioned relate to the students you teach?

8. Please share some successful learning strategies for implementing the iPad as an instructional tool.

    Probe: Can you discuss strategies that you have developed for challenging learners?

Barriers or challenges (if any) for the use of the iPad as an instructional tool for students with intellectual disabilities

9. Please describe barriers or challenges (if any) have you encountered implementing the iPad as an instructional tool.

    Probe: Please describe how you addressed barriers or challenges as they occurred in your classroom.

10. Can you share additional information or experiences that you have encountered during the process of implementing the iPad as an instructional tool in your classroom.

APPENDIX K

Table K

Individual Interview Codes

Name	Number of Codes	Codes	Contributed to Theme
Aaliyah	16	*Engaged	Theme 3
		*Continually Learning	Theme 1
		*Other Instructional Avenues	Theme 3
		*Learn Individually	Theme 3
		*Limited Funds	Theme 2
		*Limited IPads	Theme 4
		*Colleagues' Support	Theme 1
		*Professional Development	Theme 1
		*Lesson Modification	Theme 3
		*Sensory Opportunity	Theme 3
		*Limited Budget	Theme 2
		*No Support	Theme 4
		*Usage Constraint	Theme 4
		*Student Collaboration	Theme 3
		*Research Lessons	Theme 3
		*Borrow IPads	Theme 4
Abby	9	*Critical Thinking	Theme 3
		*Limited IPads	Theme 4
		*Communication	Theme 3
		*Learning Potential	Theme 3
		*Unaware of Supports	Theme 4
		*Request Knowledge	Theme 1
		*Request Trainings	Theme 1
		*Promotes Independence	Theme 3
		*Students Monitoring	Theme 4
Abigail	14	*Practice Skills	Theme 3
		*Modification	Theme 3
		*Request Trainings	Theme 1

		*Individualize Instruction	Theme 3
		*Share Resource	Theme 2
		*Own Research	Theme 1
		*Self-Experience	Theme 1
		*Share Knowledge	Theme 1
		*Limited Resource	Theme 2
		*Student Collaboration	Theme 3
		*Colleagues' Support	Theme 1
		*Student Monitoring	Theme 4
		*Usage Constraint	Theme 4
		*Limited iPads	Theme 4
Brenda	8	*Positive Learning	Theme 3
		*Staff Development	Theme 1
		*Sharing Resources	Theme 2
		*1:1 Supervision	Theme 4
		*Progress Monitoring	Theme 3
		*Need More IPads	Theme 4
		*Internet Connection not Dependable	Theme 4
		*More Applications	Theme 2
Carissa	7	*Positive Learning	Theme 3
		*Engaged	Theme 3
		*Motivating	Theme 3
		*Need Training	Theme 1
		*Learn from Students	Theme 1
		*Usage Constraint	Theme 4
		*Share iPads	Theme 4
Chloe	13	*Rewards	Theme 3
		*Enhance learning	Theme 3
		*Independent Practice	Theme 3
		*Motivating	Theme 3
		*Undesired behaviors Decreased	Theme 3
		*Ideas from Granddaughters	Theme 1
		*Independent Practice	Theme 3
		*Keeps Students' Interest	Theme 3
		*Experiment on Own	Theme 1
		*Colleagues sharing	Theme 1
		*Request Workshops	Theme 1
		*No Tech Support	Theme 4

		*Limited Usage Time	Theme 4
Jackson	9	*Enhance Learning	Theme 3
		*Individual Learning	Theme 3
		*(PLC) Professional earning Community	Theme 1
		*Train Coworkers	Theme 1
		*More Free Apps	Theme 2
		*Need Assistive Technology Devices	Theme 2
		*Motivating	Theme 3
		*Increase Students' Interest	Theme 3
		*Students Engaged	Theme 3
Jasmine	19	*More Planning Time	Theme 2
		*Students Engaged	Theme 3
		*Individualize Instruction	Theme 3
		*Increase Interest	Theme 3
		*Colleagues Sharing	Theme 1
		*Self-Experience	Theme 1
		*Increase Students' Attention	Theme 3
		*No Tech Support	Theme 4
		*Google Searches	Theme 1
		*Need Professional Development	Theme 1
			Theme 2
		*More Free Apps	Theme 4
		*Limited IPad Usage	Theme 4
		*More IPads	Theme 3
		*Collaboration	Theme 2
		*Pinterest	Theme 2
		*YouTube	Theme 4
		*No Tech Support	Theme 2
		*Visuals	Theme 4
		*More Monitoring	Theme 4
Karen	9	*Collaboration	Theme 3
		*Motivation	Theme 3
		*Need Professional Development	Theme 1
		*Need Workshops	Theme 1
		*Sensory Stimulation	Theme 2
		*Limited Assistive Technology	Theme 2
		*Sharing IPads	Theme 4
		*More Planning	Theme 2
		*Time Constraints	Theme 4

Kellie	10	*Increased Interest	Theme 3
		*Collaboration	Theme 3
		*Google search	Theme 1
		*More Planning	Theme 2
		*More Free Apps	Theme 2
		*Student Research	Theme 3
		*Individualize Instruction	Theme 3
		*Need Workshops	Theme 1
		*Limited IPads	Theme 4
		*More Free Apps	Theme 2
Nicole	21	*Research Lessons	Theme 3
		*Read-aloud	Theme 2
		*Videos	Theme 2
		*Increase Students' Attention	Theme 3
		*Student Engagement	Theme 3
		*Student Collaboration	Theme 3
		* Pinterest	Theme 2
		*You-Tube	Theme 2
		*Rewards	Theme 3
		*Individualize Lessons	Theme 3
		*Need Workshops	Theme 1
		*Tailor lessons	Theme 3
		*Limited IPads	Theme 4
		*Limited Technology Support Staff via Email	Theme 4
		*More Monitoring	Theme 4
		*Slow Internet	Theme 4
		*Crashing Servers	Theme 4
		*Colleagues' Help	Theme 2
		*Colleagues Technical Support	Theme 4
		*Time Constraints	Theme 4
		*Easily to Break	Theme 4

APPENDIX L

Table L

Focus Group Codes

Focus Group	Number of Codes	Codes	Contributed to Theme
Focus Group 1	23	*Student Engagement	Theme 3
		*Student Interactive	Theme 3
		*Apprehensive may get Broken	Theme 4
		*Reward	Theme 3
		*1:1 Instruction	Theme 3
		*Student Progress	Theme 3
		*Creative Lessons	Theme 3
		*Beg and Borrow	Theme 4
		*Improved Teaching	Theme 3
		*Increase Students' Interest	Theme 3
		*Portability Learning	Theme 3
		*Student Motivation	Theme 3
		*Need Assistive Technology	Theme 2
		*Differentiated Lessons	Theme 3
		*More IPads	Theme 3
		*Need Grant Money	Theme 2
		*Time Consuming Fixing Problems	Theme 4
		*Virtual Reality Instruction	Theme 2
		*More Free Apps	Theme 2
		*Teacher Planning "Orienting Self to iPad and Apps"	Theme 2
		*Individualized Practice	Theme 2
		*Colleagues' Support	Theme 1
		*More Collaboration	Theme 2
Focus Group 2	22	*Improved Teaching	Theme 3
		*Individualized Practice	Theme 3
		*Behavior Incentive	Theme 3
		*Teachable Moments	Theme 3

		*Students' Interest	Theme 3
		*Teacher Venturing Outside the Box	Theme 3
		*Students Engaged	Theme 3
		*More Collaboration	Theme 3
		*Differentiated Lessons	Theme 3
		*Virtual Reality Instruction	Theme 3
		*Viewing Videos, Photos, and Texts	Theme 2
		*Read-aloud	Theme 2
		*Reward	Theme 3
		*Different Formats of Learning (visual, Auditory, and Kinesthetic)	Theme 2
		*More Planning Time	Theme 2
		*No Reliable Internet Services	Theme 4
		*No Tech Support	Theme 4
		*Colleagues' Support	Theme 1
		*Self- Experience	Theme 1
		*Time Constraints	Theme 4
		*More IPads	Theme 4
		*More Apps Funds	Theme 2
Focus Group 3	25	*Teacher Think Outside of the Box	Theme 3
		*Funds for Devices	Theme 2
		*Portability Learning	Theme 3
		*Used as a Reward	Theme 3
		*Empowers Students	Theme 3
		*More IPads	Theme 4
		*More Trainings	Theme 1
		*Student Engagement	Theme 3
		*Individualized Learning	Theme 3
		*Developed Parent Communication Log	Theme 3
		*Visual Component	Theme 2
		*Critical Thinking	Theme 3
		*Self-teaching	Theme 1
		*Students' Interest	Theme 3
		*Student Research	Theme 3
		*Increased Students' Communication	Theme 3

*More Planning Time	Theme 2
*Time Consuming Fixing Problems	Theme 4
*Differentiated Lessons	Theme 3
*Different Formats of Learning (Visual, Auditory, and Kinesthetic)	Theme 2
*Need Assistive Technology Funds	Theme 2
*Increased Student Willingness and Participation	Theme 3
*Show Students' Weakness and Strengths	Theme 3
*More Monitoring	Theme 4
*Behavior Incentive	Theme 3

APPENDIX M

Table M

Observation Overview

Name	Cognitive Impairment	Subject(s)	Instructional Time (Day)	Students' Participation	Teachers' Comfort Level (10 the highest and 1 lowest)	Students' Access to iPad
Aaliyah	Moderate Severe Profound	Math, Science, Language Arts, and Social Studies	16-30 minutes	Independently and Prompts	8	1:iPad to 4 students
Abby	Mild Moderate Severe Profound	Art and Leisure	15 minutes	Independently, Prompts, and Hand over Hand Guidance	9	1:iPad to 2 students
Abigail	Mild Moderate Profound	Math and Language Arts	15 minutes	Independently, Hand over hand guidance	4	1:iPad to 4-5 students
Brenda	Mild Moderate	Math, Science, Language Arts, and Social Studies	16-30 minutes	Prompts	5	1:iPad to 4 students
Carissa	Mild	Math and Language Arts	16-30 minutes	Independently	8	1:iPad to 1 student (cart)
Chloe	Mild Moderate Severe Profound	Math, Language Arts, and Social Studies	16-30 minutes	Prompts	3	1:iPad to 3 students

Jackson	Mild Moderate Severe Profound	Math and Language Arts	15 minutes	Hand over Hand Guidance	10	1:iPad to 3 students
Jasmine	Mild	Math, Language Arts, and Social Studies	16-30 minutes	Independently	6	1:iPad to 4 students
Karen	Severe Profound	Math and Language Arts	15 minutes	Hand over Hand Guidance, Prompts, and Independently	8	1:iPad to 3 students
Kellie	Moderate Severe	Math, Science and Language Arts	31-45 minutes	Hand over Hand Guidance and Independently	9	1:iPad to 2 students
Nicole	Mild	Math, Language Arts, and Social Studies	16-30 minutes	Prompts	4	1:iPad to 4 students

APPENDIX N

Table N

Observation Overview (IPads Applications and Adaptive Devices)

Name	IPad Applications	Application Awareness	Adaptive Devices
Aaliyah	Class DOJO; www.starfall.com; ABCYA; PBS KIDS; and Virtual sites	Somewhat Aware	Ear buds and Smartboard
Abby	Life Cycle for Science; Math Master; and ABC Sound	Considerably Aware	IPad holders; computer; and Smartboard
Abigail	Class DOJO; www.starfall.com; ABCYA; and Funbrain Jr.	Somewhat Aware	IPad cover (helps to stand up) and computer
Brenda	MCLASS 3-D and On-line Games	Partially Aware	Holders
Carissa	Scribble my Story; Flash to Pass; Spelling City; Sushi Monster; and Reading Rainbow	Considerably Aware	None
Chloe	ABCYA; ABC Mouse; photo gallery; Turtle Diaries; and Google	Partially Aware	Held and positioned by staff.
Jackson	Lite Word Magic; 10 Minute News; Flashcards +; iTrace; Kids Numbers; News-O-Matic; Voice Changer; b Creative; Time Telling; and PowerPoint	Very Aware	Bright Link PC projector; computer; pointer; and floor stand
Jasmine	You-Tube; Reading Eggs; Ninja; Adobe Voice; ABC Mouse; and Moby Max	Somewhat Aware	None
Karen	ABC; 123; and Communication	Somewhat aware	None
Kellie	www.abcmouse.com; www.starfall.com; Letter UP; Brainbean; BrainPop; Kids Learning; Coolmath; Scootpad; King of Math; 123 Memory Quick 4 Math;	Very aware	Bright Link PC projector; easels; student's desk; or small table

Nicole	Proloquo2go, Look2learn, iConverse; and Words AdaptedMind math; www.MysteryScience.com; visuals (photos; videos; and texts); read-aloud texts; iConverse; Look2learn; Proloquo2go; and individualized websites	Somewhat Aware	None