TEACHER PERCEPTIONS AND EXPERIENCES USING THE APPLE IPAD AS AN INSTRUCTIONAL TOOL

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ABSTRACT

The number of iPads in classrooms throughout the country is growing at a staggering rate. Educators and school districts are implementing iPad initiatives to enhance instruction. The purpose of this study was to examine high school teachers’ experiences and perceptions after using the Apple iPad as an instructional tool in the classroom. An extensive review of related literature was conducted in an effort to supply a strong foundation for the conceptual framework, research design, data collection, and analysis of this future study. One-on-one in-depth qualitative research interviews were the main method of collecting data for this study, which led to the researchers’ understanding of their experience. Subjects for this study were made of three (3) teachers who have been using the iPad in their instruction.
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Definitions of Key Terminology Used in This Study

Adobe Flash (formerly Macromedia Flash) - A multimedia platform used to add animation, video, and interactivity to web pages. Flash is frequently used for advertisements and games. More recently, it has been positioned as a tool for "Rich Internet Applications" ("RIAs").

App – Abbreviation for the word application. An app is a program that can be downloaded and installed onto a tablet or personal device such as an iPad, iPhone or iPod. Apps for all Apple-based products may be purchased and downloaded by visiting the iTunes Store.

Curriculum - The collection of courses of study given in a school, college or university.

Cyberspace - The nebulous "place" where humans interact over computer networks (the Internet is considered Cyberspace).

Data - Information suitable for communication, interpretation or processing by a computer.

Digital Distraction - A type of disturbance or hindrance solely blamed on any aspect of technology, such as texting or e-mailing.
**Download** - The transfer of information from a remote computer system to the user’s system; opposite of *upload*.

**E-Reader** - A device or application to facilitate or enhance the reading of electronic material.

**ELMO** - A mounted camera attached to a digital projector that allows one to project documents and other objects onto the board for a class to see.

**FaceTime** - Apple’s video calling service. Requires Wi-Fi or 3G/4G.

**Flash Drive (Thumb Drive)** - A small electronic device containing flash memory that is used for storing data or transferring it to or from a computer, digital camera, etc.

**iBooks** - Apple’s eBook reader, available from the App Store. It handles the standard ePub format protected by FairPlay DRM, and PDF. Introduced in 2010 alongside the iPad.

**Instructional Tool** - Any document, material or item that is designed to serve as a major tool for assisting in the instruction of a subject or course.

**iTunes Store** - The iTunes Store is a software-based online digital media store operated by Apple. Opening as the iTunes Music Store on April 28, 2003, with over
200,000 items to purchase, it is, as of April 2008, the number one music vendor in the United States.

**Launch** – To start an application.

**Netbook** - a small laptop computer designed primarily for accessing Internet-based applications.

**OS** – Abbreviation for the term “Operating System”. The operating system is the software that supports a computer’s basic function, e.g. Windows XP

**PC** – Personal Computer

**Pedagogy** - The art or science of teaching, education; and the use of instructional methods.

**SMARTBoard** - An interactive whiteboard, designed to engage students and deliver unique presentations. Your finger, or the pens provided, will act as your mouse, allowing you to visit websites, scroll through PowerPoint slides, and much more.

**Spreadsheet** - A program designed to look like an electronic ledger.

**Upload** - To transfer information from a user’s system to a remote system: the opposite of download.
**URL (Uniform Resource Locator)** - A scheme used to locate a document accessible over the Internet.

**Wi-Fi** - A facility allowing computers, smartphones, or other devices to connect to the Internet or communicate with one another wirelessly within a particular area.
Chapter 1

**Statement of the Problem**

The Roslyn Public Schools is a high-achieving school district that has, for years, used technology to enhance the instructional process. The district has used desktops, laptops, netbooks, SMARTBoards and recently began an iPad initiative that introduced the tablet to all high school teachers and students. Each school has a fully-functioning computer lab that is used regularly by both staff and students. All schools in the district for that matter have always embraced technology and used it in all aspects of the ongoing instruction that takes place in Roslyn. Feedback on the equipment given to staff, which they utilized in their classes, has been informal and there has never been direct questioning of the teachers to see how their experiences with the use of technology in their classrooms have been. Since the iPad and tablet technology is relatively new, this researcher believes this is an opportune time to question the teachers as to their experiences using the iPad as an instructional tool.

There have been many initiatives involving the introduction of iPads into the classroom. It is time for the research agenda to explore the impact of these initiatives on the teaching and learning experience of all involved. One area of research was to explore the teacher experience in integrating iPads into their classroom instruction, in terms of adaptabilities, perceptions, and effectiveness. This study investigated high school teachers’ perceptions and experiences in using the iPad as an instructional tool.

K-12 educators were the specific audience that this study benefited from, although educators from all levels including higher education will be able to benefit from the findings provided in this study.
Significance of Research Problem

The essential goal of this study was to see the ways in which the iPad is perceived by the teachers as an instructional tool in their high school classrooms. The study investigated specifically how teachers perceive the iPad; is it a valuable tool in the classroom, and if so, how? In the event that the iPad is not perceived as a valuable instructional tool, the researcher looked to gain valuable data that demonstrated ways that the iPad could in fact help in the classroom.

This subject is extremely important as the popularity of the iPad and other tablet instruments continues to grow in our schools. According to Kaufman (2012), "there is at least one iPad pilot program in every state in the US – including pilots in elementary schools, middle schools, high schools, and universities as well as hospitals and medical schools" (para. 6). In addition to the iPad, there are several other tablets that may be just as effective. Microsoft recently unveiled the Surface, which they hope will be as successful if not more so than the iPad. There are several other tablets on the market that many institutions may be able to use in their instruction as well: Google’s Nexus 7, Samsung’s Galaxy Tablet, Amazon’s Kindle Fire, ASUS Transformer Pad Infinity, Barnes and Noble’s Nook, ASUS Eee Pad Transformer Prime and the Lenovo ThinkPad. All, like the iPad, are relatively new, thus justifying the research that still needs to be completed in the area of tablet technology. Additionally, this researcher hoped to gain valuable data that will in essence be the “voice of the teacher”. Gaining feedback from a teacher’s perspective, I believe, served many positive functions. The voice of the educator is essential, as it is the teacher who will incorporate the iPad into their curriculum; therefore, who better to comment on its effectiveness? Findings from this research study provided necessary data that will lead to improved professional development in the area of iPads in the classroom. Allowing teachers the chance to share
their perspectives gave them the “opportunities to share expertise as teacher leaders, specialists, and mentors” ("Principles for professional," 2008, p. 2). Administrators should take into account the insights that our teachers gained while using any new piece of equipment in the classroom. It is the teachers who implement these programs, and it is them to whom we should listen when they suggest ways to improve these programs. My study’s importance lies in the chance to share with other educators the valuable experiences that teachers have while using the iPad as an instructional tool. Furthermore, the researcher documented teachers’ experiences after using the iPad in their classrooms, which in the future will lead to more effective professional development in the field of iPad use as an instructional tool.

**Positionality Statement**

I was formerly employed as a central office administrator with the Roslyn Public Schools, where I served as the Assistant to the Superintendent for Administration and Human Resources. Prior to this, the I spent eleven years as a Music and Physical Education teacher, three years as a High School Associate Principal and one year as a Middle School Principal. I also have a passion for technology, specifically in a classroom setting. I feel I brought practical experience in the field of technology, along with professional knowledge of education. When I arrived at my current position, the district had just begun the implementation process of an iPad initiative at the High School level. In the 2011/12 school year, the goal of the initiative was to distribute iPads to all ninth-grade students and teachers. In the following year, iPads were distributed to all ninth and eleventh grade students and eleventh grade teachers. Finally, in the 2013/14 school year, ninth graders were given iPads, as were all remaining teachers. As I am a central office administrator, this has the potential to bias my judgment regarding the interpretations of the data in this study. Accordingly, I
was committed to incorporating components such as peer review, member checking, self-reflection and ample reflexivity.

This qualitative study has examined high school teachers’ experiences and perceptions after using the iPad in the classroom in an effort to better grasp just how effective or ineffective the iPad is as an instructional tool. This in turn will allow teachers to better understand the instructional uses of the iPad and hopefully help other educators that are looking to establish the iPad as an educational device in their classrooms.

**Research Central and Sub-Questions**

The central questions to this proposed research are:

1. *What is the experience of teachers using the iPad in the classroom?*
   
   a. *In what ways do the teachers talk about how they use the iPad in the classroom?*
   
   b. *In what ways do teachers talk about the relationship of the iPad to their teaching?*

For this study, the researcher sought to investigate teachers’ experiences with the iPad during one particular moment in time. In doing so, the researcher hoped to gain the full experience of the teachers using the iPad in their classroom.

**Theoretical Framework**

Today’s workforce is vastly different from that of a generation ago. Technology is an ever-changing part of an educator’s world, and as a result, teachers must constantly learn
about new technologies and how they may be most effectively implemented and utilized in the classroom. Educators must comprehend the relationship between integrating specific technology within a subject area and a clear understanding of how technology, pedagogy, and content are key factors in that implementation process.

Many researchers and authors believe that there are numerous benefits that come as a result of taking ample time with integrating technology into learning tasks. The TPACK framework can help educators conceptualize the type of overlap of the specific areas of knowledge that are utilized when using this framework. While doing research, two essential ideas or messages seemed to come forward: one was the idea that technology, content and pedagogy interact simultaneously; the second is that the choices that educators made in these domains upon designing learning tasks affect the quality of learning.

The TPACK theory is a relatively new concept and consists of the three main components: Content, Pedagogy, and Technology. This theory specifically looks into how all three of these areas work together to increase student motivation and to make the specific content more accessible to students. The first area of importance is the content, or more specifically the “what” or the subject matter that the educator is trying to teach, e.g. Math, Music History, etc. The second component that makes up TPACK is the “how”, or the pedagogy. Educators see this as the tools they use to get their specific point across; examples include direct instruction, inquiry, debate or group discussion. The most important question an educator needs to ask themselves for this component is, how are we going to make the specific content more accessible by the way we present it to our students? The final piece in the TPACK model is technology. Selecting the appropriate technology used to facilitate and enhance the means by which the content is disseminated to students is arguably the most important part of the TPACK theory. Here, the instructor had to decide what tool needed to
be utilized in order to make the content more accessible, while supporting the pedagogical strategies previously discussed which will help deliver the content to students. Throughout this inquiry, the researcher was able to begin to focus on the overlapping sections of the TPACK theory, which helped to view the theory as a whole. For example, the first overlap that becomes clear is the one between pedagogy and technology. This overlap between technology and pedagogy, or TPK knowledge, helps us understand how we make the content more accessible to our students. The overlap between technology and content, or TCK knowledge, affords the instructor the chance to pair the appropriate technology with the specific content. Finally, the overlap between pedagogy and content, or PCK knowledge, gives the instructor the ability to pair the appropriate pedagogical strategies with the selected content. TPACK is developed from the overlapping section where all three areas meet in the center of the diagram above. Researchers are reminded that surrounding the TPACK circle is the context, the instructor, and the students. The context may look different when observing various classrooms; this is because one of the main focuses of TPACK is the idea of meeting students’ needs. Since all students are not the same, observing a variety of instructional settings is essential.

This study seeks to investigate teachers’ perceptions of the iPad in their classrooms. TPACK is a theoretical framework that is utilized in understanding and describing the various types of knowledge needed by a teacher for effective pedagogical practice in a learning environment that is technologically enhanced. The TPACK framework maintains that for there to be effective technology integration within a specific content or subject area, clear understanding of the relationships among the following three modules is essential: technology, pedagogy, and content. Maneuvering within these modules gives an educator
the expert qualities which are valuable to their teaching. According to the works of Koehler & Mishra (2009), there are seven components that are integrated into TPACK:

**Content Knowledge (CK)** is the understanding about the specific subject matter that is to be taught or learned. This knowledge may include knowledge of concepts, theories, ideas, organizational frameworks, knowledge of evidence and proof, as well as established practices and approaches toward developing such knowledge.

**Pedagogical Knowledge (PK)** deals specifically with the detailed understanding that educators have with respect to teaching and learning. Included in this component are the ability to understand how students learn, the skills needed to manage a classroom, plan a lesson and effectively assess student learning.

**Technology Knowledge (TK)** is an understanding of the various ways of thinking about and working with technology and tools and resources. This includes an extensive understanding of information technology and the ability to apply it to every aspect of one’s life, both professional and personal. Also important is the ability to distinguish when technology can support or hinder attaining a certain goal. Having the ability to adapt to any sort of change in technology is an important component to this theoretical framework. Since the iPad and technology in the classroom is an ever-changing instrument, the application of this theoretical framework is critical when looking to study how teachers perceive the iPad.

**Pedagogical Content Knowledge (PCK)** consists of knowledge of teacher pedagogy that is pertinent to the teaching of specific curriculum content. One of the main ideas of PCK is the belief in the transformation within the subject matter when teaching. This happens as the instructor interprets the curriculum, discovers numerous ways to denote it and gears the instructional materials to their students’ prior knowledge. According to Koehler & Mishra, “PCK covers the core business of teaching, learning, curriculum, assessment and
reporting, such as the conditions that promote learning and the links among curriculum, assessment, and pedagogy” (2009, p. 64).

**Technological Content Knowledge (TCK)** is an understanding of how technology and content either impact or limit each other. Part of this component is the belief that teachers must master numerous areas within their curriculum and must have in-depth knowledge and be accessible to the different manners in which the subject can be altered by the infusion of technology. According to Koehler & Mishra, “Teachers need to understand which specific technologies are best suited for addressing subject-matter learning in their domains and how the content dictates or perhaps even changes the technology—or vice versa” (2009, p.65).

**Technological Pedagogical Knowledge (TPK)** is the concept that recognizes how effective instruction and learning can change when specific technologies are used in specific ways. According to Koehler & Mishra, “this includes knowing the pedagogical affordances and constraints of a range of technological tools as they relate to disciplinarily and developmentally appropriate pedagogical designs and strategies” (2009, p.66).

Fusing these components together gave way to Technological Pedagogical Content Knowledge (TPACK). TPACK combines meaningful and truly skilled teaching, and infuses technology into it. TPACK differs from all of the individual concepts listed above. According to Koehler & Mishra, “instead, TPACK is the basis of effective teaching with technology, requiring an understanding of the representation of concepts using technologies; pedagogical techniques that use technologies in constructive ways to teach content; knowledge of what makes concepts difficult or easy to learn and how technology can help redress some of the problems that students face; knowledge of students’ prior knowledge and theories of epistemology; and knowledge of how technologies can be used to build on
existing knowledge to develop new epistemologies or strengthen old ones” (2009, p.66). According to Mishra & Koehler, “the basis of our (TPACK) framework is the understanding that teaching is a highly complex activity that draws on many kinds of knowledge” (2006, p. 1020). The TPACK framework helps by giving educators the knowledge necessary to integrate technology effectively by highlighting important connections that exist among teaching areas that require technological knowledge, subject matter, and pedagogy. This concept is the main reason that this researcher inferred that the TPACK framework was an appropriate one for this research study.

This study was designed in a way that investigated teachers’ perceptions of the iPad and specifically what ways teachers spoke about how they utilized the device and about the relationship of the iPad to their teaching. Through this study, the researcher obtained valuable data that will provide insight into how the structured use of the iPad in the classroom is perceived by the teachers.
Chapter 2

Literature Review

The integration of new technology into a teacher’s pedagogical repertoire is an issue many schools are facing. The TPACK framework has been identified by many researches as an essential way of comprehending just how the technological integration in classrooms works. The basic structure of TPACK has only really emerged over the last 10-15 years. By taking the framework built on Shulman’s (1986, 1987) conception of pedagogical content knowledge (PCK) and explicitly integrating the component of technological knowledge, we get the TPACK framework.

The literature that exists regarding the iPad is somewhat limited, as this technology has only been in existence for three years. However, literature that explores the adaptability of teachers to new methods and technological additions to their curriculum will be an essential piece of this researcher’s literature review. One of the main purposes of this literature review was to examine the perceptions that teachers had with respect to the iPad as an instructional tool in the classroom. Specifically, this researcher sought to investigate whether or not teachers felt that the iPad is a valuable addition to their pedagogical repertoire and if so, how. To carry out this study, it was imperative to complete a full review of the literature that is currently available with respect to the iPad. As a result, the review was ongoing throughout the study in an effort to provide the most current and up-to-date data in the final paper. The areas of focus in this review were: (1) iPad Studies, (2) Perceptions of Effective Professional Development. A review of iPad studies provided much-needed information as to the manner in which the tablet is being utilized in the classroom. A review into professional development and how teachers recognize what effective professional development should look like assisted the researcher in understanding the
ways that effective professional development can alter teacher perception of new initiatives. In addition to these sections, the researcher has presented additional components that offer historical and contextual information for this particular study. These studies of the perceptions of the iPad and other forms of technology as instructional tools in the classroom have helped fill the gap in the current body of literature. Using data from these studies confirmed why research in the area of tablet technology is much needed.

The introductory section of this literature review includes a brief historical look into the early development of the tablet, going back to the earliest versions of the technology developed by Dr. Alan C. Kay.

*Introduction*

Many people believe that Steve Jobs and Apple were the first to produce the modern-day tablet; however, Dr. Alan C. Kay first designed something called a “Dynabook” which included many of the attributes of the iPads we know today. Dr. Kay is regarded by many as one of the founding fathers of the modern-day computer, particularly the iPad. According to Greelish (2013), “Every modern portable computer reflects elements of the Dynabook concept” (para. 3). However, Greelish (2013) states that, according to Kay, “some gadgets with superficial Dynabook-like qualities, such as the iPad, have not only failed to realize the Dynabook dream, but have in some senses betrayed it” (para. 4). Kay envisioned the Dynabook as “a personal computer for children of all ages” (“The dynabook of,” para.7). He was looking to design a computer that was thin, dynamic and which weighed no more than two pounds. His vision is startling, especially considering that according to numerous websites, the average weight of a laptop computer today is six pounds. Envisioning something
that would be so light shows that Kay was way ahead of his time. Kay based this idea on “the need for students to be able to access textbooks and course materials using a portable computer that students could take with them wherever they needed information” (Henke, 2001, p. 11). Kay continued to work on his idea until the development of an early prototype in 1972 called the “interim Dynabook”. Although Kay continued to work on his idea, the Dynabook was never built, as it was “too far ahead of technologies in the 1960s and 1970s” (“The dynabook of,” para. 9). It was not until twenty years after Kay created the concept that the first working prototype of the Dynabook was constructed. This prototype was one of the biggest inspirations in the development of the first desktop and portable computers; it also contributed heavily to the development of the Xerox Note Taker.

The Apple iPad is a series of tablet computers that were designed and introduced by Apple, on April 3, 2010. Since then, there have been five updated versions of the iPad, including the iPad Mini, which was released on November 12, 2012. Apple’s first version of a tablet computer was called the Newton MessagePad 100, which was introduced in 1993. It was designed to be a “digital assistant” and was the first in a series that was finally discontinued in 1995 with the MessagePad 2100. Apple seemed to have taken a back seat to the PC-based Windows platform until 2007, when the company introduced the iPhone. In addition to being a cellular phone, the iPhone contained a camera and featured Apple’s now familiar “multi-touch finger-sensitive touchscreen interface of Apple’s iOS mobile operating system” (June, 2010). Prior to the iPhone, there were very few cellular phones that offered touchscreen capability; one such device was the Palm Treo. Based on the same functions of the
iPhone, the Treo had a much smaller screen and required a stylus for the touch screen system to work properly. However, interest in the Palm cellular phone seemed to end once the iPhone was introduced.

**iPad Studies**

As iPad and tablet technology is relatively new, new pedagogies are essential. A preliminary review, entitled “Digital Course Materials: A Case Study of the Apple iPad in the Academic Environment” by Michael H. Bush and Andrea H. Cameron (2011), reveals that although a detailed study was conducted regarding the iPad, the study focused more on the iPad as a means to substitute "traditional printed course materials with electronic course materials presented via iAnnotate on an Apple iPad" (Bush & Cameron, 2011, p. 1).

The central focus of this study was “to explore what could be learned from pilot program participant perceptions regarding substituting traditional printed course materials with electronic course materials presented via iAnnotate on an Apple iPad” (Bush & Cameron, 2011, p. 1). The study sought to find an increased understanding and to facilitate the adaptation of the iPad or other e-reader devices into a higher education setting. Through qualitative research design, the study further looked “to explore how the use of a multimodal tablet device affects the academic environment” (Bush & Cameron, 2011, p. xvi). The samples used in this study were students and faculty members from three graduate-level courses at a local college. The final sample used was seven faculty members and 35 masters-level students. The authors of this study used the survey method to collect data and student feedback. The authors used five essential questions to gain a clearer understanding of the e-reader phenomenon in an academic setting: 1. How do students perceive reading course materials on an iPad using iAnnotate? 2. How do students perceive the use of the iPad as an
academic tool outside of assigned course readings? 3. Do students perceive that the multi-modal functions of the iPad increase personal use, thereby increasing their academic use of the device? 4. Do faculty perceive any effects within the course from the replacement of traditional printed course materials with digital course materials? 5. Do both faculty and students recommend and/or prefer digital course materials on a tablet device (Bush & Cameron, 2011, p. 6)?  

Bush & Cameron noted five key findings. With respect to reading course materials, students reported that using the iPad to read course materials did affect them in one way or another. 47% of the students studied felt that their reading patterns did not change, while 38% found that they read more often; 9% of those found the portability of the iPad to be the common answer. 15% of those studied found that they actually read less, citing that since they worked in a secure facility, they were not allowed to bring the iPad with them to work. Most of the students in the study perceived that iPad “as a useful academic tool, frequently using it to enhance personal study and classroom learning” (Bush & Cameron, 2011, p. 133). As a result of using the iPad, students found themselves printing fewer of their resources, and found the search feature helpful when looking for resources. Additionally, a clear majority of the “students perceived that they frequently used additional functions of the iPad for academic purposes either to enhance their personal study or their classroom learning” (Bush & Cameron, 2011, p. 85). A preponderance of the students examined in this study “found the iPad personally useful, carried it with them more often than print materials, and found themselves using it more academically due to its convenience and portability” (Bush & Cameron, 2011, p. 91). 53% of the students who replied to the survey stated that they read course materials a few times a week, and did so because of the iPad. The authors found that faculty subjects did not find any effect on their teaching. Some actually expressed concern that the iPad may have contributed to slightly poorer student
comprehension and found it to be a distraction in class. The final finding reported that the faculty and students both felt that using the iPad in class for the purpose of sharing digital course materials was strongly recommended. 78% of the students preferred digital materials to the traditional printed materials; 13% were indifferent, while 9% of students actually preferred the traditional printed materials. With regard to faculty, one professor liked the idea of having all student materials in one place. Additionally, “two professors pointed out the ability for real-time search in class that aided in augmenting class discussions” (Bush & Cameron, 2011, p. 98).

It would seem after reading this paper that the overall response of all of the participants in the study was positive. However, one of the interesting negatives mentioned by the instructors was that the iPad was a distraction in class. This concept is referred to as “digital distraction”. One of the more interesting ironies in our lives is that technology has saved us a lot of time, which we then spend on the use of more technology. As a result, “Americans’ attention spans have dropped to a demoralizing five minutes” ("25 tips to," 2012, para. 1). Currently, we are overloaded by e-mail, text messages and social networking sites, so much so that we find ourselves devoting a huge majority of our day to these forms of technology. Consequently, this technology can become a distraction that may interfere with our ability to concentrate in a classroom setting. Using the iPad as an instructional device must come with its share of issues with respect to digital distraction. Although much good can come out of a new tool, what price do these benefits exact? Learning more about how instructors deal with digital distraction during instructional time is just one piece of information that this researcher hopes to investigate during this process, and is a strong justification for this research study.
A second study, an action-based research paper entitled “The iPad as a mobile teaching device: utilizing multimedia database access in a classroom context” by Ostashevski, N., Reid, D. & Ostashevski, M. (2009), investigated how a multimedia database can be utilized as both a teaching and learning technology in the classroom. One of the primary purposes of this paper was to investigate the uses of the iPad for mobile multimedia components. This paper reported on research that was conducted in several Ukrainian dance classes in rural western Canada. The method of instruction used for this style of dance had been the “teacher model,” where the teacher demonstrates a certain dance step or movement which is then followed by a “drill-and-practice” instructional approach (Reighluth, Keller, 2009). As in most educational institutions, technology-enhanced teaching strategies have, especially over the last several years, become part of the backbone of education. For example, iPods were used in these dance classes as a means to manage, access and store music for instruction and performances via iTunes. The uses of the iPod led the authors to investigate further the impact on educational practices that the iPod video device may have. Initially, this device was used as a means of storing video recordings of student dance practices and other choreographed components of their lessons. The introduction of the second-generation iPad gave the instructors another means of enhancing their multimedia repertoire; however, it still posed challenges in terms of finding appropriate pedagogical ways of incorporating it into their lessons. Traditionally, video as a media source had been primarily used for presentation purposes of dance recitals and performances. This challenged the value they had in the classroom, as it was used as a presentation device and not a teaching resource. According to this study, the development and implementation of the iPad led to two possible solutions. The first was to create an instructionally-focused video in an effort to introduce a new type of pedagogical support
device; the second was developing “Ukrainian dance instructional video segments produced for the purpose of supporting instructors” (Ostashewski, Reid, & Ostashewski, 2009, p. 50). Results of this study found that the iPad “presented new types of technology-enhanced teaching strategies that have been successfully integrated into a dance classroom context” (Ostashewski, Reid, & Ostashewski, 2009, p. 52). Additional results found that the iPad helped provide different methods by which digital media might help to change the manner in which educators develop, allocate and take in digital content. The authors further state that as a result of the new role that the iPad played in this study, it is “likely expandable to other physical education or psychomotor learning contexts where physical skill development is being sought” (Ostashewski, Reid, & Ostashewski, 2009, p. 52).

This study presented the manner in which the iPad and iPod have been used and infused into specific sections of lessons that dealt with dance, specifically using the devices as a learning tool for improving gross motor coordination in an effort to learn and improve specific routines and steps. This study highlighted the creative ways that these devices can enhance a particular activity. This study helped to guide this researcher’s interest in the iPad by looking to explore the teachers’ perceptions and experiences using the device in the classroom as an instructional tool. In the same manner that those teachers used the iPad to enhance their students dance steps, this researcher will investigate how other educators use the iPad in the classroom and, most importantly, if teachers feel that the iPad is an effective classroom tool.

A third study investigated was a dissertation by Dr. Brandie Kay Benton at Henderson State University entitled “The iPad as an Instructional Tool: An Examination of Teacher Implementation Experiences”. This study looked to “examine the implementation of the iPad as an instructional tool through the experiences of classroom teachers” (Benton, 2012, p.
abstract). The study consisted of eight classroom teachers whose main criterion for involvement was that they were actively incorporating iPads into their classes during a year-long pilot in their district. This study looked to answer the following questions: “How is the iPad being used as an instructional tool? How are curricular and disciplinary connections made? What pedagogical shifts, if any, are occurring? What types of student interactions are taking place?” (Benton, 2012, p. 5). Findings suggested that teachers received inadequate professional development on how to effectively implement the iPad into their instruction. Consequently, teachers were left to fend for themselves, or to seek out colleagues and students for help. Benton felt that without proper training and professional development, instruction would be impacted, thus affecting the teachers’ perception of the iPad as an instruction tool. In her findings, Benton stated that she believed that the study was significant for the following reasons: “The study serves to increase educator understanding of how teachers approach technology integration and specifically iPad integration, it is assumed that a better understanding of teacher perceptions regarding the processes and outcomes related to such initiatives and their own pedagogical behaviors was achieved, in effect, the study has the potential to inform instructional practice related to technology integration in the academic curricula, which could benefit educators in general” (Benton, 2012, p. 115).

A final study of iPad usage reviewed was a thesis entitled “Introducing the iPad in a Norwegian High School, How Do Students and Teachers React to This Technology” by Henrik Valstad, (2011). The main purpose of this thesis was to “evaluate how suitable the iPad is in a classroom, what are the advantages and disadvantages of using it and if it can produce increased motivation towards learning among students” (Valstad, 2011, p. abstract). For this study, Valstad chose to make available one iPad each to fifteen students
and five teachers, for a total of twenty devices. For this qualitative study, the methods used to collect data were observations, focus group meetings and direct interviews. With respect to teachers’ experiences with the iPad, Valstad noted several findings through direct interviews. His first question dealt with using the iPad as an e-reader, which teachers found to be an extremely positive experience. Much praise was given to the iPad for its functionality and the ability for students to carry it virtually anywhere, especially in classes such as History where the textbooks can be very large. Teachers no longer heard excuses like, “I forgot my textbook at home” while using the iPad. A second interview question dealt with specific apps that participants bought and used throughout the study. Two apps seemed to be brought up during every interview: MindNode and Instapaper. One teacher described MindNode as an app that made it simpler for students to organize and work with their notes. Instapaper allows you to save web pages to read later. Teachers and students both used Dropbox as a way of sharing information, allowing the teacher to give instant feedback on assignments that students turned in. One of the main questions asked during the interview process was with regard to whether or not teachers felt as if the integration of the iPad was an “enhancement to the academic experience” (Valstad, 2011, p. 82)? According to the author, most teachers interviewed had difficulty in answering this question. One of the main reasons that teachers found it difficult had to do with the length of time they had been using the iPad. Many requested more time with the device before being asked to give an adequate response, and would have preferred to have an entire school year with the iPad rather than a mere semester. According to Valstad (2011), “in general the teachers were very cautious to identify the iPad as legitimate academic enhancement, and requested more time to explore apps and advantages.” (p. 83) In keeping with the idea of the iPad as an enhancement to the academic experience of students, the next question Valstad posed dealt
with changes in the engagement, motivation or creativity of students as a result of using the iPad in the classroom. Teachers reported that students needed time to get to know the iPad as an instructional tool. Prior to the study, students did not see the iPad as an enhancement; however, as the semester progressed, many students began to see what a positive impact the iPad could have on their education. Some teachers did report seeing more engagement in class as a result of implementing the iPad. According to teachers, MindNode made students very creative and helped them study. According to Valstad (2011), “teachers did seem to believe the students had displayed increased motivation and engagement in class, although only at a certain level” (p. 83). Overall, teachers found it difficult to pinpoint if and how the iPad increased engagement in class. According to Valstad, this had to do with the limited amount of time that the students had with the device; as a result, it is perfectly understandable why it is difficult to explain exactly how the iPad has affected students’ motivation in class.

The next questions posed by Valstad dealt with the effectiveness of certain apps and if they, along with the portability of the iPad, could in any way increase student motivation and stimulate creativity. One teacher shared that it was a benefit to have “everything in one place” and “ability to annotate directly inside the book or take notes in the margin, then I think this can be really great”. Another teacher said, “using Dropbox, they could share their mind maps with the rest of the class and thus share their knowledge in particular courses” (Valstad 2011, p. 84). With respect to MindNode, a teacher stated, “they did get very creative (MindNode). I believe it has helped them. And that it is very easy to carry around” Another teacher agreed that the iPad can be a very motivating educational tool, although they would have to become better at using it themselves. Overall, teachers gave a very positive affirmation with respect to increased motivation. Although some expressed concerns that a
few features seemed to be lacking, they were sure that these could ultimately be addressed in a short time.

The next question dealt with the need for more training, and whether or not the training provided was sufficient. One teacher mentioned that as a result of this experience, it was evident that more sophisticated training was required, stating, “we paved the way as we walked it”. According to Valstad (2011), any problems that came up “were handled by request and at the spur-of-the-moment type” (p. 85). Another teacher suggested that some sort of an introductory course spread out over a few days would have been more valuable to the staff. According to Valstad (2011), “one teacher felt she fell slightly behind the rest of the group in the matter of skills, and this hindered her from keeping up the pace with the rest” (p. 85). The next question asked the teachers if there were any problems that they encountered throughout the time they spent with the iPad. One teacher expressed her frustration with the amount of material on the web that is blocked, and how that hinders process. Another teacher expressed her frustration that she still had to bring her laptop into class to project things (this study clearly took place before items such as Apple TV were introduced). Another teacher expressed her frustration with being able to upload files from her iPad to her LMS (learning management system). This was a problem that Apple experienced in the first versions, because those iPads were not compatible with Adobe Flash. Since then, there have been several OS updates that have addressed this issue. The final question had to do with whether or not the number of paper handouts changed during the project. Two teachers responded yes, stating that they began to use e-mails instead. These were teachers that in the past would have used a copy machine to make handouts. According to Valstad (2011), “The rest responded the amount of paper had not changed. The reason for this was because most of the information was distributed through the LMS instead” (p. 87).
The overall feeling of this study is that the iPad can be a useful educational tool. According to Valstad (2011) “although further research and development of apps for use in learning is essential to further growth of multimedia and digital learning, we can already see that this form of learning has a lot of advantages compared to the traditional way of learning, and we can foresee that this form of learning will develop at an even greater pace in the years to come” (p. 120).

Experiences & Perceptions of Professional Development & Ongoing Learning

It is essential that this literature review contain key information from past studies that investigated teacher’s perceptions and experiences with good professional development. This is done to examine how and what teachers believe effective professional development should look like. I have always affirmed that teachers are the most important group in the educational process, and as such can help formulate what effective professional development should look like. A study of this particular area was entitled, “What Makes Professional Development Effective? Results From a National Sample of Teachers”. The authors of this study are Michael S. Garet, Andrew C. Porter, Laura Desimone, Beatrice F. Birman and Kwang Suk Yoon. This study collected its data “as part of the national evaluation of the Eisenhower Professional Development Program, a federal program which supports professional development for teachers, mainly in mathematics and science” (Garet, Porter, Desimone, Birman & Suk Yoon, 2001, p. 918). This study was designed to enable the authors to look at the relationship between aspects of professional development that have been recognized in the literature, and changes in teachers’ knowledge, skills and classroom teaching practices as reported by classroom teachers. According to Garet et al. (2001), they “integrated and operationalized the ideas in the literature on "best practices" in professional development to create a set of scales describing the characteristics of activities assisted by
the Eisenhower program, then empirically tested these characteristics to examine their
effects on teacher outcomes” (p. 918). Sources for this study included data from a Teacher
Activity Survey conducted as part of the national evaluation of the Eisenhower Professional
Development Program. This program is Title II of the Elementary and Secondary Education
Act (ESEA), which is the federal government’s most important investment in centering its
focus on increasing the knowledge and skills of K-12 classroom teachers. In 1999, the federal
government appropriated about $335 million to provide funding through state education
agencies (SEAs) to school districts. According to Garet et al. (2001), “these funds primarily
support professional development in Mathematics and Science” (p. 919). At the time, the
Eisenhower program was a major source of aid for all sorts of professional development, though it did not provide an exact methodology for professional development. The program
supported numerous activities, including workshops and conferences, study groups,
professional networks and collaborative programs, task force work, and peer coaching. In
addition to the funding provided by the Eisenhower program, programs may also have
received aid from states, school districts, and other federal sources. Teacher participants
were taken from a national representative sample that attended activities made available by
the Eisenhower program from July 1 through December 31, 1997. The method for data
collection included a survey drawn from a national probability sample of school districts
receiving funds from the Eisenhower program. Districts were sampled in proportion to the
number of teachers in the district. For every school district that was sampled, the authors
collected a comprehensive list of all professional development activities conducted with
Eisenhower funds over the survey period. A sample was then drawn of two professional
development activities from each district with probability proportional to the number of
teachers attending the activity. 1,027 responses were received from 358 school districts,
producing a response rate of 72%. The survey asked teacher participants to deliver as much comprehensive information about the specific Eisenhower-assisted professional development activity or activities that they attended; responses were self-reports of teacher experiences and behavior. Analysis for the characteristics of high-quality professional development for this study focused on the following key structural features: the form of the activity, duration of the activity, and collective participation. The form of the activity dealt specifically with “whether it is a reform type, such as a study group or network, in contrast to a traditional workshop or conference” (Garet et al., 2001, p. 919). The duration of the activity encompassed “the total number of contact hours that participants spend in the activity, as well as the span of time over which the activity takes place” (Garet et al., 2001, p. 919-920). Finally, collective participants [had to do with] “the collective participation of groups of teachers from the same school, department, or grade level, as opposed to the participation of individual teachers from many schools” (Garet et al., 2001, p. 920). In addition, three core features were measured: focusing on content, promoting active learning, and coherence. Focusing on content deals with what teachers actually learn during the time spent on professional development. According to Garet et al. (2001), “little research has been conducted on the relative efficacy of professional development activities that focus on different types of knowledge, skills, and teaching practices” (p. 923). Promoting active learning has to do with the opportunities that are afforded by the specific professional development activity for the participants (teachers) to actively engage in meaningful discussion, planning and practice related to the activity. Lastly, fostering coherence has to do with the degree to which activities in professional development are perceived by the teachers as being relevant and important to what they do in the classroom. In my experience as a teacher, I have sat through many professional development sessions where I asked
myself, “Why am I here? This has nothing to do with what I do in my classroom.” A disconnect between professional development and what teachers feel is important to their classes has existed for quite a while. Also, examined in this study was the extent to which the specific professional development focused on refining and further developing content knowledge of teachers in Math and Science. This was specifically focused on the degree to which the professional development offered opportunity for teachers to be actively engaged in the learning process, the extent to which the specific professional development promoted consistency in teacher professional development by integrating “teachers’ goals aligned with state standards and assessments, and by encouraging continuing professional communication among teachers” (Garet et al., 2001, p. 920). The teacher outcomes were self-reported increases in knowledge and skills in several different areas, such as the use of technology, instructional methodology, and changes in classroom practice.

Results from this study noted several key findings. The authors found that “sustained and intensive professional development is more likely to have an impact, as reported by teachers, than is shorter professional development” (Garet et al., 2001, p. 935). Results also indicated that professional development should be content-focused and give teachers the opportunity to be active learners during the sessions. Professional development should also be integrated into the daily activities of the school, allowing for coherence, as this “is more likely to produce enhanced knowledge and skills (Garet et al., 2001, p. 935). Additional results supported the notion of the importance of collective participation and the coherence of any professional development activities. According to Garet et al. (2001), “activities that are linked to teachers’ other experiences, aligned with other reform efforts, and encouraging of professional communication among teachers appear to support change in teaching practice, even after the effects of enhanced knowledge and skills are taken into account” (p.
Prior to this, we knew of the importance of connecting these pieces, but there was no direct support from the literature. A further result indicated that if educators are serious about using professional development as a tool to improve instruction, more time needs to be invested into activities that have characteristics that past research has shown support improvement in teaching. According to Garet et al. (2001), “a major challenge to providing this type of high-quality professional development is cost” (p. 937). We are currently in one of the most trying financial times in memory, and nowhere is this more apparent than in education. As districts are looking to cut staff and programs, where does strong, effective professional development fit in? Results from this study are clear; for schools to provide effective professional development that has a positive and significant outcome on teacher learning and strengthens classroom practice, monies should be allocated and focused “on providing high-quality professional development experiences” (Garet et al., 2001, p. 937).

**Conclusion**

The three sections of this literature review were TPACK Theoretical Framework, iPad Studies, and Perceptions of Effective Professional Development. iPad studies were obviously reviewed, since they have a direct bearing on the tool that will be evaluated in this study. Throughout this literature review, the researcher looked at studies that examined how teachers used the iPad in their classes. The simple fact that this type of technology is in its early stages and research is limited brings a high level of justification for continued research into the area of tablet technology in the classroom. Closely tied to the limited research into tablet technology in the classroom is the need to study effective professional development with respect to the use and implementation of the device. To effectively use the device in the classroom, teachers must be properly trained in its functions. Investigating what teachers feel they need to learn about the device gives them a much needed “voice.”. Using what has
been researched with respect to effective professional development and incorporating that with what research subjects in this study feel is needed will strengthen the literature in the field of not only iPads, but also that of what constitutes effective professional development. These findings also strengthen this researcher’s quest to obtain data regarding the perceptions of teachers with respect to the amount and modes of professional development they perceive as being effective. Finally, examining the TPACK theoretical framework allowed the investigator to examine the relationship between integrating specific technology within a subject area and a clear understanding of how technology, pedagogy, and content are key factors of that implementation process.

All of these studies in the literature review have one common theme: teachers’ perceptions. This makes them valuable to this researcher’s study. It is of value to the researcher to gain as much information as possible into the perception and experiences of teachers using not only iPads, but all forms of technology, since this valuable data can be useful in developing questions for this specific study and help to either support, enhance or question other data from past studies. It is the hope of this researcher that the results of this study will supply others with the tools necessary to provide and implement effective professional development in the use of iPads in the classroom and how to make them an effective tool to help improve teacher instruction and student performance. This study should serve as the “voice of the teacher” with respect to gaining the most valuable information about using the iPad in a classroom setting and how to take that “voice” to have others develop professional development based on the input of those educators in the study.

The detailed review of these bodies of literature revealed that the single largest missing piece is the lack of literature concerning iPad technology in the classroom. This is due to the relative novelty of the device. Using prior research on the perceptions of teachers
with respect to laptop and netbook computers, studies that examine the perceptions of technology integration and the perceptions of effective professional development, will provide this researcher with a strong foundation for an examination into the teachers’ experiences and perceptions of the iPad as an instructional tool. Additionally, since iPad technology in the classroom is relatively new, so is the availability of effective professional development with respect to the same.

It is the goal of this researcher to provide teachers and administrators with results that will lead to the development of effective, relevant and useful professional development in the area of iPad technology in the classroom. The result of the experiences of teachers in this study will lead to teachers being able to grow through professional development by adding a valuable tool like the iPad to their instruction.
Chapter 3
Methodology

The central questions that have been answered throughout this research study are; what is the experience of teachers using the iPad in the classroom? In what ways do the teachers talk about how they use the iPad in the classroom? In what ways do teachers talk about the relationship of the iPad to their teaching? To answer these questions this researcher utilized the Qualitative Research Interview methodology.

Research Design

The design for this research study was set up in a manner that allowed the researcher to capture a specific moment in time with regard to teachers and their experiences and perceptions of the iPad in the classroom. This researcher used a qualitative interview design to allow teachers to speak about that specific moment in time. The qualitative research interview sought to describe and define the meanings of central themes in the lives of the subjects. The main task in interviewing is to understand the meaning of what the interviewees say.

Research Tradition

This study employed the principles of a qualitative research study to interview participants and gain information on their experiences. This method also served to enable effective communication and interaction with individual group members. The researcher acquired valuable data regarding teachers' experiences with the iPad in an instructional setting. According to Creswell (2007), a researcher should look "to develop a composite description of the essence of the experience" (p. 58). Using this methodology allows the researcher to not only develop a description of the experience, but to gain insight into the experiences of the subjects for that moment in time. The use of qualitative research provided
the opportunity to use an open-ended and inductive style of questioning. Open-ended questions are a typical feature in qualitative research that allows for follow-up questions that further investigate a participant’s responses. Qualitative research also allows for the prospect of exploration. By being able to explore further during an interview session with open-ended questions, a researcher may find new information that becomes an important part of their study. Open-ended questions have an inviting quality that inspires honest and authentic responses. These types of questions also show a respect for and interest in your subjects, which in turn encourages them to share their ideas, feelings and concerns more openly with you. This researcher feels that one of the most important characteristics in qualitative research is the space that it provides for subjects to share their personal experiences during an interview session.

According to Maxwell, “One of the most important issues in designing a qualitative study is how much you should attempt to prestructure your methods” (2005, p. 233). Prestructuring a qualitative study has some advantages; it can help guarantee the comparability of data across researchers and sources which is beneficial when trying to answer variance questions or questions that work with the differences between certain things and the reason for those specific differences. An unstructured approach gives the researcher the ability to hone in on the particular phenomena studied. This allows for internal validity and contextual understanding, which are of particular use in comprehending the process that leads to specific outcomes. According to Maxwell, “prestructuring reduces the amount of data that you have to deal with, functioning as a form of preanalysis that simplifies the analytic work required” (2005, p. 233).
Participants

This study researched findings from three (3) high school teachers in the Roslyn School District. Qualifications for this study were high school teachers who have been given an iPad to use in their classes. The selection criterion was simply based on whether a teacher uses an iPad in his or her class. Teachers were asked to participate in this study. Prior to the selection of a teacher, the researcher also met with the building principal and the district’s Chief Technology Officer to get assistance in selecting an appropriate pool of candidates. All subjects who participated in the study will receive a thank you letter and a copy of the final dissertation.

Purposeful sampling was the criterion used for this study. There are several key important uses for purposeful sampling. Purposeful sampling, according to Maxwell, “can be used to achieve representativeness or typicality of the settings, individuals, or activities selected (2005, p.235). A purposeful sample provides a researcher with much more confidence in his or her results in that those results represent the typical members of the population as opposed to a random sample. A second key component to purposeful sampling is the ability to accurately capture “the heterogeneity in the population” (Maxwell, 2005, p.235). The ultimate goal in purposeful sampling is to ensure that the results and conclusions from a research study represent a wide range of differences as opposed to a typical member of the sample. A final key component of purposeful sampling is the ability that it has to help establish differences between research subjects or settings, which is a common theme in multi-case qualitative studies.

Recruitment & Access

The study produced qualitative data gathered through direct teacher interviews. Interview schedules were utilized, and the researcher asked all the participants the same
questions. Interviews were recorded, and those audio recordings were later transcribed. The format of the interviews included an introduction designed to build rapport. During the introduction, the topic of the study was introduced and an approximate timeline for the interview session was explained. The body of the interview incorporated open-ended questions designed to determine each teacher's perceptions of the iPad as an instructional tool in their classrooms. At the conclusion of the interview participants were thanked for their participation. In order to ensure verification and reliability, an identical interview format was used with each participant. Because of the open-ended nature of these questions, the second round of interview questions were the same, but may allow for follow-up probing questions that may have gone in different directions. Furthermore, all interviews took place in the same neutral setting. While conducting the interviews, the researcher remained mindful of any biases and conscious of not reacting to statements made by participants in a manner that suggested agreement or disagreement, which could influence subsequent responses.

This study was conducted using a series of open-ended teacher interviews, in an effort to explore the experience of teachers using the iPad in their classrooms at Roslyn High School. The study was a qualitative research study that intentionally selected participants who could provide useful and pertinent information based on their personal experiences with the iPad. This researcher captured a specific moment in time with respect to the experiences the teacher shared using the iPad in class. Three high school teachers were used for this study all from the Roslyn Public Schools. This was to generate feedback from teachers and gain valuable information into the experience of the participants. Interviews for this study took place in the fall/winter of the 2015/2016 school year. Throughout these sessions, the researcher pursued honest and open answers to questions based on teacher
experiences with the iPad. However, what was extremely important was that the results be thick and rich to avoid any misrepresentation of data and results.

Written approval from the Superintendent of the Roslyn Public Schools, building leaders and the district’s Chief Technology Officer was the first step in this process. In addition, the researcher obtained written consent from all teacher-participants. Interactions between the teacher-participants and the researcher resulted in a schedule for each interview that was convenient for the teacher and researcher. Once the dates were finalized and scheduled, this information was then shared with the participants. For this study, the researcher ensured that the research questions were adequately addressed. To accomplish this, the researcher set up three teacher-participant interviews that had a one-to-two-hour duration. There were two separate rounds of interviews, which allowed the researcher ample opportunity to review responses that may not have been clear during the first interview. This was done to be able to go back and address any questions that may have been unclear during the first round of interviews, and to allow the participants to share any further thoughts on their responses. Throughout these interviews, the researcher recorded each one, and wrote informal jottings while the interview was being conducted. The researcher then transcribed all of the data gathered during the interview and coded it.

A possible concern for this study could be the association that I had with the school district. As the subjects for this study were teachers from my prior district, there is the possibility that teachers may not answer questions openly and honestly, but rather based on how they feel I would want them to answer. To address this, the researcher conducted the interviews in a non-school setting to ease some of that anxiety. Teachers were assured that I was and will not be speaking to them in an advisory capacity. Furthermore, teachers were assured that their responses to this study were 100% confidential and would not in any way
impact any of their personal work assessments or evaluations with respect to their teaching positions. Teachers were informed that my interest is solely based on wanting to hear their voices and perspectives with respect to the iPad’s strengths and weaknesses as they perceive it. However, one of the main ways that this researcher addressed this use was to establish a partnership with the teachers and to explain to them that what is needed from district office is their “voice,” and that their input and feedback would not be ignored.

**Data Collection**

Each subject participated in a one hour-long interview in a private and quiet setting of their choosing. Records of all interviews were collected by the researcher in the form of interview notes, digital recordings and informal observational jottings. Each recording was saved and stored in a digital folder with the subject’s name and the date the session took place. In addition, all notes and observational jottings were scanned as a searchable PDF and stored in the same digital folder as the recordings. This allowed the researcher the ability to access information on each subject with ease and accuracy.

**Data Storage**

A digital recorder was used, which enabled each interview to be downloaded and stored as a .wav file, allowing for easier organization on a computer. Additionally, all notes taken during each interview were scanned and stored. In addition to local storage on my personal laptop, all recordings were backed up to an external hard drive, Dropbox and a flash drive. Backing the data up using four different methods allowed for very few ways in which the data could be lost or destroyed. The researcher was the only person with access to any interview data; as a result, all data has remained confidential. Upon completion of the study, all data collected will be destroyed and deleted off all backup storage systems.
**Data Analysis**

Once all interviews were completed, this researcher read through the notes and listened to sessions in order to identify key themes and important issues in each text or recording. For this study, using constant comparative analysis was an effective method of developing relationships between various pieces of data. For example, speaking with two different people who had similar experiences with the iPad was an effective method to generate knowledge about patterns and themes. To effectively analyze data collected throughout this study, specific predefined codes were developed based on prior knowledge of iPads in the classroom. The initial coding was intentionally broad, and as the analysis transpired, the coding will shift, as guided by the thick descriptions. By using coding to analyze data, we gain an understanding of how the subjects perceive the iPad as an instructional tool. After a certain set of data was coded, summaries were written with respect to what had been learned and to specific key themes that were pertinent and obvious within each question. The researcher transcribed all data and completed a comprehensive data analysis of all responses.

Cohen and Crabtree assert that thick descriptions are "a way of achieving a type of external validity" (as cited in Lincoln & Guba, 1985). Cohen and Crabtree also refer to thick descriptions as to a "detailed account of field experiences in which the researcher makes explicit the patterns of cultural and social relationships and puts them in context" (as cited in Holloway, 1997). This researcher applied thick descriptions in presenting all results related to his study. To come up with precise results, the researcher employed several components to be sure that the results are credible and reliable. Data from this study was reduced as a result of coding in an effort to establish common themes. Graphic displays of data were used to give the reader a much clearer visual picture. Finally, there was a complete
verification and finalization of all conclusions to ascertain that all results were as accurate as possible. These steps are taken to ensure that all of the research that the researcher complied was trustworthy, credible, and dependable. By safeguarding all data against flaws or errors, the researcher was forced to “reflect on his or her own practice in collecting and organizing the data, extracting and synthesizing themes and patterns, and then reporting the truths that emerge as a result of the collected data” (Benton, 2012, p. 62). As a result, this researcher worked extremely hard to assure the readers that all of his data and results are accurate and reliable.

**Trustworthiness**

Trustworthiness in any research study is an important component. A research definition of trustworthiness might be the ability to demonstrate that data from a particular study is comprehensive. According to Krefting (1991), “there are four criteria used to ensure valid interpretation of data: truth-value, applicability, consistency, and neutrality” (p. 215). In a qualitative research study, one of the ways that truth-value can be accurately measured is by the researcher having an appropriate amount of engagement in the research setting as to allow for the ability to identify and verify recurring patterns in the data. Applicability can be measured by the ability of using data and findings from any research study and applying it to the reader’s own situation. It is extremely important that data collection methods be consistent and reliable. There is an assumption in research methodology that under the same conditions, research methods will yield similar results, even when gathered at different locations and time. Data should always be as consistent as possible to retrieve the most accurate results. Neutrality is an important component of this researcher’s study. Noting the researcher’s biases so that future readers can make note of them and filter them out on their own is this researcher’s aim.
Another method that this researcher utilized as a form of validation with respect to findings was a “member check”. At the conclusion of the study and after all data is collected from the teacher interviews, a report of the researcher’s interpretations will be shared with research subjects as a way of checking the authenticity of the work. During the interview process, participant's responses were constantly restated and summarized in an attempt to provide the research subject with the opportunity to correct or embellish answers that were given. In addition to member checks, this researcher also petitioned assistance from a fellow researcher to have my research peer reviewed. Helping to validate all results helps all involved in the research process. For the author, it provides respectability to his or her work; for the reader, it provides another sense of validation, as this study now will have two sets of eyes reviewing all data and findings.

The relationships that the researcher built with his research subjects were essential to the study. This researcher established a partnership with the teachers and stressed that their “voice” is needed in the district office with respect to the iPad. Teachers were asked to share any meaningful learning opportunities that the iPad offered. The decision to establish a relationship and more importantly decide which type of a relationship you are looking for is considered a design decision. These decisions may not be under the complete control of the researcher and can in no way be predicted or precisely defined, but according to Maxwell, “they are still matters that require systematic planning and reflection if your design is to be as coherent as possible” (2005, p. 234). Establishing a partnership with teachers is this researcher’s main goal.
Chapter 4

Findings

Introduction

The purpose of this study was to analyze teacher’s perceptions and experiences using the Apple iPad in their classrooms. It was believed that the data produced in this study would provide the reader with new, insightful information geared towards the use of the iPad as an instructional tool. This chapter presents key findings derived from three in-depth teacher interviews. This study originally intended to use 6 teachers; however, it was extremely difficult to locate teachers because the study took place during the summer months.

This study was conducted using three teachers from a School District located in Nassau County Long Island. The district’s total approximate enrollment is 3,200 students. The student demographic makeup at this school district is primarily Caucasian students with a small amount of African-American, Asian, Latino and other ethnic groups; the largest minority group is Asian. This district is known as a district of academic excellence, as evidenced with last year’s graduating class having 100% acceptance and attendance into college.

This school district began its iPad initiative by introducing iPads to a small pilot of 12th grade students in Participation in Government (P.I.G) classes in the fall of 2010. In the following year iPads were introduced to all 9th grade students, in addition to all teachers of 9th grade classes. In the fall of 2012 all 9th grade and 11th grade students were also given iPads, as were their corresponding teachers. Finally, in the fall of 2013, the 9th grade class was given iPads, which now meant that every high school student and teacher was equipped
with an iPad. During the fall of 2010 those teachers who were given iPads as a result of being in the pilot program were those who taught P.I.G courses.

Three teachers participated in the interview process representing the following subject areas; Math, English, Social Studies, Science, English as a Second Language, Art, Music, Physical Education, World Languages. Teachers for this study are all full-time employees of the Roslyn Union Free School District. All the teacher participants in this study were given a second-generation iPad to use for professional and personal use. Teachers were interviewed in a neutral setting outside of school hours. The researcher used prepared interview questions (see Appendix C); however, he was able to gauge the interview and ask follow-up questions to further probe teacher responses. The interviews were all recorded on a digital recorder and transcribed at a later time; in addition, the researcher took informal jottings as the interview took place.

Instrumentation

For this research study the researcher used face-to-face interviews with participants as a method for qualitative research. According to Kvale 1996, "the qualitative research interview seeks to describe the meanings of central themes in the life world of the participants. The main task in interviewing is to understand the meaning of what the interviewees say.” The researcher attempted to get a complete story behind each participant’s experience as they used the iPad in their classes. According to McNamara (1999), “interviews are particularly useful for getting the story behind a participant’s experiences. The interviewer can pursue in-depth information around the topic. Interviews may be useful as follow-up to certain respondents to questionnaires, e.g., to further investigate their responses.” As such, the researcher used standardized open-ended
interviews. Doing so exposed each subject to the same open-ended questions, which then facilitated crisper interviews that were more easily analyzed and compared.

Sample
The researcher conducted a search for research participants by using social media venues such as Facebook & LinkedIn. In addition, the researcher conducted an email blast to local schools asking for volunteers for this study. Response to the search was slim and only a small number of participants replied. The research sample consisted of 3 teachers who were employed by a school system in Nassau County Long Island. Lenny is a male high school English Language Arts teacher and has been teaching for 11 years. Maureen is a female high school Social Studies teacher and has been teaching for 20 years. Jack is also a male English Language Arts teacher who teaches one middle school class in addition to high school courses in English Language Arts. Jack has been teaching for 28 years.

Data Analysis
Data analysis involves discovering patterns categories and themes in the data. This study was designed to collect data describing teachers’ perceptions and experiences using the iPad as an instructional device in their classrooms. This study was not designed to test any hypothesis or designed to develop any theories. In this chapter, findings from several secondary teachers will be presented. At the beginning stages of data analysis all data collected during the study was carefully read and reviewed several times.

Participant Employment
Lenny is a male High School English Language Arts (ELA) teacher and has been employed by his current district for eleven (11) years and teaching for a total of eleven years. He teaches a full course load of ninth through twelfth graders. Maureen is a female High School Social Studies teacher who has been employed by her current district for fifteen (15) years
and has been teaching for a total of twenty (20) years. Jack is a male High School ELA teacher and has been employed by his district for sixteen (16) years and has been teaching for a total of twenty-eight (28) years. It should be noted that Jack is also the Chairperson for the English Department in his district as well.

All three teachers who participated in this research study teach at the Roslyn Public Schools. The Roslyn School District consists of three primary schools; The Heights School, The East Hills School and the Harbor Hill School, in addition to Roslyn Middle School and Roslyn High School. The Heights School serves children from pre-kindergarten through the first grade. Class size is approximately 15 in pre-kindergarten and 20-22 in kindergarten and first grade. Each classroom is staffed by a teacher and a full-time teacher’s aide. The school’s core values include establishing in children a sense of academic and social competence, offering experiential learning opportunities in meaningful contexts, and including parents as integral partners in their children’s education. The East Hills School is an elementary school that educates more than 500 students in the second through fifth grades in a warm, welcoming, and enriching atmosphere. Its multicultural population is representative of more than twenty different nations. Its philosophy, and that of the Roslyn Public Schools in general, is to provide, through education, an opportunity for, and an inspiration to, each child to continue a lifelong quest for truth and knowledge. The Harbor Hill School is an elementary school that educates nearly 600 students in the first through fifth grades. The youngsters are offered myriad opportunities for involvement: before-school vocal and instrumental music, after-school art and intramural sports, and various other activities. Instruction is delivered in a continuum of hands on, interdisciplinary lessons involving all staff members. Thematic units are presented throughout the school; a literature-based reading program is employed in the primary grades and a novel-based approach is implemented in the fourth and fifth.
Process writing experiences are linked with the reading of literature to create a comprehensive Language Arts program for all students. Computer instruction, as with science, is accomplished in both the classroom and in building laboratories. Special areas of study, such as library/media, physical education, speech, and art, are also deeply integrated into the classroom program. Roslyn Middle School educates the district’s 6th, 7th and 8th graders. Its facilities include a large library, six laboratories, four computer labs, an auditorium, music suite, art studios and a new gymnasium. As the school prepares its students for high school and beyond, their focus is in promoting lifelong learning through social, emotional and intellectual development. Roslyn High School has ranked within the top 200 High Schools in the United States according to Newsweek Magazine. This puts it in the 99th percentile nationally. Matriculation is around 1,100 students with a student/teacher ratio of 12.3. 38 seniors were accepted to Ivy League Universities including Harvard, Brown, Princeton, Yale, and Cornell. Roslyn High School offers a competitive and enriching educational experience designed to prepare students for college and beyond.

**How Did It Go Your First Year?**

All participants in this research study began using the iPad in their classrooms in the fall of 2010. The superintendent of the district made the iPad available to any teachers that wished to try and use the device in their classrooms. The superintendent’s idea was to fully implement the iPads into the high school by the fall of 2011, but wanted to have teacher input throughout the 2010-2011 school year. The research participants were asked at the end of the 2009-2010 school if they would be interested in taking the iPad home with them over the summer to begin to familiarize themselves with the device. Research participant Lenny shared “we started in 2010, a pilot program with one class and then the following year we rolled it out to the entire 9th grade.” The iPad has just really begun to be used as a personal
device, and using it in the classroom was something that had not categorically been attempted. When all three research subjects were approached by the superintendent and asked if they were interested in using the device, all three agreed and promptly began familiarizing themselves with the device during the summer of 2010. Each participant did not know what the future would bring with respect to the iPad and the amount of training or professional development that they would receive, so all three began to do their own research during the summer to have a strong grasp and have some idea what they would be doing with the device once school started in the fall of 2010. Research subject Maureen shared, “the superintendent was offering iPads to all teachers and whether I wanted to pick up an iPad and play with it for the summer as a way of a way of uh just learning it to see if it would make sense to me to incorporate the iPad into the classroom for the fall, so I went and I picked one up.” Research subject Lenny stated the following: “the superintendent basically you know called me in and said we have an idea, I’d already done a lot of tech work in the district so uh said hey we are kind of looking for someone who is tech savvy and asked me if would be interested.” Each research subject had different ideas as to which direction they would take and how they would use the device. They didn’t know if they would be using it for research, as a word processing tool or to simply use the device for its internet capabilities.” All the participants report having enough time to establish a comfort with the iPad because of having the device for many months prior to officially distributing them to students. Jack shared what he remembered about those first steps prior to implementing the iPad “what I loved about that process Carlos, is that is that we didn’t actually give out the iPads until December, in other words we didn’t just want to throw it at people and say here it is, we talked about it, we thought about it, we looked at the things we could do with it and then I believe it was December of 2010 I was part of you know the first group that used the
iPad.” All of the participants shared a concern about just what the instructional implications of the using the device would be. Additionally, since the teachers initially trained themselves over the summer and received no formal professional training, there was a sense of apprehension and concern over the learning curve of this brand-new territory. Jack shared, “I think there were two primarily the first concern was you know it’s something really new that we really didn’t understand the capabilities of and number 2 and perhaps most importantly we didn’t know what the distraction Factor would be in the classroom I’d say that was by far our biggest worry

**Experiencing the Unexpected Benefits of the iPad**

*Professional Development*

As teachers shared their experiences, four main timelines began to evolve. In analyzing the data, it was clear that all teachers received no professional development or training other than using the device over the summer initially. Teachers did share that there was some forethought and planning in that the iPads were not simply handed out on the first day of school; rather, several months of planning and collegial circles came first before students received their iPads in December of 2010. There was a sense that teachers did not want to fail as other local districts had because of poor planning or foresight. Jack shared, “we had heard stories, not to name names, of a school that got a bunch of iPads gave them to the teachers in September and said here go you have iPads now, and the kids do too so there was no PD there was never exploration of you know why this was necessary and what this would do.” However, teachers did share that they gained a lot from the collegial circles and planning time that they took part in during their teacher meetings and common prep periods throughout the school day. In addition, there were opportunities to meet with central administration and discuss what the plan would be and what steps would be taken prior to
the students receiving the devices. Some of the teachers in this study were a bit more tech savvy than others, which allowed them to already have a basis for what the iPad could do. However, that knowledge was more from a personal standpoint, and not necessarily how it would work in a classroom. All the teachers had experience in how a PC works in the classroom. All shared that they had experiences using a computer in traditional ways, e.g. word processing, research, and internet browsing. However, none of them had experience in what the iPad could do for them and their classes in ways other than those. Furthermore, none of the teachers had ever taken any formal training for the iPad either as a student or an instructor.

*Paperless Environment*

There were some interesting enhancements that teachers discussed that very much added to their classrooms and added to the quality of their pedagogy. One of the ways that it helped teachers was by creating a paperless environment. Traditionally, educators spend a great deal of time and energy making paper copies of materials for the classes. Many of us can remember spending full prep and lunch periods making copies for our kids. Teachers in this study shared that the iPad allowed them to virtually never need to make copies again. The iPad has the ability, through email and the functionality of apps such as iAnnotate, to enable teachers to share work electronically and not have to make any paper copies. In addition to teachers sharing and receiving work from students, teachers now have the ability to correct, analyze and provide students with feedback, all without having to print or copy any documents. In turn, students can ask clarifying questions based on teacher feedback and are able to send that back to their teachers instantly. This also allows for more instructional time, as opposed to handing out assignments or collecting homework during lessons. Teachers now can send work prior to class, immediately after class or even during evenings.
and weekends. This allows the teachers to free up instructional time and gives students and opportunity to prepare for the upcoming lessons, as they now have materials needed for the lesson in advance. Creating a paperless environment has also assisted teachers in ways that traditional instruction without technology simply can’t do. Sharing with students updated copies of a lesson or lesson materials would have forced the teacher to stop what they were doing in order to hand out updates; to do that, they would have had to make photocopies themselves or send a student to the photocopy machine. With the iPad, this now becomes an instant procedure that requires the teacher very little to no time at all to complete. But more importantly, the teacher does not have to stop their lesson, and students are not missing out on valuable instructional time. Lenny shared the following with respect to this very topic: “if I want them to have an updated copy of something, as we are in class I could send that to them and you know back in the day I would have to stop and you know say I have to go make the photocopies or another things is that for example at 9 o’clock at night I could send them a link to say something like okay guys we’re going to be using this app in class tomorrow and they’ll get it and that’s the beauty of a one-to-one program where they get to take the iPads home.”

Role of the Teacher

Teachers also shared that it has allowed them to expand out of their subject areas and examine other ways in which they not only deliver instruction, but also what materials they deliver to students. For example, Lenny shared how he now has become more of a humanities teacher as opposed to being simply an ELA teacher. The iPad give him the power to do this much more quickly and effectively than someone who does not use a device like this. Lenny shared this when talking about how the iPad has enhanced his classrooms, “it’s really allowed me to become more of a humanities teacher and go beyond just my subject
area, so for example when I’m teaching a poem for example I recently taught Ovid’s Metamorphoses and at the same time I could send them a link to an image of a Bernini sculpture of Apollo and Daphne and I could send them a link to an essay or an iTunes U lecture, so it allows me too kind of, I’m no longer in charge of the information I don’t have to give them the handouts I kind of just say hey guys there’s all this information out there let’s kind of go explore so it’s kind of giving them that ability to go explore and to me I see it as it’s redefining my role as a teacher.”

*Immediacy Factor*

Teachers also shared their beliefs on how the iPad has an immediacy factor that contributes to their classroom practices in a very positive way. This paperless environment has led to much faster and more efficient ways in which the teachers deliver lesson materials to students. All teachers shared how the iPad helped them become more organized with all work, student and classroom related materials. Maureen was very clear in sharing that the iPad was a “space saver” for her. She reported that once she started to use the iPad regularly, it allowed her to rather than carry around all her class and student work she was now carrying around an iPad with five classes’ worth of student work, DBQ's and other materials. The immediacy of communication was also shared during the interviews with participants. All of the participants shared how the communication with not only students but with parents as well was immediate and effective. When asked about the benefits of using the iPad, Lenny shared the following: “oh the immediacy of communication with my students, if I want them to have an updated copy of something as we are in class I could send it to them and you know back in the day I would have to stop and you know have to go make photocopies in our days, at 9 o’clock at night I could send them a link to say something like okay guys we’re going to be using this app in class tomorrow and they’ll get it and that’s the
beauty of a one-to-one program where they get to take the iPads home with them, the other cool thing is in the past couple of years I've started to use iTunes University on the iPad as a way to deliver contents to my students and I found the greatest benefit of that is I have the parents on their own iOS devices join the class through iTunes University and the parents are now part of the class they see every assignment they know when every test is coming up they can see every lesson that we do and it really completes that triangle of you know of parent teacher student, it brings the parent into the classroom which has really been the greatest benefit of the iPad.” There were also teachers who shared about the level collaborations in real-time and with students that iPad brought to their classes. Jack shared the following with respect to a key benefit to using the iPad in his classroom: “it allows collaboration in real time through Google Docs and things like that just in terms of logistics I haven’t made a photocopy in 5 years I have a document and make a PDF of it I sent it to my students by their mailboxes.” Teachers shared that they are now using Google Docs as a way of sharing and reviewing class and student work. As Jack previously stated, it allows for high levels of student collaboration in real time. For example, teachers can now share a homework assignment on Google Docs where students can go on and answer questions and the teacher gets instant notification every time a student logs on and updates their assignment. Likewise, students get notifications when a teacher has visited their work. Students can now go on to Google Docs and review the teacher’s feedback and makes the necessary adjustments to their work.

**iPad as an Assessment Tool**

One of the most significant areas that was discussed by all participants was the how the iPad became a very powerful student assessment tool, and the abundant ways that it can
be used for that purpose. Through the endless number of apps that became available to teachers and students, unlimited ways of being able to assess students revealed themselves to teachers. We are all familiar with the traditional forms of formative and summative assessments; these include state assessments, district benchmark or interim assessments, end-of-unit or chapter tests, end-of-term or semester exams and scores that are used for accountability for schools that measure Annual Yearly Progress (AYP) and students (report card grades). Project based learning has been traditionally used as a “fun” activity where students create a project usually after completing some form of unit exam or final essay. In the current day and age of education, teachers are looking for multiple ways to assess their students in addition to the traditional forms of assessment. The participants of this study discussed several ways that the iPad did this. During the first year, the teachers and students used a first-generation iPad which did not have a camera. However once teachers were given the 2nd generation iPad in year two, it really allowed for student assessment to become significant. Lenny stated, “as the year went on we began to realize as we got to use some new apps we begin to kind of just go beyond using it for just papers what if we use this for ways that students could kind of film themselves when they first put the cameras into the iPad, it kind of opened up all these new ways for us to assess students aside from just emailing papers, mark it up and emailing it back which was kind of our original vision.” The teachers in this study shared that they are believers in project based learning. Lenny stated “I'm a very big believer in challenge-based learning and project-based learning that we can assess our students through a variety of other methods especially in ELA we tend to in ELA we tend to rely on essays or test as means for assessing our students to understand literature and I've always believed that we should always try and go beyond that and use whatever means they want to use as a tool for expressing their understanding of literature and when I look at the
iPad it’s really given them almost an infinite number of ways for them to show me that they get it.” Teachers believed in discovering other ways for students to show their understanding of the subject matter and the iPad became that tool as it has the capabilities to do this in numerous ways. Jack shared how using the iPad as a tool for assessment made drastic strides with each year that went by: “first year I didn’t use anything for movie making besides iMovie but um someone showed me Vine you know, which makes those little six-second loop videos and so we had the students make these little vocabulary videos that’s how we teach vocabulary so we had the students come up with two line dialogue that uses the vocabulary word and demonstrates what it means and that’s how we did vocabulary and that was great, because you know what is underpinning all of this Carlos, is the fact that these kids are not readers and that’s not a good thing or a bad thing it’s just the thing, and if they are going to get their information from screens why not meet them halfway, also listen no one, at least in my department has given up on giving essays, research papers, exams but we found that with literature assignments, having to make, like using Touchcast to make a newscast of an event and putting it in your own words using Tellagami to create your own little on the scene videos all these apps and have become available you know that’s the big change is coming to accept the fact that there are other ways besides the traditional ones that students can demonstrate their understanding of the material.” Jack also shared the depth of knowledge that goes into creating a film project as opposed to creating an essay or other form of traditional assessment. In response to being asked if the iPad opened up the amount of student creativity in his classes, Jack stated “For some students yes because there are always students who if you gave them an essay or a written assignment would write it beautifully and they’d be able to express themselves, but it’s for those kids who are in the middle to the lower end, who struggle with traditional assessment you know all of a sudden
and think about it Carlos so here’s a typical assignment, we’ve read Romeo and Juliet now you have to make a movie trailer, right, a two-minute trailer for an imaginary film version of the play right, think about all the choices that are involved, you have to choose lines you have to choose scenes you have to choose music and think then about the level of understanding involved in doing that well and so I think what I’ve seen in 5 years is a movement from seeing um those student creative projects as just like fun activities to add on at the end to a much more central and integral part of the actual teaching and grading process.”

Value in Project-Based Learning

One of the teachers who participated in this study, which relates to thirty three percent of the participants, mentioned the term “project based learning” on more than one occasion. None of the participants ever thought going into this experience that the iPad would ever be used as a tool for project based learning. Lenny shared the following prior to beginning the use of the iPad “I didn’t think about that it’s really a tool for project-based learning and challenge-based learning.” It was a pleasant surprise for Lenny and a major finding for this study. In addition, Lenny has been able to collaborate with not only the other participants in this study, but many other colleagues the value of the iPad as it relates to Project-based learning.
New Discoveries During Year Two

The Abundance of Apps

Many of the discoveries that teachers shared during year two had to do with the newly developed and discovered apps that they could use and include in their classroom. As teachers used the iPad more and more, and felt comfortable in its functionality, they also discovered new apps and ideas from colleagues and students. Participant Maureen shared the following regarding her experiences during year two: “we started teaming up with other teachers such as ELA and humanities classes, so we started exploring all these different apps and the kids started exploring all these different apps, so low and behold in year two we were using iMovie we started using all these other apps that were so much easier to manage so in year two, you know, it was just phenomenal, kids were doing their senior thesis on the iPad, they were doing ads and videos using iMovie, then we had Apple TV so we could link up of all the iPads in the class, so I want to say it was probably a hundred more apps in year two that we didn't know about or were new from year one and I want to say that fifty percent (50%) of those apps came from the kids because they started tooling around with the iPad and they would come in and show us so this encouraged me to continue tooling around with it.” Maureen also shared less fear and apprehension during year two: “I was no longer afraid of or anything.” Jack also reported the difference in apps that were available as well, “I think the second year was better, just in terms of the apps that became available and in terms of the apps that we found out were out there.” Lenny shared that there was more of a focus on his and other teachers to use the iPad less as a tool for emailing and more as a tool that allows teachers to share unlimited amounts of information to students during lessons and units.
Enhancements to Your Classes

The teachers described how the iPad has enhanced their instruction, and shared large amounts of valuable data which detailed specific examples of the use of the iPad in the classroom. Each finding is described in detail in the section that follows, and I will include quotes from the participants (as deemed necessary) from the semi-structured interviews that took place. The researcher attempted to gain a full picture of the subjects’ experiences to present to the reader a better understanding of the research topic studied. There was an emphasis on allowing the research participants an opportunity to share in their own words their experiences using the iPad. Teachers shared many valuable ways that having a device such as the iPad in their classes enhanced their instruction and the materials that were delivered to their students. Lenny shared a lesson that he presented with respect to a piece of literature. Lenny disclosed the following, “I remember the time that we were studying we were reading the book Beloved by Toni Morrison rather than have them write a paper on I gave them a research project where they had to research another genocide throughout history and then create a documentary using iMovie on that genocide, so there was a writing component there was a video component but rather than just say I read Beloved by Toni Morrison and let’s write a paper about it, it kind of became well let’s see if we can relate this to another event in history and then use something other than an essay to show me that you can do that and the device allowed them to do all of that in spot in one device where they could do their research they could do their writing they can produce the video and then share that video with me and that’s kind of the same time that we realize that it really would be a tool for not just delivering information but for assessing our students and really new and exciting ways.” Jack conveyed his thoughts on how the iPad has enhanced his instruction and specifically how the iPad has allowed him to concentrate more on student created
projects and less on him giving students the questions to show their comprehension of the materials. Jack stated, “I think it’s helped me in terms of my marking because I use the Turnitin app which gives me tremendous flexibility in terms of grading traditional things it's allowed me to you know go further into using student creative project particularly video to allow them to demonstrate understanding and it has expanded my toolkit and terms of ways that I could approach the text with them.” Evidence points to the iPad being a tool that has opened infinite possibilities for teachers to assess student learning, and for students to be able to create non-traditional ways of showing their teachers that they understand the material. Several of the participants in this research study shared that at first, they perceived the iPad as being a tool for traditional technology uses, e.g. web browsing and word processing. However, all participants strongly agreed that for them, the iPad has become a very strong addition to their student assessment arsenal and, most importantly, a tool that students who don’t thrive in a traditional assessment environment can use to become creative scholars who can show their understanding of the material. In addition to assessment, Maureen revealed some web-based activities that she has begun to incorporate into her classroom. Many of the classes have begun the process in communicating in real-time with other classes throughout the world, most notably in China. Maureen conveyed, “It's limitless what I can do, I mean I can't even tell you, we have pen pals now outside of this country we can go anywhere we want live stream we have Google Docs now we have Google folders now and I'm pretty paperless in school.”

**A Review of the Emerging Commonalities**

Four (4) major emerging commonalities were established for this study. While analyzing data, four commonalities emerged, the specific questions are referenced below in
parenthesis following the finding. The emerging commonalities discovered during this study were:

1. All participants (3 out of 3, 100%) shared that the iPad has now become another tool by which they assess student learning in their classes.
2. All participants (3 out of 3, 100%) indicated that because of using the iPad, their classroom now became a “paperless environment.” No longer were photocopies necessary, and students did not need to hand in any sort of physical work any longer.
3. All participants (3 out of 3, 100%) indicated that they received no formal professional development or training on the implementation of their devices either in or outside of their subject area during the first year. All participants stated that they used collegial circles as a form of sharing best practices and learning about any new apps that others were using.
4. All participants (3 out of 3, 100%) shared that the immediacy factor of using the iPad was something that very much enhanced their classrooms.

Commonality one: All participants (3 out of 3, 100%) shared that the iPad has now become another tool by which they assess student learning in their classes.

All the participants in this study reported using numerous new ways of assessing student learning in addition to the traditional assessment methods such as unit tests. Lenny stated, “I am a very big believer in challenge based learning and project based learning in that we can assess our students through a variety of other methods, in ELA (English Language Arts) we tend to rely on things like essays and tests as means for assessing of our students to understand literature I’ve always believed that we should go beyond that and use whatever means they want to use as a tool for expressing their understanding and I look
at the iPad as it really giving them an infinite number of ways for them to show me that they get it.” Teachers reported using apps such as iMovie, Vine and Vimeo in order to allow students to create filmmaking projects that reflect an understanding of the materials presented in class. Jack reported, “we use student created film projects and now all of a sudden with everything from iMovie to all the way down to Vine and those six second videos we found that all of a sudden student film making became tremendously easy um and you know we figured out ways that students could demonstrate their understanding of the text via creating films.” Teachers also shared that using the iPad has helped with those students who may have struggled in the past using typical teacher-developed classroom assessments. Lenny stated, “there are always students who if you gave them an essay or a written assignment they would write it beautifully and they'd be able to express themselves, but it’s for those kids who are in the middle to lower end who struggle with traditional assessment you know all of a sudden shine.” Jack went on to say “what I have seen in 5 years is a movement from seeing um those student created projects as fun activities to add on at the end to a much more central and integral part of the actual teaching and grading process.”

Commonality 2: All participants (3 out of 3, 100%) indicated that as a result of using the iPad, their classroom now became a paperless environment.

All the research participants questioned have shared how the iPad has become a space and time saver in their classrooms. Using the iPad in conjunction with iAnnotate helped them not only cut down on paper copies, but it also allowed them to file and store student work in a much more organized fashion. Maureen shared, “it was a space saver because you can now get students to send you over their papers, not as an email but as an actual paper by using this app iAnnotate, I wasn't carrying around papers I was carrying around this iPad with like five classes worth of papers, DBQ’s (document based questions)
stuff like that and then at some point even the copying became you know obsolete because I would just scan something into my iPad and then I would just send it out as a PDF email.” Lenny shared “our first year I was doing a lot of what you would call substitution instead of photocopying something I was emailing it to students they would email work back to me basically substituting paper copies of electronic copies.” Jack stated “just in terms of logistics I haven’t made a photocopy in five years I have a document I make a PDF of it I send it to my students via their mailboxes.” Participants also imparted the ability to create file folders for each class and associate their students to each folder. Thus, when they received an email with student work, the email would go directly into the class folder for that particular student. Teachers maintained that this also allowed for more immediate feedback, as students did not have to wait for the next class to get their assignments back. Teachers could annotate students’ work using iAnnotate and send it back to them right away. Likewise, students had the ability to make corrections and resubmit their work much more quickly than in the past. Lenny stated, “meeting deadlines became much easier for students as they knew that I would get their work immediately, I became a paperless educator.” Maureen shared, “we have google docs now google folders now so I mean I’m pretty paperless at school now you know I have a grade book a hard copy gradebook as a backup because we have to turn that in at the end of the year.”

**Commonality three:** All the participants questioned, (3 out of 3, 100%) indicated that they received no formal professional development for using the iPad in their classrooms.

Prior to using the iPad in their classrooms, all the research participants in this study shared their concern, as it was a relatively new tool that had not really been used as an instructional tool. They declared that this would be “brand new territory” and were not sure
what direction they were heading in. Teachers shared that they worried if using the iPad was simply just another fad and as a result wondered if this initiative would really work. Lenny stated, “I guess we were kind of just determining at the time you know it was brand new territory and how would we use this you know are we using it for the sake of it’s this new piece of technology or how were we really gonna use this as a tool for delivering content to our students and for assessing them and I think at first it was this kind of you know anytime you try something new in the classroom how is this going to work you know is it just the latest tech fad or are we really are we on to something here.” Maureen stated, “because I am not a digital native and I didn’t grow up in this the idea was it was pretty intimidating to me I felt as if every time I put something on there it would disappear and then it was touch screen so that was also pretty new, so all those things were you know pretty scary because I thought that I would be doing things and they would disappear into thin air and then the touch screen made it worse because there was not tangible type of keyboard so you know I would hit buttons that I inadvertently hit and the screen would go blank, mostly it was the um, not what I could do with it but mostly it was just the mechanics of using it and I think the touch screen thing was also pretty new so it was just the technical part of the iPad that seemed to be intimidating.” All the research participants questioned for this study indicated that they received no formal training in the form of professional development with respect to the implementation of the iPad into their classrooms. The was a significant finding as 100% of the participants questioned expressed that they did not receive formal professional development but rather relied on the collegial circles during common prep times during the school days when all teachers in their subject areas could discuss the iPad as a group. Based on reports from all research participants, school administration approached them and asked them if they would be interested in piloting the iPad in their
classrooms. They were all given the iPad to take home during the summer break and familiarize themselves with the device. Comments from participants included those by Lenny, who stated, “in 2010 the superintendent called me into his office and asked me if I would be interested in piloting this iPad initiative, but there was nothing discussed about the training or professional development that I would be receiving. However, I was very tech savvy and I think that is why I was asked in the first place.” Research participant Maureen shared, “that summer before the chair from my department called and asked me if I wanted to pick up an iPad as a way of learning it to see whether or not it would make sense to me to incorporate the iPad in the classroom. So basically, it was take this home and learn all about it over the summer.” All participants stated that the only real form of professional development that they took part in were collegial circles during the school day. Participants reported that during these sessions, teachers were able to share best practices regarding the iPad and also which apps worked or didn’t work. It was during these meetings that teachers spoke about iAnnotate. This is an app that both the teachers and the students used and continue to use to this day. iAnnotate is a PDF (portable document format viewed or edited by using Adobe Acrobat) application that allows the user to annotate PDF’s or Word Documents. With this app, you have the ability to share files with others and access your online documents using services such as Dropbox or Google Drive. 2 out of 3 teachers said that to continue to use the iPad and really gain its full potential, professional development is something that they must take part in. Since newer versions of the iPad and apps continue to flood the market, training is something that needs to take place on a regular basis.
<table>
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*Table 1: Professional Development Reportedly Provided to Participants*

Commonality four: All participants (3 out of 3, 100%) shared that the immediacy factor of using the iPad was something that very much enhanced their lessons.

All participants shared that they liked the immediacy of this technology. All shared that they enjoyed being able to share information with their students at any given time other than the classroom. Teachers can send students information in preparation for lessons so that they can be prepared and have already done some research into the topic that they will be discussing for the upcoming lesson or unit. Maureen stated, “mass communication I could blast out emails now cause I would create a folder with a class list so I could blast out emails and blast anything out with just you know a tap of a button so everyone was always put on notice nobody could ever say oh you didn’t tell me or I didn’t get any notice.” All participants shared that students receiving immediate class notifications by sharing and dispersing class materials via emails blasts made things a lot more effective in the classroom. Maureen also shared, “it’s limitless what I can do I can even tell you, we can do pen pals now outside of this country, we have google docs now all my grades are livestream they are put online as soon as they are entered.” Teachers also shared the ease by which they could associate a student email address with a class folder. Teachers did this so that student emails and assignments would automatically be dropped into a class folder.
According to Lenny, “by doing this, I would not have to go looking for student emails, they would just be waiting there for me in the class folder.” Teachers could also ask students to visit a particular site during class and students would have instant access. Additionally, teachers shared the ease by which students could share what they found on their iPads instantly in class by projecting it to a white board via Apple TV, pasting items into an email and sending it to others in the class.

**Chapter Summary**

The preceding chapter presented 4 major commonalities revealed in this research study. All the findings were organized in a way that reflect the research questions used in the study. Data collected from teacher interviews revealed the research subjects’ perceptions and experience using the Apple iPad in their classrooms. As is such in a qualitative research study, direct quotations were used throughout the chapter in order for the researcher to try and depict an accurate version of the phenomenon experienced by the teacher.

The primary finding is how the iPad was utilized as an additional tool by which teachers assess student learning in their classes. Participants shared that the iPad is being used as a method of conducting research and now with the availability of film creating apps such as iMovie, Vimeo and Vine, teachers are allowing students to create short films as a way of sharing their understanding of the subject matter. Teachers acknowledged that the iPad can help the student who may have struggled with traditional types of assessment, such as writing a term paper, and now can use something like iMovie to create a film project that can show as much understanding of the subject matter as writing a term paper would. The iPad can be a valuable assessment tool for the visual and hands-on learners as opposed to those who do well with traditional classwork. Teachers are also able to track the sites that students
visit as a way of trying to figure out their thought process when doing research for a particular topic.

The second finding in this study was that all participants (3 out of 3, 100%) indicated that as a result of using the iPad, their classroom now became a paperless environment. All the participants overwhelmingly reported now working in a paperless classroom environment, with one subject stating that it has been close to five years since he has made a photocopy of any classroom materials. All classroom materials, including class syllabi, homework assignments, class assignments, parent notifications, and class projects, are now solely being distributed through the iPad electronically.

The third finding was that all the participants (3 out of 3, 100%) cited using collegial circles as their primary source of gaining knowledge into best practices using the iPad. Support they received from the colleagues was mostly in the form of what new apps they have encountered and how they were using those apps in the classrooms. All the participants were given an iPad to use for the summer prior to the implementation of a pilot class in the following fall. They were asked to take it home and “familiarize” themselves with the technology.

The fourth finding is that all participants (3 out of 3, 100%) shared that the immediacy factor of using the iPad was something that very much enhanced their lessons. Using the iPad, teachers were able to return student work with a click of a button and give instant feedback in real time, which allows for a faster method of teachers assessing student learning. Teachers can send daily, weekly, and monthly notifications to students, and update any assignments immediately without needing to wait until the next time the class meets. Students can ask questions pertaining to a prior class or homework assignment and not only receive a quick response from the teacher, but a classmate as well. Students who are absent
from class have an opportunity to not only make up the work, but may also take part in a lesson in real-time as the class is meeting during the day. All teachers shared that no longer can students say they did not receive class or homework. They shared that it created a paper trail that allowed the teacher to track when students submitted work.

The chapter presented the four findings that were discovered because of this study and were presented and organized to reflect the research questions that were presented in the previous sections.

**Conclusion**

This researcher believes that this study was significant for the following reasons. The study served to increase educator understanding into how the iPad could be used in classrooms. It helped to bring to light the experiences of educators as they used the iPad and how they used the device to assist them in the day to day operations in their classrooms. This study is also significant as it enhanced the classroom of all participants in three major ways and allowed for growth for teachers and students. This study has the potential to inform further instructional practice as it relates to the iPad and gives other researchers an opportunity to further explore the device as newer versions and apps become available. This researcher also hopes this study will increase the understanding of the various ways that the iPad can be utilized in the classroom and will guide school districts and other teachers as to the ways that is can be used in the classroom.
Chapter 5
Interpretations, Implications, and Recommendations

Introduction
The study looked to examine the perceptions and experiences of teachers using the iPad in the classrooms. It was the hope of the researcher to be able to gain new knowledge and insight into how using an iPad in the classroom is perceived by educators and how it informs best practices with this specific device.

Study Overview
This research collected qualitative data during in-depth one-to-one personal interviews with participants. The participants in the study included 3 secondary teachers who currently use an iPad, all of whom implemented the iPad in their classrooms as a part of an initiative in their district. The data were coded, organized and analyzed several times. Throughout this process, several themes emerged that were previously presented in this thesis. This study was based on a set of research questions developed by the researcher to guide the research towards the study's conceptual framework. Although the study used thirteen questions, the study centered around questions six through thirteen.

One of the most prevalent findings revealed that research participants believed that using the iPad gave teachers a valuable assessment tool. Teachers could use the device as another tool in their instructional repertoire that allowed them to analyze student understanding of the subject matter presented.

The previous chapter presented findings of this study by listing and organizing data from the interviews and presenting a readable and comprehensive narrative that presented the lived experiences of the participants. The purpose of this chapter is to provide interpretative insights into the findings. This chapter is intended to facilitate a well-rounded
understanding of those experiences. The central themes and ideas that have come forth as a result of this study are:

1. iPad use had added value in the classroom.
2. iPad use supports teacher/student engagement.
3. iPad use does not come with PD.
4. iPad use fosters a paper free environment.

Interpretation of Findings

Finding 1: iPad use had added value in the classroom.

One of the essential ideas from the TPACK framework is how the choices that educators make within the three main domains (technological knowledge, pedagogical knowledge and content knowledge) in designing specific learning tasks affect the quality of learning that goes on in the classroom. Using the iPad to make connections between pedagogical practice and formative assessment tools helps to make those connections in a much smoother fashion. The first finding in this study established that all participants placed a major focus on using the iPad as another form of assessment in their classroom once it was discovered to be such a tool. It is more than likely that all teachers prior to using the iPad had no idea that the iPad could be such a valuable tool to assess student learning, and to assist with those students who may have struggled with traditional assessments. It is this researcher’s belief that as the device was explored, teachers began to feel a sense of comfort with the device, which led to further exploration into the iPad’s uses. One of the primary methods to assess students was through the use of project-based learning. Teachers shared how they were able to assess students through the various non-traditional ways that the iPad allowed. Additionally, professional development, although limited to collegial circles, gave teachers more opportunities to learn more about the various ways the iPad could be
incorporated into their classrooms and, more importantly, how it could benefit their kids. Finding how strong an assessment tool the iPad was, and the limitless ways it allowed students to show comprehension of the subject matter, was a huge benefit of incorporating the device into their classrooms. The goal of assessment is to improve students’ learning and, at the same time, teachers’ teaching. The iPad offers this to both teacher and student. On the one hand, the iPad offers teachers multiple ways to assess students through the use of the many apps (some of which are designed directly for this purpose) while it offers the same number of limitless apps that enhance the instruction that is already in place. Enhancing and strengthening teacher pedagogical practice is what this researcher believes is the most meaningful benefit of using the iPad. It is this researcher’s belief that finding the value of the iPad as an assessment tool and not so much as a tool by which students can construct writing assignments or conduct research, is one of the most important discoveries to this study.

Finding 2: iPad use supports teacher to student engagement.

A second very prominent finding in this study is the immediacy factor that using the iPad gave to teachers. Teachers found the iPad very useful in reaching out to students and supplying them with feedback that was instant, along with the ability to share classroom materials prior to the lessons beginning. Teachers shared that by being able to do this, it freed up more time for them to interact with students, as opposed to having to take time to hand out materials or explain the topic of the day. Teachers could give materials and instructions to the student’s days, sometimes even weeks in advance, which allowed the teacher to free time up in the classroom, and gave students the ability to look at the assignments the night before and prior to coming into class. Teachers felt that their time on task was greatly improved, and students were much more prepared for class. Class
discussions were improved. These are factors that allowed teachers more time on the task and more time interacting and assessing students. One of the main concepts of the TPACK framework is for teachers to understand the balance between technology, pedagogy, and content. Understanding how the iPad has allowed for more teacher instruction while impending the use of the device is evidence of the balance that makes the TPACK framework so valuable to this study.

**Finding 3: iPad use does not come with PD.**

Research by Shapley, Sheehan, Maloney, & Caranikas-Walker (2010), revealed that teachers who received “school-level supports in combination with a wide array of curricular and assessment resources andlogistically more convenient technology access, expressed increasingly stronger ideological affiliations across time with technology integration and learner-centered instruction” (p. 24). The third finding was that teachers did not receive any sort of formal professional development from outside of the school district. Teachers relied solely on the information they gained from collegial circles during their common planning time. During this time, teachers were able to share best practices and the apps that they were using that worked and those that they found did not help them. Some of the teachers felt as if professional training from outside sources may have helped them during this transition; however, all research participants felt that the collegial circles that they took part in were valuable and informative. Teachers also shared how at times they learned from students. Many of the research subjects shared that students would regularly bring them new apps that they discovered to see if they would be useful in the class. Teachers noted that since students today are basically born with the technology, it would be silly to not listen to their ideas and suggestions.
Finding 4: iPad use fosters a paper free environment.

The last prominent finding in this study was how teachers transitioned from using paper regularly to becoming a “cloud” environment that no longer needed to rely on paper as much as they had in the past. Like the finding that dealt with immediacy, having teachers now work in a paper free environment enables teachers to spend less time worrying about worksheets and other hard copies that would otherwise require the teacher to stop what they were doing to either pass out the work, or to call students up to pick up assignments. In addition, teachers shared that when new materials were needed, they would not have to print anything out nor wait until they saw the class the following day or at the beginning of the school week. Teachers can very simply send the information immediately without the need to print anything out. In addition, the importance of no longer worrying about students losing work is something that was invaluable to not only students, but teachers as well.

Implications for Further Research

In this study, I sought to investigate teachers’ experiences using the iPad in their classrooms as an instructional device. I looked to have teachers respond to a series of questions related to their experiences using the iPad and how it has enhanced or affected them personally and in their classrooms. I asked in principal for teachers to share with me their experiences prior to and during their time using the iPad in their classrooms. Questions were developed and directed in a way that captured a complete picture and experience of all teachers in order to give the reader a solid representation of the teachers’ entire experience from beginning to the present. In this section, I conclude by briefly foregrounding some of the study's implications for future practice and some of the directions that I believe are needed for future research that are a result of this study.
The iPad, and overall classroom technology is a tool that needs to be studied further in order to fully understand how impactful it is for all learners, specifically English Language Learners, students with disabilities and those students who simply don’t thrive with “traditional” classroom assessment methods. This study uncovered the way the iPad helped with alternative forms of assessment. Taking for example, Romeo and Juliet and how a traditional essay or research paper could be used as a final assessment project, however there are so many other ways that students can show their understanding of Romeo and Juliet without necessarily writing an essay or research paper. There are additional assessment methods that teachers should consider as well such as, student created portfolios. In a district where technology is embraced, students can begin constructing their portfolios from the time they enter kindergarten which allows their portfolios to follow them to each grade and gives the teachers opportunities to view their work and see student progress. Additionally, students can see their growth and identify areas they need improvement in, as well as areas of celebration. This study revealed how students use the iPad in order to create a movie trailer or newscast in order for students to create a project that still shows their comprehension and learning of the book, however it allows them to deliver it in an alternative way.

Technology is an ever-changing area. When I began my research, the iPad was a relatively new device and its use in the classroom was in its infancy across the country. Since then, the iPad has been integrated in a variety of ways, and teachers are making use of this and other types of tablets in a variety of ways. It is my strong opinion that further research is needed, especially since technology and applications for classroom use are developed and utilized on what seems like an everyday basis. Evaluating and studying this and all other
devices such as the iPad is crucial if educational practitioners wish to continue to use the tool in an impactful educational manner.

The researcher recommends that there would be a great benefit to further studies in order to expand the knowledge of how teachers may best use and implement the iPad into their classrooms and curricula. Taking this into consideration, below is a list of items that should be considered when conducting future research:

- As this study saw a limited number of research participants, a larger sample of educators is needed in order to conduct further research. This sample should reflect a variety of grades and subject areas to get a full experience.
- This study examined teachers’ perceptions and experience. New research should look to examine students’ perceptions and experiences to focus on the impact that using the device has on students from their perspective.
- A study that would look to compare those teachers that received PD from outside of the school district compared to those who participate only in internal PD and collegial circles would be beneficial to the literature. This research should look to investigate whether those teachers who received professional development had any different outcomes form the use of the iPad than those teachers that only learned from their peers.
- A study that examines the iPad as an assessment tool and looks at it value with English Language Learners and students with disabilities. This study uncovered the value of the iPad as an assessment tool directly related to project-based learning; however, the impact on specific sub-groups of students is still unknown. Direct research tying the iPad to those sub-groups
of students and the impact it may or may not have on them is crucial for educators.

Implications for Practice

There are multiple reasons why any educator would want to incorporate the iPad or device like the iPad in their classrooms. What is important is to understand why you want to use the device and what ultimately you want to accomplish by using the device. Educators who are considering implementing and using the iPad in their classrooms should:

- **Determine why they want to use the iPad.** Teachers should ask themselves what they look to gain by using the iPad. Is it for their own personal benefit, for their students’, or both? Depending on what subject areas they teach, determine if every student will get a device or if student will share.

- **Teachers should conduct as much research as possible on using the iPad in their respective subject areas.** Although there are a tremendous number of apps out there, there a lot of subject areas for which apps have not been developed.

- **Teachers should prepare themselves as much as possible.** Teachers need to prepare themselves for what they expect and what is unexpected with respect to using the iPad or any device like the iPad. Not all teachers are lucky enough to have their districts send them out for professional development, so teachers need to be prepared to fund their own training if necessary.

- **Lastly, teachers should look to plan for activities that use the strengths of the iPad and any ways that it helps students and not necessarily the teacher.** Although it is a valuable tool for the teacher, ultimately it should be used
as a tool for the students. The value of the iPad is limitless; it is up to the educator to continue to unlock the potential of the device.

Educators who believe in project-based learning must seriously consider the iPad. This study has discovered the value and importance of the iPad as a device for project-based learning. The use of the iPad for this purpose is limitless as apps continue to flood the technology market. Students can use the iPad for not only traditional assessments such as research papers and outlines, but they can use it to create video and audio projects that can easily allow teachers to assess their students.

The iPad is an invaluable tool for students who struggle with traditional assessments. This researcher believes that the iPad is an extremely valuable tool for allowing multiple entry points into lessons and curricula. Students with disabilities and English Language Learners will benefit greatly from the use and implementation of the iPad. Students can use the iPad for visual and auditory support, which gives the teacher another strong tool for helping to differentiate their lessons. In addition to using things such as graphic organizers, glossaries, word lists, and pictures cues, teachers now have a tool that can give them instant differentiation methods and an additional form of student assessment. To effectively practice differentiation, teachers must design lessons that are based on students’ learning styles. The iPad gives teachers that ability instantly, and at the same time allows students to learn technological skills which are essential for college and career readiness.

The iPad and other types of tablet technology are essential tools needed to help bridge the three main concepts of the TPACK learning theory. TPACK looks to combine solid pedagogical practice with the most effective technological practices. It is the basis for all
effective teaching that uses technology. Findings from this study uncovered effective instruction that was strengthened by technology and the teachers’ content knowledge.

**Implications for Professional Practice**

As a result of this research study, I have gained a strong knowledge base of how beneficial the iPad is as it relates to project-based learning. I have a strong belief that all students learn differently. There are auditory learners, visual learners, hands-on learners, and, of course, those students who thrive in any kind of setting and learning style. I firmly believe that students need to be given every opportunity to share their learning. With the emergence of so many educational programs and structures that are now in place all of the country, there needs to be tools that students use in order to be successful. For example, in programs such as Teachers College Reading and Writing, students use a white board to share their learning with the class and with the teacher as a significant piece of assessment. It is very easy to substitute the iPad for this use, which not only acts as the writing tool, but it can also be a tool that students can use to further elaborate on their responses, when writing out a response becomes difficult. Having students draw a picture in order to show evidence of learning, or having them record themselves and share their recordings with the teacher or the class are two examples of this. It is a tool that has limitless capabilities in helping students to display their learning. I have gained a new respect and appreciation for project-based learning and the value it has for students.

It is my hope that as an educational leader I will have the ability and authority to bring iPads to a school district. The knowledge that I now have because of this study can help students in any school district become more engaged and expressive learners. I will use project-based learning as the primary learning style and assessment tool, along with the iPad, and this will my focus in educating the students of my district. It is my belief that the
iPad can be an incredibly effective tool for teachers and students when used correctly. As educators, we owe it to our students to bring learning to them in an innovative and engaging manner that considers all learners and their needs.

**Personal Positionality & Reflection**

My goal as an educator, researcher and practitioner was to gain knowledge that would guide my thinking to how a simple 9.5-inch by 7.31-inch electronic tablet could impact students. To say that this study did this would be an understatement. I am a more knowledgeable educator as a result of this study and a firm believer in the power of the iPad and how it can help teachers and students. This study has led to an understanding of the value of the iPad as an assessment tool for teachers. The iPad can also be used as an additional entry point for students’ use during any lesson. This tool has value in being an on-demand translation device for ELL students and it enhances the listening, literacy, and speaking proficiency of these students. There is value with how it acts as a tool for alternate assessment and project-based learning for those students who struggle with traditional assessment methods such as essays or term papers. The iPad becomes a tool for students to express themselves in ways that they never had opportunities to do so in the past. Lastly, the iPad becomes a viable tool to help transition from a teacher-centered learning environment to a fully student-centered classroom environment. It excites me to think what the future holds for this device and our educational institutions. However, one thing is for sure, there is value to students and teachers alike in making the iPad a regular part of their instructional day and this is something that I will take with me as an educational leader and will turnkey to my staff.

**Trust in Technology and Your Students**
Change is something that is not always welcomed by many teachers. Educators who have been teaching for many years usually have a system that works for them and their students; adding something new to that equation is not always a smooth transition. As an educator who started his career with little technology, change was something that seemed to be a part of every school year, especially when it came to technology. I have had the good fortune to see the transition from no technology in the classroom, to what is now classrooms with full technological integration. I have been able to see how essential and impactful fully functioning Smartboards, Promethean boards, Elmo cameras, iPads, and Apple TV’s have been to students. Additionally, these types of technology have been able to assist teachers in making the major transitions from a teacher centered classroom environment, to a student-centered environment that is completely student run. Technology allows for student exploration and discovery which is an essential piece of a student-centered classroom. The one major piece that educators need to embrace, is the fact that kids today are born with technology and most likely have a better grasp on technology than we do. My own realization to this, was the first time I saw my 2-year-old son Lucas unlock my iPhone. At first I thought it was just an accident, however I quickly realized that he knew what he was doing and this eventually lead to him being able to launch applications. This is when I realized that technology will be a major part of his life and is something that should be taken advantage of, not ignored. Student’s knowledge of technology should not be ignored. In many cases students can be a vital part of the professional development process for teachers and an incredible way for students to take ownership in their learning. Technology is an incredible tool that allows for student-centered instruction, student ownership, enhancement of group work, multiple forms of formative and summative assessment and gives students a tool with unlimited resources for project-based learning. Teachers should
understand not having professional development as a resource should not deter them from wanting to implement any form of technology into their classrooms. The internet is filled with unlimited resources that can train and assist teachers throughout the process. In addition, as this study has discovered, meeting regularly with colleagues in a valuable tool to help share best technological practices. Additionally, your students can be your most valuable form of training, trust them they are knowledgeable and can help you find ways to use technology which not only helps you but enhances their classroom experience. For those teachers who refuse to infuse technology in their classrooms, the message is simple, you went into this profession to help children achieve the best education possible. Technology can make a powerful and positive impact on students that this is growing and evolving every day. According to a recent student by Common Sense Media (2016) “teens are spending more than one-third of their days using media such as online video or music, nearly nine hours on average.” (2016). Technology encompasses most of the time that students are awake, why wouldn't we take advantage of this tool and use it to engage our kids? This is a question that educators who do not wish to engage in technology in their classroom should ask themselves.
References


Knowles, M. S. (1968). *Andragogy, Not Pedagogy Adult Leadership, April 1968*


Kvale, S. *Interviews: An Introduction to Qualitative Research Interviewing*, Sage Publications, 1996


McNamara, Carter, PhD. General Guidelines for Conducting Interviews, Minnesota, 1999


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Valstad, H. (2011) “*Introducing The iPad in A Norwegian High School: How Do Students and Teachers React to This Technology*”. Computer Science. Trondheim, Norway, Norwegian University of Science and Technology


NOTIFICATION OF IRB ACTION

Date: May 2, 2016          IRB #: CPS16-03-10
Principal Investigator(s): Karen Reiss Medwed
                          Carlos Perez
Department:              Doctor of Education Program
                          College of Professional Studies
Address:                 20 Belvidere
                          Northeastern University
Title of Project:         Teacher’s Perceptions and Experiences Using the Apple
                          iPad as an Instructional Tool
Participating Sites:      Roslyn Public Schools permission forthcoming

DHHS Review Category:     Expedited #6, #7
Informed Consents:        One (1) signed consent form
Monitoring Interval:      12 months

APPROVAL EXPIRATION DATE: MAY 1, 2017

Investigator’s Responsibilities:
1. The informed consent form bearing the IRB approval stamp must be used when
   recruiting participants into the study.
2. The investigator must notify IRB immediately of unexpected adverse reactions, or new
   information that may alter our perception of the benefit-risk ratio.
3. Study procedures and files are subject to audit any time.
4. Any modifications of the protocol or the informed consent as the study progresses must
   be reviewed and approved by this committee prior to being instituted.
5. Continuing Review Approval for the proposal should be requested at least one month
   prior to the expiration date above.
6. This approval applies to the protection of human subjects only. It does not apply to any
   other university approvals that may be necessary.

C. Randall Colvin, Ph.D., Chair
Northeastern University Institutional Review Board

Nan C. Regina, Director
Human Subject Research Protection
Appendix B

Signed Informed Consent Document

Northeastern University, Department
Name of Investigator(s): Principal Investigator: Dr. Karen Medwed, Student Researcher: Mr. Carlos Perez, Jr.
Title of Project: Teacher’s Perceptions and Experiences Using the Apple iPad as an Instructional Tool

Informed Consent to Participate in a Research Study

We are inviting you to take part in a research study. This form will tell you about the study, but the researcher will explain it to you first. You may ask this person any questions that you have. When you are ready to make a decision, you may tell the researcher if you want to participate or not. You do not have to participate if you do not want to. If you decide to participate, the researcher will ask you to sign this statement and will give you a copy to keep.

Why am I being asked to take part in this research study?

You are being asked to take part in this research study because of your experience in using the Apple iPad as an instructional tool in your classroom.

Why is this research study being done?

The purpose of this study is to examine high school teachers’ experiences and perceptions after using the Apple iPad as an instructional tool in the classroom. As the use of the iPad and tablet technology continues to increase it is important to gauge through the eyes of the educator just how valuable the iPad is to their instruction.

What will I be asked to do?

If you decide to take part in this study, we will ask you to answer a set of predetermined questions, in addition to sharing your experiences in your own words using the iPad in your classes.

Will there be any risk or discomfort to me?

There is no foreseeable risk or discomfort or participating in this study.

Will I benefit by being in this research?

There will be no direct benefit to you for taking part in the study. However, the information learned from this study may help other educators as to the best way to utilize the iPad into their instructional practices.

Who will see the information about me?

Your part in this study will be confidential. Only the researchers on this study will see the information about you. No reports or publications will use information that can identify you in any way or any individual as being of this project. All personal information and data will
be secured in password protected digital folders. At the conclusion of the research study, all information collected from research subjects will be destroyed, this includes notes and all audio recordings.

In rare instances, authorized people may request to see research information about you and other people in this study. This is done only to be sure that the research is done properly. We would only permit people who are authorized by organizations such as the Northeastern University Institutional Review Board.

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<th>If I do not want to take part in the study, what choices do I have?</th>
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</thead>
<tbody>
<tr>
<td>You have a choice as to whether or not you would like to participate in this or any research study.</td>
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<tr>
<th>What will happen if I suffer any harm from this research?</th>
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<tbody>
<tr>
<td>No special arrangements will be made for compensation or for payment for treatment solely because of my participation in this research.</td>
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<tr>
<th>Can I stop my participation in this study?</th>
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<tbody>
<tr>
<td>Your participation in this research is completely voluntary. You do not have to participate if you do not want to and you can refuse to answer any question. Even if you begin the study, you may quit at any time.</td>
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<tr>
<th>Who can I contact if I have questions or problems?</th>
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<tbody>
<tr>
<td>If you have any questions about this study, please feel free to contact Carlos Perez at (631) 431-6770, the person mainly responsible for the research. You can also contact Dr. Karen Medwed (617) 390-4072, the Principal Investigator.</td>
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<tr>
<th>Who can I contact about my rights as a participant?</th>
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<tbody>
<tr>
<td>If you have any questions about your rights in this research, you may contact Nan C. Regina, Director, Human Subject Research Protection, 490 Renaissance Park, Northeastern University, Boston, MA 02115. Tel: 617.373.4588, Email: <a href="mailto:n.regina@neu.edu">n.regina@neu.edu</a>. You may call anonymously if you wish.</td>
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<tr>
<th>Will I be paid for my participation?</th>
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<tbody>
<tr>
<td>There will be no payment for your participation.</td>
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<tr>
<th>Will it cost me anything to participate?</th>
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<tbody>
<tr>
<td>It will not cost you anything to take part in this study.</td>
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</tbody>
</table>

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<tr>
<th>Is there anything else I need to know?</th>
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<tbody>
<tr>
<td>Your time and effort in participating in this study is greatly appreciated.</td>
</tr>
</tbody>
</table>

| I agree to take part in this research. |
Depending upon the nature of your research, you may also be required to provide information about one or more of the following if it is applicable:

1. A statement that the particular treatment or procedure may involve risks to the subject (or to the embryo or fetus, if the subject is or may become pregnant) which are currently unforeseeable.
2. Anticipated circumstances under which the subject's participation may be terminated by the investigator without regard to the subject’s consent.
3. Any additional costs to the subject that may result from participation in the research.
4. The consequences of a subject's decision to withdraw from the research and procedures for orderly termination of participation by the subject.
5. A statement that significant new finding(s) developed during the course of the research which may be related to the subject’s willingness to continue participation will be provided to the subject.
6. The approximate number of subjects involved in the study
Appendix C
General Interview Guide
Teacher’s Perceptions of the iPad as an Instructional Device?

Time of Interview: __________________________________________

Date: ______________________________________________________

Place: ___________________________________________________

Research Subject: ___________________________________________

Introductory Questions

1. What is your name?

2. Where do you currently work/teach?’

3. How long have you been employed by your current district?

4. How many years have you been teaching?

5. What subject do you teach?

6. When did you first begin to use the iPad in your classroom?

7. Was the decision to use the iPad one you made voluntarily or were you directed to use it?

Central Research Questions

1. Tell me what concerns if any you had prior to using the iPad

2. Tell me about the 1st year using the iPad

3. What were the benefits of using the iPad in your classroom?

4. Tell me about the 2nd year using the iPad.

5. How was it better, worse or different than the 1st year?

6. How has the iPad enhanced instruction in your classes?