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UTILIZING IPADS TO ENHANCE
STUDENT ENGAGEMENT IN
VOCABULARY LEARNING: A CASE STUDY

by

SARAH PARK
B.S. University of Central Florida, 2013

A thesis submitted in partial fulfillment of the requirements
for the degree of Master of Science
in the Department of Teaching and Learning Principles
in the College of Education and Human Performance
at the University of Central Florida
Orlando, Florida

Fall Term
2013

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ABSTRACT

According to research evidence, the relationship between vocabulary and reading proficiency is so powerful that it is a valuable predictor of reading comprehension and academic achievement in the later school years (Scarborough, 2011). The major contributor to reading problem is the vocabulary demand of texts that students are assigned in school (Mckeown, Corsson, Arts, Sandora, & Beck, 2012). National Assessment of Education Progress (National Center for Education Statistics, 2012) stated the essential link between the words students know and students' ability to use those words to understand what they read. Therefore, researchers and educators have both agreed the importance of minimizing vocabulary gaps in order for students to be able to succeed academically and deal with rigorous content (Sparks, 2013).

This case study examined the effects of how utilizing an iPad would enhance a student's engagement in vocabulary learning. A third grade student performing below grade level in reading comprehension and vocabulary participated in this study. The research took place at the University of Central Florida, College of Education, Reading Clinic. This research study concentrated on five different iPad applications that focused on enhancing the student's engagement in ways to use the iPad to engage students with vocabulary learning. The data obtained from this research were gathered through pre and post vocabulary test developed by the researcher to assess the student's learning gains. In addition, multiple sources such as attitude pre and post survey, game results, and observations were also collected. At the end of the research, the participant displayed tremendous learning gains in vocabulary. In addition, the researcher concluded that utilizing an iPad significantly enhanced the student's engagement in vocabulary learning.

I would like to dedicate this thesis to my loving parents, Eunae and Jong Sung Park. I would like to thank them for all the sacrifices they have made for my education. I would also like to thank my sister, Soo Jung Park, for creating the competitive spirit within me. Lastly, I would like to thank my better half, Xi Guo. Thank you for always being there and encouraging me throughout this process.

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CHAPTER ONE: INTRODUCTION

The utmost predictor of reading comprehension is vocabulary (Baker, Simmons, & Kameenui, 1998); reading comprehension is fundamental to learning in the content areas (Fisher & Frey, 2008). According to research evidence, the relationship between vocabulary and reading proficiency is so powerful that it is a valuable predictor of reading comprehension and academic achievement in the later school years (Fisher & Frey, 2008). An essential component of early reading consists of learning and understanding the meaning of new words (Baker, Simmons, & Kammenui, 1998). Recent reports and test results suggest that as students reach their intermediate and middle school years, too few are reading at levels needed to learn from required school texts (Mckeown, Crosson, Artz, Sandora, & Beck, 2013). The major contributor to reading problems is the vocabulary demand of texts that students are assigned in school (Mckeown, Crosson, Artz, Sandora, & Beck, 2013). National Assessment of Education Progress (National Center for Education Statistics, 2012) stated the essential link between the words students know and students' ability to use those words to understand what they read. This research evidence suggests that we must do more to help students build a deep flexible understanding of the kinds of words that are used in academic texts.

According to a seminal 2003 longitudinal study by Betty Hard and Todd R. Risley (2003), "by age 3, the age children enter into early preschool, youngsters from well-to-do families have a working vocabulary of 1,116 words, compared to 749 words for children in working-class families and 525 words for children on welfare" (p.335). There are various amounts of available research-based approaches available for vocabulary instruction, but

learning word meanings for students tends to be superficial and brief (Kucan, 2012). Students who enter school with limited vocabulary tend not to catch up with and instead fall farther behind more knowledgeable peers (Brabham, Buskist, Henderson, Paleologos, & Baugh, 2012). “The consensus among researchers and educators has been that students must close such vocabulary gaps to succeed academically and deal with rigorous content” (Sparks, 2013).

Common Core: Shift in Vocabulary and Nonfiction Text

The Common Core State Standards (CCSS) is a state-led effort that established a single set of clear educational standards for kindergarten through twelfth grade in English Language Arts and Mathematics developed by teachers, researchers, and leading experts (www.corestandards.org). CCSS are designed to provide a clear set of shared goals and expectations for the knowledge and skills students need in English Language Arts and Mathematics at each grade level to ultimately be prepared to graduate college and be career ready. Forty-five states, the District of Columbia, four territories, and the Department of Defense Education Activity have adopted the CCSS and full national implementation is to take place in 2014 (www.corestandards.org).

There are six pedagogical shifts in ELA/Literacy demanded by the new Common Core State Standards (CCSS, 2013). One of those shifts is academic vocabulary. Susan B. Neuman, a professor of educational studies specializing in early literacy development at the University of Michigan in Ann Arbor suggested that many districts could be at a disadvantage in meeting the increased requirements for vocabulary learning from the Common Core State Standards (Sparks, 2013).

Teachers and school librarians are brainstorming for methods in order to incorporate more engaging nonfiction reading for students. Another shift in CCSS of the English Language Arts Standards requires students to read an increasing amount of nonfiction text. Nonfiction is reading to learn, reading to follow an author's reasoning, reading to analyze claims and support these claims with evidence (Potter & Scheuer, 2013). This will require students to know the meanings of many sophisticated words and learn how to apply higher-level thinking skills to nonfiction text. The reasons for giving emphasis to nonfiction in elementary schools are to: satisfy and broaden curiosity, provide breadth and depth of information, offer accurate information, provide models for informational writing, challenge readers to read critically, help present familiar things in new ways, promote exploration, stimulate direct experience, and connect readers and reading to the real world (Callison, 2011). Students constantly build the transferable vocabulary they need to access grade level complex texts. It can be accomplished through utilizing complex texts to build vocabulary and comprehension.

The CCSS allow teachers to be flexible and creative with their instruction. Many instructional changes will need to take place for teachers and students to meet the rigor of the CCSS and teachers will need tools and techniques to meet the challenges (Witherell & McMackin, 2013). iPads offer many different applications and tools teachers can utilize to be creative with their classroom instruction.

National Assessment of Educational Progress: Reading Comprehension

Reading researchers have long acknowledged the important role that vocabulary plays in influencing a child's ability to comprehend text. Students who have limited vocabulary are at-

risk of not becoming proficient in reading. Beginning in 2009, the National Assessment of Educational Progress (NAEP) had integrated a measure of students' understanding of word meaning with the measurement of passage comprehension in the NAEP reading assessment. The results concluded that fourth and eighth-grade vocabulary scores did not change significantly from 2009-2011. The decision to focus on students' understanding of word meaning emphasized the important role vocabulary plays in the process of reading comprehension (NAEP, 2011). Students who scored higher on NAEP vocabulary questions also scored higher in reading comprehension (NAEP, 2011). Thus, it has shown that there is a strong correlation between vocabulary and comprehension. Given that vocabulary knowledge plays a vital role in reading comprehension, it is important that schools create instructional strategies to improve the problem of limited vocabulary knowledge in some students.

Student's vocabulary knowledge is the key ingredient of learning to successfully read with comprehension, but recent research found limited instruction in vocabulary within the classroom. Increasing student's vocabulary knowledge is fundamental in order for students to be able to thrive in reading comprehension. NAEP (2012) stated the essential link between the words students know and students' ability to use those words to understand what they read. This study will explore the role of iPad use in student engagement with vocabulary learning. In the following section, I will review representative literacy in the following areas: the importance of vocabulary instruction, technology in education, and student engagement.

CHAPTER TWO: LITERATURE REVIEW

Improving students' vocabulary is an area of urgent need if teachers are to develop the advanced literacy levels required for success in school and beyond (Biancarosa & Snow, 2006; Graves & Watts-Taffe, 2008). According to experts, we are in the midst of an adolescent literacy crisis because 70% of U.S. students in grades 4-12 struggle to read on grade level (Flanigan, Templeton, & Hayes, 2012). This data suggests that only about one third of upper-grades students can read grade level material with adequate accuracy, fluency, and comprehension to successfully tackle the increasingly sophisticated text that is part of the curriculum (Flanigan, Templeton, & Hayes, 2012). "Although there are no typical profiles for these students and no single reason for their difficulties, many of them struggle with the vocabulary content area learning" (Flanigan, Templeton, & Hayes, 2012).

The average reading vocabulary of a high school graduate has been estimated at 40,000 words (Stahl & Nagy, 2006). Not surprisingly, struggling readers can be thousands, perhaps even ten thousand words or more behind their normal-achieving peers (Stahl & Nagy, 2006). This vocabulary gap has potentially disastrous implications for students lacking the necessary foundational word knowledge to succeed in the upper-grade curriculum (Flanigan, Templeton, & Hayes, 2012). Vocabulary instruction should be part of a comprehensive, multifaceted approach that includes large amounts of reading in language-rich texts at the student's independent or instructional level, direct instruction of important content-specific and general academic words, and focus on engaging students in word learning (Stahl & Nagy, 2006).

Stahl and Nagy (2006) stated, “Vocabulary is the hallmark of an educated individual.” They had concurred that it “opens or closes access to sources of information that will affect our future” (p.198). The relationship between vocabulary and reading comprehension has strong implications of vocabulary knowledge on a person’s future, thus states that vocabulary instruction should play a vital role in schooling (Beck & McKeown, 2001). Since vocabulary plays an important role in reading success, it is essential that schools develop effective instructional strategies that will improve student’s limited vocabulary knowledge. Unfortunately, there is often little emphasis on vocabulary development in the school curricula (Beck & McKeown, 2005). Vocabulary instruction is often an area where teachers need guidance such as instructional approaches, strategies and materials.

“Educate to Innovate” Campaign

The American campaign of “Educate to Innovate” launched by President Obama (2009) emphasizes how technology can be a powerful driving force for innovation in education. “It can improve the quality of instructional materials available to teachers and students, aiding in the development of high-quality assessments that capture student learning and accelerating the collection and use of data to provide rich feedback to students, teachers, and schools” (President’s Council of Advisors on Science and Technology, 2009). “Realizing the benefits of technology for K-12 education, however, will require active investments in research and development to create broadly useful technology platforms and well designed and validated explained of comprehensive, integrated “deeply digital” instructional materials” (President’s

Council of Advisors on Science and Technology, 2009). Therefore, this campaign supports the development of technology for learning, teaching and assessment for students.

International Reading Association

The International Reading Association (2009) issued a position statement titled, *New Literacies and 21st-Century Technologies*, which states the following: in order for students to become fully literate in today's world, they must become proficient in the new literacies of 21st century technologies (IRA, 2009). IRA strongly believes that literacy educators have a responsibility to assimilate information and communication technologies (ICTs) into the curriculum. This will result in preparing students for the futures they deserve (IRA, 2009). Although technology and media are easily accessible, it is not included in teachers' priority lists of vocabulary instruction strategies and materials (Berne & Blachowicz, 2008). International Reading Association (2009) states that, "it is important that teachers understand these differences and integrates digital technology into the curriculum to provide students with opportunities to learn these new literacies" (p.3) The iPad may help teachers meet traditional print-based literacy goals while also providing students with opportunities to learn the new literacies of 21st-century technologies by responding to texts in unique ways (Hutchison, Beschorner & Schmidt-Crawford, 2012). It may also serve as an effective tool to help students build their vocabulary by enhancing their learning for students at various achievement levels.

Technology and iPad Integration

Donald Leu and colleagues have directed our attention to how the new technologies have come to redefine literacy in school, work, and home. They believe that information and

communication technologies (ICTs) are the most critical for schools to be concerned with (Leu, Kinzer, Coiro, & Cammack, 2004). In order to fully function in the 21st century, students require new literacies that include the skills, strategies, and dispositions necessary to adapt to changing technologies influencing all aspects of life (Lapp, Moss, & Rowsell, 2012). “New literacies in literature and in practice span a broad spectrum of concepts, from literacy as a social and cultural practice” (Heath, 1983, p.184), “to literacy as digitally mediated” (Coiro et al., 2008, p.32; Davies & Merchant, 2008, p.8), “to literacy as multimodal and as invoking multiliteracies” (Cope, Kalantzis, & Harvey, 2000, p.18) “and as encompassing eclectic texts, found or handmade artifacts, small mobile devices, and tablets” (Pahl & Roswell, 2010, p.72). Although literacy is clearly changing in the world, schools continue to privilege traditional texts, beliefs, and forms of reading and writing. Therefore, many authors and researchers of new literacies believe it is imperative that school literacy be reconceptualized for the 21st century (Lapp, Moss, & Rowsell, 2012).

Technological advancements have developed various types of mobile learning devices that are used for different purposes in the classroom. Mobile devices are known as a handheld computing device that have an operating system, such as an iPad, iPod, tablet or smart phones. The iPad is a tablet computer created by Apple that runs on the same operating system as the iPhone. “It has most of the capabilities of a desktop or laptop computer, but with additional unique affordances, such as a multi-touch screen and a seemingly endless variety of applications, that promote previously unseen possibilities for mobile learning” (Hutchison, Beschoner, & Schmidt-Crawford, 2012, p.20).

Mobile devices like the iPad are used in many school settings; they are used for motivational purposes, for building students' experiences with technology, and for research and other purposes. Integrating iPads during instruction could provide additional support for struggling students because there are multiple functions and applications that will support their learning. Although they are easy to hold and move from space to space, there are several issues associated with accessibility, pedagogical uses, and integration of mobile readers such as the iPad into the regular classroom curriculum (Lapp, Moss, Roswell, 2013).

iPads and Literacy

Learning vocabulary on the Internet offers students a powerful way to quickly increase their vocabularies, as long as they are able to self-regulate their online word learning (Ebner & Ehri, 2013). App developers and publishing houses are exploring possibilities for drawing readers into books by integrating high-impact illustrations and photographs, providing engaging interactive elements, and adding interesting text (Potter, Scheuer, 2013). The benefit of interacting with words in multiple and varied contexts on the Internet are supported by the incremental theory of word knowledge. According to this theory, the "one important aspect of word learning is that knowledge of word meanings typical accrues gradually, over multiple exposures to words in contexts" (Frishkoff, Collins-Thompson, Perfetti, & Callan, 2008, p. 907). Every time a student encounters a word, memory representations of the word is strengthened through repeated exposure (Frishkoff, Collins-Thompson, Perfetti, & Callan, 2008). When students use an iPad, they will be able to read an unfamiliar word in context and click on it to be taken to a separate webpage or an application that further discusses the meaning of the term.

Incorporating the iPad for vocabulary instruction has become easily accessible for educators and students, which would be a great potential tool to help students build their vocabulary in an effective manner.

Researchers, Dalton and Grisham (2011) agreed that there are various digital tools and media that are available in most schools and teachers could harness now to improve vocabulary learning; they suggested that teachers should use tools that capture the interest of students and provide scaffolds and contexts in which to learn with, and about, words more profitably. “Learners acquire some semantic features, and strengthen existing associations, each time that they encounter a word in context” (Frishkoff, Collins-Thompson, Perfetti, & Callan, 2008). Many researchers agree that for students to have the best chance of achieving ownership of a word, the instructional encounters provided for students must be rich, interactive, and multi-faceted (Sobolak, 2008). Multiple contexts of words provide overlapping cues that that will allow students to strengthen their vocabulary (Frishkoff, Collins-Thompson, Perfetti, & Callan, 2008). The iPads is an effective instructional tool that can be used to meet students’ varied learning needs and interests and can engage the student in different interactions with any vocabulary word.

Engagement and Motivation

As society continues to advance, the demand for digital technologies in the classroom increases (Saine & Kara-Soterious, 2010). “The media-driven sensationalism and rallying about the importance of iPads and technology as definitive ways to develop innovation and creativity have led many to be enamored by the frenzy of buzzwords, such as “engagement” and

“innovative learning” (Peluso, 2012, p. 6). Pedagogical approaches that incorporate learning technologies into lessons and coursework have had promising results in relation to students’ motivation to learn (Amelink, Scales & Tront, 2012). A student’s motivation to learn plays a strong role in how they are successful at a given task. Students’ level of motivation can be observed by examining how students are engaged during the learning process. Students who are engaged make connection with pre-existing knowledge, have an organized approach to identified learning activities, and can monitor their understanding of the content presented using critical thinking skills (Duncan & McKeachie 2005). Studies have shown that incorporating technology into lessons and the curriculum have had promising results in relation to students’ motivation to learn which would increase engagement level.

Research shows that students are engaging in learning differently from prior generations (Peluso, 2012). Tools such as the iPad have the potential to transform literacy instruction and the way students learn in the classroom. Teachers claim that when students are engaged in digital literacy activities, they see these tools as exciting and unique, but often not as schoolwork (Saine, 2012). Digital tools and applications that the iPad offers allow students to be engaged in their learning at their own pace. iPads allow educators to promote differentiated instruction in their classrooms and encourage collaboration with other students. In addition, they allow students to feel a sense of ownership in their own learning. Using an iPad in the classroom during vocabulary instruction could help to build students’ confidence in their own learning. The iPad allows students to be able to work together and share their thinking and learning to rely on others to solve problems, answer questions, and share discoveries instead of relying solely on the

teacher (Ensor, 2012). In addition, with the iPad, students will have immediate access to additional resources for any vocabulary word.

Learning technologies used for instruction including such things as computers, software, interactive multi-media, and online resources have been shown to enhance students learning (Kadiyala & Crynes 2000). iPads present many different types of applications that incorporate copious amounts of graphics, audio, visual, or video information on any vocabulary word. In classroom settings, technology can be viewed to enhance the transmission and production of knowledge. When used appropriately, learning technologies can also aid in the organization of course material, allow for increased communication and collaboration between instructors and students, and increase access to course related material as there are fewer constraints placed by time and location (Schneckenberg 2004). This mass acceptance of a technological educational revolution has been propelled to epic proportions, where digital media and video games have been lauded on many occasions as the perfect future method to completely transform the educational environment (Gee, 2003; Kenny & McDaniel, 2011; Prensky, 2001). The iPad enriches students' learning experience in vocabulary instruction while increasing their level of engagement and motivation to learn.

CHAPTER THREE: METHODOLOGY

The purpose of this case study was to examine the effects of iPad use in students' vocabulary learning. Case studies are in-depth investigations that are gathered from a variety of sources by using several different methods (McCloud, 2008). Case studies allow the researcher to investigate a topic in further detail. The data obtained from this research were gathered through qualitative methods. The qualitative measure used were the pre and post vocabulary test developed by the researcher to assess the student's learning gains. In addition, multiple sources such as attitude survey and observations were also collected. Qualitative research also relies on data collection in a natural setting as well as providing the researcher with the opportunity to collect and analyze visual data using rich narrative language (Gay, Mills, & Airasian, 2006). Qualitative methods in this case study were essential to precisely portray the participant's experience and learning gains throughout the study. The research question, participants, setting, procedures, and analysis of the research were stated in this chapter.

Research Question

- What role will iPad use play in enhancing students' engagement with vocabulary learning?
- What role will iPad application use play in increasing students' learning gains?

Participant

The study participant of this research participated in the UCF Reading Clinic at the University of Central Florida, College of Education. This study sample was a convenient sample as students who participate in the camp attend on a volunteer basis (and are registered by their

parents). Participants will vary in terms of their reading abilities and needs. One student participated in this study for a period of three weeks (June 10th – June 28th), 30 minutes per session.

The student participating in this case study is an eight-year-old male who will be entering the third grade in the fall of 2013 at a science charter school in Central Florida. According to the parent questionnaire, the student does not show a high interest in reading and barely reads at home and only reads for school purposes. The student was previously assessed on a QRI-4 and successfully completed first grade level at an independent level. In addition, the student scored a stanine of 2 on the Peabody Picture Vocabulary test. He scored below average based on his age level. During the time of the study, the student's age was eight years and three months and his age equivalent was six years and six months. This student has clearly shown difficulty in performing on grade level for reading comprehension and vocabulary.

The tutor is another participant (a participating researcher) in this study. The tutor is currently teaching 3rd grade reading at an Orange County Public School. She graduated from the University of Central Florida with a bachelor's degree in Elementary Education and is currently pursuing a master's degree in Reading Education. The tutor will utilize an iPad during a vocabulary lesson to observe the engagement and motivational level of students and their learning gains.

Setting

This research took place during the UCF Enrichment Programs in Literacy Session held at University of Central Florida. The student worked on a one-on-one basis with a qualified tutor

at the UCF Teaching Academy for three weeks. The reading practicum is a practical, hands-on experience for graduate students in Reading Education; as part of this practicum, graduate students work closely with one to two students on a daily basis, for a period of three weeks with students who have a wide range of reading difficulties. Tutors assess tutees' needs, plan, and implement instruction that will support their needs. Sample types of instruction and support include, implementing research-based reading strategies, providing corrective reading instruction, evaluating the effectiveness of assessments, strategies, and instruction for challenged readers will be completed after the reading camp. In addition, there was constant communication between the student, school personnel, and parents about the student's reading strengths and needs.

Procedures

The Reading Clinic Protocol was modified in order to meet the study's needs. It was aligned with the standard procedures of the research and the researcher had the freedom to experiment and make pedagogical decisions based on the iPad applications used within this study.

The researcher administered an on-line pre-survey to assess students' attitudes and thoughts about vocabulary instruction (see Appendix A). The researcher introduced the iPad and how to use it, explored its features, and modeled to the student how to use the search functions; the researcher provided the student with guided practice and feedback relating to using the iPad. Next, the student completed a pre-test that was designed to assess their vocabulary knowledge from a nonfiction text called, "Cheetah Cubs," (see Appendix B). The nonfiction text was by

Ginjer L. Clarke and it was about cheetahs, their physical characteristics, habitat and life cycle. The book level was at a 3.2. The student was able to listen to the nonfiction text, “Cheetah Cubs” using an iPad application called, iBooks (see Figure 1).

The participant used the following five iPad applications during this study over a period of three weeks. The researcher selected these applications for the purpose of supporting participants’ vocabulary learning.

1. Popplet: An iPad application that allows users to visualize ideas and make connections. The participant viewed a graphic organizer previously created by the researcher, which includes visual representations of the word and definition. This graphic organizer was utilized in order to introduce vocabulary words the participant will encounter in the nonfiction text.
2. iBooks: An iPad application that allows users to select a book to read with available search options. The participant listened to the nonfiction text called, “Cheetah Cubs” (see Figure 1). The student was also able to click on any vocabulary words from the story to find vocabulary word definitions (see Figure 1).
3. Show Me: An iPad application that allows users to use an interactive whiteboard iPad application to record your voice and draw or display pictures using the Internet. The participant listened to a recording of previously selected vocabulary words and definitions from the researcher. Then, the student drew a picture that will help them to make a connection to the vocabulary word. The student’s work was saved for future viewing and review.

4. Quizlet: An iPad application that provides learning tools for students, including flashcards, study, and game modes. The participant used flashcards created by the researcher to study the vocabulary words. The participant was able to review the vocabulary word, shuffle/randomize the order of words, or listen with audio. On the same application, the participant played a vocabulary game called, “Scatter,” where the participant will be racing against the clock to drag and match vocabulary terms and definitions. In addition, the participant played a vocabulary game called; “Learn,” where the student will type in the vocabulary word using the iPad keyboard to match the definition. The participant tracked their correct/incorrect answers and retests the ones the participant missed.
5. Pictello: An iPad application where the participant is able to create visual stories and talking books. The participant created an interactive story using vocabulary words from the story, “Cheetah Cubs.”

After the student practiced using all of the above iPad applications, he re-read the nonfiction text, “Cheetah Cubs.” At the end of the study, the student participated in a vocabulary post-test (see Appendix B) to examine their learning gains and an on-line post-survey to observe their current attitude towards vocabulary instruction (see Appendix C).

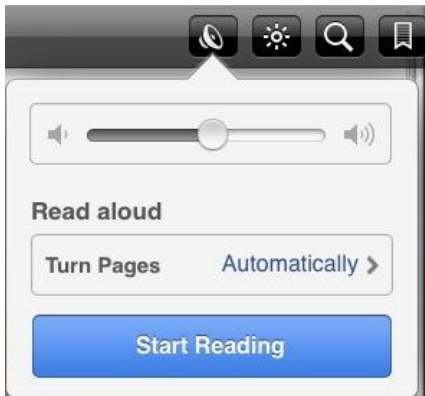


Figure 1. iBook Read-Aloud Option.

Retrieved from: iPad application, iBooks

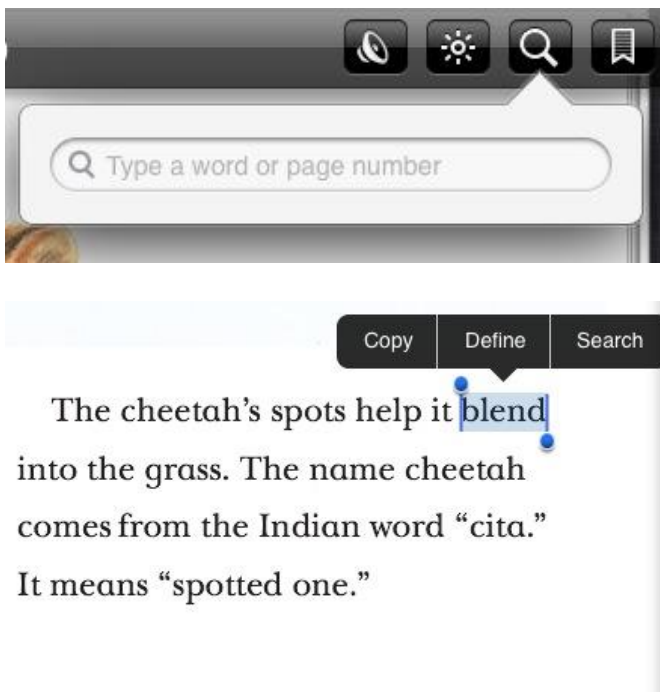


Figure 2. iBook Search Option.

Retrieved from: iPad application, iBooks

Data Collection and Analysis

An Internal Review Board (IRB) Committee Form was submitted and approved by the Office of Research of the University of Central Florida on May 30, 2013 (see Appendix D). After receiving approval, parent consent form was provided to the participant's parents to be signed. On the parent consent form, it explained the purpose, the research-methods, and issued any confidentiality concerns based on this study. A copy was made for the participant's parents and the researcher. All data were collected with the understanding that it will be accessible for this study purposes. During the research, the researcher observed the participant's behavior, attitude, and level of engagement.

CHAPTER FOUR: DATA ANALYSIS

This research used a case study research design. Case studies are in-depth investigations that are gathered from a variety of sources by using several different methods (McLeod, 2008). Within a case study, the researchers have the flexibility to select methods of data collection and analysis for their study (McLeod, 2008). Case studies provide detailed information and insight for further research. A case study method allowed the researcher to go deeper with the ways the student interacted with the iPad applications. It also allowed the researcher to closely observe and assess the student's vocabulary learning and overall engagement and motivation. A 3rd grade student voluntarily participated with parent's consent for this case study.

Stephanie Harvey, author of *Nonfiction Matters: Reading, Writing, and Research in Grades 3-8* (1998) states, "The importance of student ownership of learning and when students choose their topics and projects, engagement soars (p. 38)." Therefore, the topic on cheetahs was chosen by the participant based on his interest to focus on this study. This chapter discussed the effects of various iPad applications that enhanced the student's engagement in vocabulary learning.

The research question for this study were:

1. What role will iPad use play in enhancing students' engagement with vocabulary learning?
2. What role will iPad application use play in increasing students' learning gains?

During the three weeks, the participant participated in all five iPad applications that were introduced to him. The researcher first modeled and introduced an iPad application to help build prior knowledge and experience. The participant spent approximately 30 minutes on each iPad

application. The participant only had access to the iPad during the Reading Clinic. Before a new application was introduced, the student was able to revisit the previous application that they participated in for review purposes. Data was collected through pre and posttest, observations, surveys, and results from vocabulary games. Data analysis involved examining the information collected and finding common themes or patterns within data sources (Mills, 2003). Throughout the study, the researcher examined the data collected and analyzed the patterns in regards to the participant's engagement level and learning gains based on the research question.

Pre-Survey and Pre-Test

The participant completed a survey in order to assess the participant's current attitude towards vocabulary instruction (see Appendix A). The survey had a total of six statements/questions; four were statements and two were questions. The statements were based on a rating scale of 1-5 from strongly agree to strongly disagree. The questions were multiple select in which it allowed the students to choose more than one answer.

Based on a previous assessment, the participant scored below average based on his age level on the Peabody Picture Vocabulary Test. The participant clearly displayed a negative attitude towards vocabulary learning based on the survey results (see Figure 3), which may have been the reason why the participant scored below average based on his age level on the Peabody Picture Vocabulary Test.

“Immersing students in vocabulary-rich environments and providing instruction in words and word learning strategies can help develop greater depth and breadth of vocabulary knowledge” (Brabham, Buskist, Henderson, Paleologos, & Baugh, 2012, p. 525). Unfortunately,

the student had stated that the only vocabulary instruction he was able to identify within his classroom were through worksheets. However, he stated that he would be interested in learning vocabulary words through graphic organizers, games, and utilizing an iPad.

The participant took a pre-test on vocabulary words based on a nonfiction text called, “Cheetah Cubs” (see Appendix B). The participant took 4 minutes and 48 seconds to complete 15 vocabulary questions. He answered 1 out of 15 questions correct, which resulted in scoring a 7%. Before the pre-test, the researcher had clearly stated and explained that the participant may not be familiar with the vocabulary words presented. During the pre-test, the participant displayed a small level of anxiety due to not being familiar with the vocabulary words and definition. The participant sought out for attention and assistance, but the researcher reminded the participant that it was just to see how much he knew. He read all the questions and answers to himself while he took the pre-test. It was very clear that the participant lacked prior knowledge on the words that were presented to him.

Survey: Research Study: Vocabulary Instruction (Pre-Survey)

Respondent: Abdelwahed, Ibrahim

Question 1 (Rating scale)

I enjoy learning vocabulary words.

1 2 3 4 5
Strongly agree Strongly disagree

Question 2 (Rating scale)

I learn new vocabulary words on a daily basis in the classroom.

1 2 3 4 5
Strongly agree Strongly disagree

Question 3 (Rating scale)

I think increasing my vocabulary words are important.

1 2 3 4 5
Strongly agree Strongly disagree

Question 4 (Rating scale)

I think learning new vocabulary words will help me with reading.

1 2 3 4 5
Strongly agree Strongly disagree

Question 5 (Multiple select)

Which methods do I use in the classroom to learn new vocabulary words?

- worksheets
- graphic organizers
- projects
- games
- dictionary and thesaurus
- computer
- iPads

Question 6 (Multiple select)

Which methods do I want to participate in to learn new vocabulary words?

- worksheets
- graphic organizers
- projects
- games
- dictionary and thesaurus
- computer
- iPads

Figure 3. Pre-Survey.

Retrieved from: <http://www.quia.com/sv/622897.html>

iPad Applications

Prior to a new iPad application, the researcher introduced the application and how to use it, explore its features, and modeled to the student how to correctly use all the available features; the researcher provided the student with guided practice and feedback. The time frame the student used the iPad applications was a total of 30 minutes per day.

Popplet

Popplet is an iPad application that allows users to visualize ideas and make connections. Teachers and students can create graphic organizers, timelines, and many other forms of visual organization. It is also a collaborative brainstorming tool and an effective presentation tool.

On the first day of week one, the researcher introduced the vocabulary words and had an active discussion with the participant based on the definitions and pictures before reading the nonfiction (see Figure 4). The researcher attempted throughout the discussion to activate prior knowledge and make personal connections to the participant. The participant instantly recognized a few of the vocabulary words from the pre-test. He enjoyed looking at the pictures, and it enabled the student to create a deeper understanding of the word. Throughout week one, this graphic organizer was used as a reference to review words by the researcher.

and looked up the definition using a search option (see Figure 2). The participant also utilized the dictionary option to listen to pronunciation of words. Kucan states that “Utilizing a dictionary with rich lexical ambiance are essential resources for students” (p. 342).

Engagement also encourages children to become curious about words (Devries, 2012). The participant was fully engaged within the story and displayed excitement to learn about cheetahs. Within the story, there were questions asked for the reader to point and find the cheetahs. The participant actively participated and responded to every question presented. Furthermore, he was very intrigued by the illustrations presented in the nonfiction text. “App developers and publishing houses are exploring possibilities for drawing readers into books by integrating high-impact illustrations and photographs, providing engaging interactive elements, and adding interest text” (Potter & Scheuer, 2013, p. 12).

ShowMe

Showme is an interactive whiteboard iPad application that allows you to record your voice and draw or display pictures using the Internet (see Figure 5). It can be used to easily explain a wide range of topics and can be shared online. Features include: voice-record, multiple brush colors, pause and erase, import pictures from your photo library, built-in camera, or web image search, unlimited lesson length, free to upload, and easy to share anywhere.

During week one, the participant recorded the definition of the vocabulary words and drew a picture that made a connection to the word. The participant showed excitement and was actively engaged. He was constantly giggling and enjoyed listening to his recordings and drawings. Prior to working on this application, the participant drew similar pictures he had

encountered using the Popplet application and illustrations he saw on the nonfiction text, “Cheetah Cubs.” The individual knower, through an interaction between what is already known, constructs knowledge and new experience (Edwards & Westgate, 1994). The two iPad applications that the participant was exposed to allowed the student to build his background knowledge.

When students feel a sense of ownership, they want to engage in academic tasks and persist in learning and it allows students to develop a sense of responsibility and self-motivation (McCombs, 2013). After he was completed with his words, he wanted to constantly review his work. He demonstrated ownership by insisting the researcher to show his work to his mother. The participant was very proud of his work.



Figure 5. ShowMe.

Retrieved from: iPad Application ShowMe

Quizlet

Quizlet is an iPad application that provides learning tools for students, including flashcards, study, and game modes. During week two, the participant reviewed his work on Show Me before participating on the Quizlet application. Then the participant worked on flashcards and the two game options of Scatter and Learn.

The researcher had previously created a set a vocabulary words based on the story, “Cheetah Cubs.” The participant had to review his flashcards before participating in the two game options that were offered: Scatter and Learn. The flashcard study tool allowed the participant to review the vocabulary word and definition on a flashcard display (see Figure 6). It also allowed the participant to shuffle/randomize the words and listen with audio. When the participant displayed difficulty of remembering the definitions, the researcher allowed the participant to view the flashcards multiple times until he felt comfortable. The participant was in full control of the flashcards. He flipped the card to view the word or definition and went to the next word at his own pace. The participant displayed a steady level of engagement when viewing the vocabulary words on flashcards.

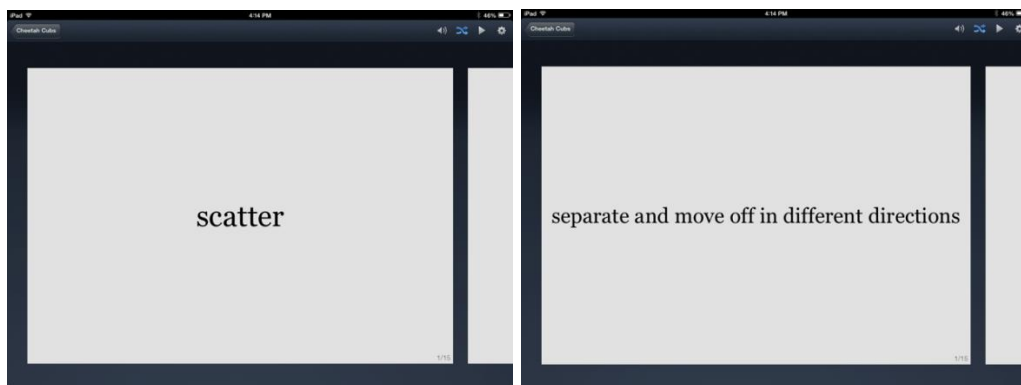


Figure 6. Flashcards.

Retrieved from: iPad Application- Quizlet

The “Scatter” game allowed the participant to race against the clock to drag and match the vocabulary word and definition as quickly as possible (see Figure 7). The participant displayed apprehension when he was aware that he was competing against the clock. At first, he asked for assistance right away when he was not able to drag and find the correct word to the definition. The participant’s first time of completion was at 13 minutes and 56 seconds.

Throughout his attempts, the participant showed frustration and a sense of defeat at times. In response to his frustration, he often said things like, “I’m never going to beat my time.” When the participant successfully beat his previous time, he often clapped or gave the researcher a high-five. During this activity, the participant sat on the edge of his seat and his eyes never left the iPad when interacting with this game. Furthermore, he displayed a level of competitiveness in order to beat his previous time of completion. When he was not able to beat his previous time, he asked the researcher if he was able to try it again.

By the end of week two, the participant was quickly able to verbally match the vocabulary word to the definition, but every now and then he had difficulty locating either the word or the definition, which caused him to increase his time of completion. This slightly irritated the participant, but he maintained a positive attitude. Throughout the activity, the participant displayed a high level of motivation and determination.

Cheetah Cubs 1.3			
combining things together	a small hill	blend	den
prey	a long, high-pitched cry or noise	scatter	separate and move off in different directions
a wild animal's home	mate	predators	an animal that that is hunted
pair of birds or other animals	an animal that catches another animal	mound	squeal

Figure 7. Scatter.

Retrieved from: iPad application Scatter

The researcher observed the participants' level of motivation by examining how the participant was engaged and motivated during the activity. The participant displayed many different body language, facial expressions, and positive responses. The researcher recorded the participant's attempts and completed time on a chart (see Figure 8). The participant attempted "Scatter" a total of 20 times. By the end of week two, the participant's best time was at 3 minutes and 2 seconds. The participant felt very accomplished and immediately wanted to share this information with his brothers that were also participating in the reading clinic.

Attempt	Time
1	13:56
2	13:06
3	11:10
4	12:01
5	11:59
6	09:40
7	10:01
8	10:00
9	08:56
10	08:03
11	07:45
12	07:01
13	06:50
14	06:01
15	04:50
16	04:51
17	04:32
18	03:20
19	03:02
20	03:05

Figure 8. Scatter Game Results.

Retrieved from: iPad Application Quizlet

The “Learn” game allowed the participant to type in the word using the iPad keyboard to match the definition (see Figure 9). It also allowed them to track their correct/incorrect answers and retest the ones that they had missed. The first few attempts, the participant had difficulty typing in the words due to being unfamiliar with the keyboard and spelling. The researcher had to provide assistance with identifying the location of the letter on the keyboard and spelling. When the participant was incorrect, he often made verbal responses like, “Oh no, I knew this one!” Towards the end of week two, he gradually was able to identify the letters on the keyboard faster than before and was able to spell each vocabulary word correctly with little to no assistance provided by the researcher. By the end of week two, the participant mastered all 15-vocabulary words with 100% accuracy on the “Learn” game.

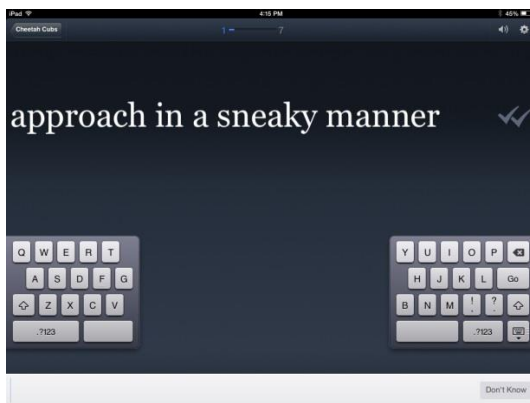


Figure 9. Learn.

Retrieved from: iPad Application Quizlet

On the third day of week two, the participant realized the importance of studying his flashcards. He made a connection that in order to beat his time on the “Scatter” game and master all the vocabulary words on the “Learn” game, he would have to study his flashcards. The participant frequently wanted to review his flashcards after he was not able to beat his previous

time on “Scatter” or mastered his vocabulary words on “Learn.” Multiple encounters with words are often necessary for students to truly own them and that students must have opportunities to interact with many words on many occasions (Wilcox & Morrison, 2013). As a result, the participant has shown mastery in all of his words. Towards the end of week two, he scored his best time on “Scatter” and mastered all of his vocabulary words on “Learn” with 100% accuracy.

Pictello

Pictello is an iPad application where the participant is able to create visual stories and talking books. Each page in a Pictello Story can contain a picture, a short video, and a recorded sound or text-to-speech using natural sounding voices. During week three, the participant was able to create a story using his vocabulary words (see Figure 10). The researcher assisted the participant to find appropriate pictures to match the vocabulary word on the internet. The participant showed enthusiasm when he was provided the opportunity to create an interactive book.

Before the researcher provided instructions, the participant immediately asked, “Can we write a story on Cheetahs?” He had displayed an increased interest in the topic of cheetahs and was also able to successfully write sentences based on cheetahs using the 15 vocabulary words that were provided previously. He was able to write his own sentences with little to no help from the researcher. The participant asked if the researcher would be able to provide a copy of his story to show his parents. The researcher was able to informally assess the participant’s knowledge on the vocabulary definitions by observing the participant correctly writing it in a sentence.

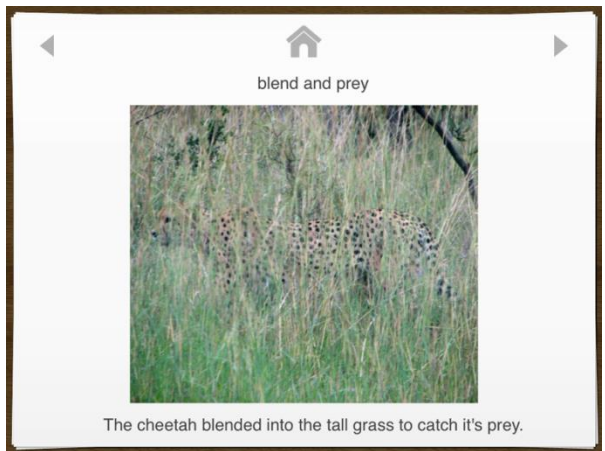
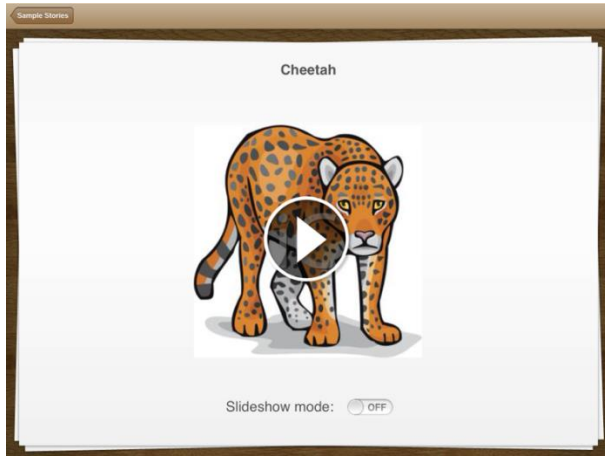


Figure 10. Pictello.

Retrieved from: iPad Application Pictello

Post-Survey and Post-Test

The results of the pre and post survey were drastically different (see Table 1). Towards the end of study, the participant had shown enthusiasm and positive attitude towards learning vocabulary (see Figure 11). In addition, he mentioned that he would be excited to use an iPad for future use in the classroom as a method to learn new vocabulary words.

Throughout the study, the participant displayed a high level of engagement, motivation, and competitiveness. The participant often sat on the edge of his seat when he wanted to defeat his previous time or receive a 100% on an activity. Although, there may have been distractions in the research environment, the participant never took his eyes off the iPad. His level of motivation drastically increased when he set a higher goal to either beat his previous time on a game and when he wanted to receive a 100% on his post-test. He showed determination by asking the researcher if he was able to try again when he did not feel satisfied with his results. When the participant was successful, he often shouted out, “Yes!” and clapped.

Before the participant took the post-test, he stated with confidence that he was going to receive a 100%. The participant received a 100% on his post-test and it took him 7 minutes and 36 seconds to complete. Compared to his pre-test, it took the participant 2 minutes and 48 seconds longer. During the post-test, the participant seemed to demonstrate drastic increase in his focus compared to his pre-test. This may have been because the participant was now familiar of all the vocabulary words and definitions presented on the test. In addition, he was very alert when he answered the questions, keeping in mind his goal of scoring a 100%. The participant showed determination and the eagerness to reach his goal.

Survey: Research Study: Vocabulary Instruction (Post-Survey)

Respondent: Abdelwahed, Ibrahim

Question 1 (Rating scale)

I enjoy learning vocabulary words.

1 2 3 4 5

Strongly agree Strongly disagree

Question 2 (Rating scale)

I think increasing my vocabulary words are important.

1 2 3 4 5

Strongly agree Strongly disagree

Question 3 (Rating scale)

I think learning new vocabulary words will help me with reading.

1 2 3 4 5

Strongly agree Strongly disagree

Question 4 (Rating scale)

I learned new vocabulary words from this activity.

1 2 3 4 5

Strongly agree Strongly disagree

Question 5 (Rating scale)

This vocabulary activity kept my attention throughout the lesson.

1 2 3 4 5

Strongly agree Strongly disagree

Question 6 (Yes-no)

I would be excited to use an iPad in the classroom to learn new vocabulary words.

Yes

No

Figure 11. Post Survey.

Retrieved from: <http://www.quia.com/quiz/4282577.html>

Table 1:

Pre- and Post-Test Results

Question	Pre-Test	Post-Test
1	0%	100%
2	0%	100%
3	0%	100%
4	0%	100%
5	0%	100%
6	100%	100%
7	0%	100%
8	0%	100%
9	0%	100%
10	0%	100%
11	0%	100%
12	0%	100%
13	0%	100%
14	0%	100%
15	0%	100%
Total	7%	100%

Retrieved from: <http://www.quia.com/quiz/4282577.html>

Summary

The purpose of this case study was to observe how utilizing iPads could enhance a student's engagement level in vocabulary learning, resulting in making learning gains. On the first survey, the participant clearly indicated that he did not enjoy learning vocabulary words and the only activity he was able to identify for vocabulary instruction within the classroom were worksheets. Analysis of the data revealed that the student's attitude towards learning vocabulary words had changed positively by the end of the study. On the pre-test, the participant answered 1 out of 15 questions correctly: whereas, on the post-test, the participant answered 15 out of 15 questions correctly. The participant had clearly shown tremendous gains utilizing iPad applications, which improved his learning.

Analysis of pre- and post-test, and survey data, and analysis of observation data showed that utilizing the five iPad applications (i.e., iBooks, Popplet, ShowMe, Quizlet, and Pictello) in this case study- resulted (a) in increased student engagement with vocabulary learning, and (b) in improved student learning.

CHAPTER FIVE: CONCLUSIONS

Based on numerous research studies, we know that there is a high correlation between comprehension and vocabulary. As Stahl and Stahl (2004) pointed out, “All words are not valued equally. Instead, what we want children to learn is the language of school. For many children, this is a foreign language” (p.6) The National Center for Education Statistics (2012) affirms the crucial link between the words students know and students’ ability to use those words to understand what they read.

There has been copious amount of research that has called for an urgent need for vocabulary instruction in the classroom. “Given the number of children can acquire, we content that limiting vocabulary instruction to teaching few words each week fails to capitalize on human language potential and may deprive all children of opportunities to develop robust vocabularies” (Brabham, Buskist, Henderson, Paleologos, & Baugh, 2012, p. 525). Many teachers often feel that there are so many words to teach and so little time to teach them. Vocabulary knowledge has an influence on students’ success, but teachers have a tendency to disregard its critical place within the curriculum. The main purpose of this case study was to analyze the effects of utilizing iPads as an instructional tool to see to explore a student’s engagement in vocabulary learning.

As the study proceeded, I became progressively aware on the importance of vocabulary instruction within the classroom and gained first-hand knowledge about effective ways to utilize e-readers to promote students’ engagement with vocabulary learning. I introduced and carefully chose iPad applications that would enhance the participant’s learning in vocabulary. Data were collected through a pre- and post-test, surveys, game results, and observations. The collection of data were over a three-week period provided me with rich data about how an iPad can be used

as an effective instructional and learning tool to enhance student's engagement in vocabulary learning.

As the researcher, I made myself approachable and available for the participant to have open and continuous dialogue with me during the study. It was essential that the participant felt comfortable throughout the process. Although, I constantly took notes while observing my participant, he did not show any signs of discomfort or curiosity about what I was writing. There was an obvious sense of trust and respect between the researcher and participant.

Conclusions

This case study took place at a Reading Clinic at the University of Central Florida's College of Education. Based on my analysis of collected data, I offered cautious conclusions as they related to the research question.

Research Question:

- What role will iPad use play in enhancing students' engagement with vocabulary learning?
- What role will iPad application use play in increasing students' learning gains?

The surveys, pre- and post-tests, game results, and observations revealed that iPads could be utilized as an effective tool to enhance students' engagement with vocabulary learning. In the beginning of the case study, the participant stated that he did not feel that vocabulary instruction was important. He often spoke negatively about learning new vocabulary words and also stated that the only vocabulary instruction he was able to identify within his classroom were worksheets. At first, it made me wonder if the participant's overall attitude towards vocabulary

learning was due to the lack of differentiated instruction provided within his classroom. Beverly A. DeVries (2012) stated that, “Using a variety of strategies keeps vocabulary building interesting because students become bored when they do the same activity over and over again.” “It is also essential that teachers pique students’ interests in words so they will enjoy learning new words and use them to comprehend texts and to use in their writing and conversation” (p. 4).

Researchers investigating the role of iPads in a paperless classroom asserted that the iPad is a true mobile learning device, not simply a novelty (Miller, Meier, & Moorefield-Lang, 2012). iPads are changing how they can be utilized in the classroom. The iPads allow students to gain deeper insight into their learning experience. Information is easily accessible and increases level of engagement with the different educational applications that it offers. Throughout the entire case study, the participant showed a high level of engagement and also exhibited determination and motivation. For every new iPad application I introduced to the participant, I modeled and also offered him an opportunity to explore and control his own learning.

“Understanding the protean nature of vocabulary, our goals include not only creating great swells of vocabulary words for teaching, but also fostering readers’ fascination for learning more about the breadth and depth of words and language on their own” (Perfetti & Hart, 2002, p. 359). Throughout the study, he was able to self-regulate and self-monitor his own learning by being in control of the iPad with assistance from the researcher. Furthermore, the participant also had many opportunities to show ownership of his work, which not only increased his level of engagement, but the motivation to want to try new iPad applications. Through interactive read aloud and other literature experiences, teachers can introduce new words and then solidity

to expand those meanings by providing follow up activities such as graphic organizers, interactive resources, or iPad applications.

The participant had also shown an increased interest in learning more about cheetahs. During the reading clinic, the participant consistently asked if there were more nonfiction text on cheetahs for him to read at home. Due to the lack of books offered at the curriculum center on cheetahs, I downloaded extra nonfiction text about cheetahs on iBooks. I noticed that he enjoyed reading books about cheetahs because he had built his background knowledge through first learning the vocabulary words. In all the extra nonfiction text we read on cheetahs, we had encountered the vocabulary words that were specifically chosen for this study. The participant would quickly identify the vocabulary word and without thinking he would state the definition. He was able to better comprehend the text due to being familiar with the vocabulary words. When he encountered a word that he did not comprehend, he would ask if he could use the dictionary app in order to find the definition. The participant gradually became more and more independent of his own learning, due to the knowledge of different iPad applications he was now aware of. Perfetti (2007) suggest that as experiences with words accumulate, a learner builds abstracted representations of word meanings. “Representations that are based on a rich network of connections built from experiencing words in multiple, informative contexts will likely be complex, flexible, and nuanced, allowing the learner to bring the most relevant connections to bear to help understand newly encountered contexts” (Perfetti, 2007, p. 380). At the rate of how technology seems to drastically change every day, it would be irresponsible for teachers to ignore the ways in which the mobile environment is changing teaching, learning, and professional expectations of students.

Methodological Limitations

The case study focused on one participant, a 3rd grade student. This study used a convenient sample, which limited the types of participants who could participate in a study. Also, the researcher did not have any control over the representativeness of the sample. Based on these limitations, I would recommend that more research should occur with a larger group of students. In addition, the results of this case study cannot be generalized to the wider population. The results of the study are not generalizable because we can never know whether the case investigated is representative of the wider body of similar instances (McLeod, 2008). Since the data is qualitative, the researcher could have had subjective feelings that may have influenced the case study. In addition, the participant had no prior experience with an iPad and he was also not familiar with the iPad keyboard and required assistance with how to use it during the study.

Implications

Utilizing an iPad to support student learning within the classroom can equip the classroom teacher to make creative and sound technological, pedagogical, and content decisions. A student-centered classroom requires different types of instructional decisions, teacher facilitation of student learning, much planning, students who play an active role in the learning process, and teacher-to-teacher collaboration, especially as it relates to technology. Ipads can effective be used to increase student engagement and motivation with learning. The use of technology within the classroom will and can support student learning if the teacher is willing to experiment with new tools and technologies and is he or she has a disposition toward finding new ways to differentiate and support students' needs. It is essential that teachers are aware of

the available resources and interactive activities that will allow teachers to be creative and effective on a daily basis. Both teachers and students should familiarize, utilize, and integrate technology within the classroom. When teachers utilize an iPad, they can present information from multiple perspectives, which in turn, can increase the durability of instruction. iPad use also allows students to actively process the lesson content. Lastly, the iPad is an effective instructional and learning tool that can be utilized in meaningful and authentic ways to build upon students' knowledge and experiences.

Recommendations

After conducting the research for this case study, I recognized a need for more professional development and workshops in utilizing iPad applications within the classroom. Many teachers are unaware of the possibilities of utilizing iPads as an effective tool. If teachers struggle with having time for vocabulary instruction, utilizing an iPad would enable students to be able to self-regulate and self-monitor their own vocabulary learning. App developers are constantly exploring opportunities for teachers and students to explore possibilities for drawing readers into books by integrating high impact illustrations and photographs. In addition, app developers are also providing engaging interactive applications offered for students. iPads are changing the way of how teachers teach and how students learn. Teachers, librarians, and other educators need to experiment with different applications. Even if the school does not have many iPads, teachers should still recommend iPad applications for both students and parents. As our schools are shifting towards the Common Core State Standards, we must consider additional ways for successfully engaging students in vocabulary learning.

APPENDIX A: PRE-SURVEY

1. I enjoy learning vocabulary words.

1 2 3 4 5

Strongly agree Strongly disagree

2. I learn new vocabulary words on a daily basis in the classroom.

1 2 3 4 5

Strongly agree Strongly disagree

3. I think increasing my vocabulary words are important.

1 2 3 4 5

Strongly agree Strongly disagree

4. I think learning new vocabulary words will help me with reading.

1 2 3 4 5

Strongly agree Strongly disagree

5. Which methods do I use in the classroom to learn new vocabulary words?

- worksheets
- graphic organizers
- projects
- games
- dictionary and thesaurus
- computer
- iPads

6. Which methods do I want to participate in to learn new vocabulary words?

- worksheets
- graphic organizers
- projects
- games
- dictionary and thesaurus
- computer
- iPads

APPENDIX B: VOCABULARY TEST

Cheetah Cubs

1. What is the definition of the word den? (1 point)
 - Long fur around neck
 - A small hill
 - A wild animals home
 - Put or combine natural things together
 - A large group of animals
2. What is the definition of the word arch? (1 point)
 - Long fur around neck
 - Curved shape
 - An animal that catches another animal
 - Pursue or approach in a sneaky manner
 - Separate and move off quickly in different directions
3. What is the definition of the word mound? (1 point)
 - Put or combine natural things together
 - A small hill
 - A wild animals home
 - A large group of animals
 - An animal that catches another animal
4. What is the definition of the word prey? (1 point)
 - An animal that is being hunted
 - Pursue or approach in a sneaky manner
 - Comfortable, warm, and cozy
 - An animal that catches another animal

- A wild animals home
5. What is the definition of the word predator? (1 point)
- An animal that is being hunted
 - Long fur around neck
 - Pair of birds or other animals
 - Pursue or approach in a sneaky manner
 - An animal that catches another animal
6. What is the definition of the word snugly? (1 point)
- Pair of birds or other animals
 - Comfortable, warm, and cozy
 - A wild animals home
 - A long, high-pitched cry or noise
 - A large group of animals
7. What is the definition of the word squeal? (1 point)
- The spine
 - Separate and move off quickly in different directions
 - Pursue or approach in a sneaky manner
 - An animal that is being hunted
 - A long, high-pitched cry or noise
8. What is the definition of the word blend? (1 point)
- Put or combine natural things together
 - Long fur around neck
 - Curved shape
 - Pursue or approach in a sneaky manner
 - Separate and move off quickly in different directions

9. What is the definition of the word balance? (1 point)
- Pair of birds or other animals
 - Put or combine natural things together
 - Long fur around neck
 - Curved shape
 - To remain upright and steady
10. What is the definition of the word mantle? (1 point)
- A large group of animals
 - Long fur around neck
 - A long, high-pitched cry or noise
 - Put or combine natural things together
 - A small hill
11. What is the definition of the word scatter? (1 point)
- A long, high-pitched cry or noise
 - Pursue or approach in a sneaky manner
 - A large group of animals
 - Separate and move off quickly in different directions
 - To remain upright and steady
12. What is the definition of the word stalk? (1 point)
- An animal that is being hunted
 - The spine
 - Comfortable, warm, and cozy
 - Pair of birds or other animals
 - Pursue or approach in a sneaky manner
13. What is the definition of the word herd? (1 point)

- A long, high-pitched cry or noise
- A large group of animals
- To remain upright and steady
- Separate and move off quickly in different directions
- A small hill

14. What is the definition of the word backbone? (1 point)

- The spine
- A long, high-pitched cry or noise
- A small hill
- A wild animals home
- Put or combine natural things together

15. What is the definition of the word mate? (1 point)

- An animal that is being hunted
- Comfortable, warm, and cozy
- Pair of birds or other animals
- To remain upright and steady
- The spine

APPENDIX C: POST-SURVEY

1. I enjoy learning vocabulary words.

1 2 3 4 5

Strongly agree **Strongly disagree**

2. I think increasing my vocabulary words are important.

1 2 3 4 5

Strongly agree **Strongly disagree**

3. I think learning new vocabulary words will help me with reading.

1 2 3 4 5

Strongly agree **Strongly disagree**

4. I learned new vocabulary words from this activity.

1 2 3 4 5

Strongly agree **Strongly disagree**

5. This vocabulary activity kept my attention throughout the lesson.

1 2 3 4 5

Strongly agree **Strongly disagree**

6. I would be excited to use an iPad in the classroom to learn new vocabulary words.

Yes

No

APPENDIX D: IRB APPROVAL LETTER



University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Human Research

From: UCF Institutional Review Board #1
FWA00000351, IRB00001138
To: Sarah Park
Date: May 30, 2013

Dear Researcher:

On 5/30/2013, the IRB approved the following human participant research until 5/29/2014 inclusive:

Type of Review: UCF Initial Review Submission Form
Project Title: Utilizing iPads to Engage Students in Vocabulary Instruction
Investigator: Sarah Park
IRB Number: SBE-13-09399
Funding Agency:
Grant Title:
Research ID: N/A

The scientific merit of the research was considered during the IRB review. The Continuing Review Application must be submitted 30 days prior to the expiration date for studies that were previously expedited, and 60 days prior to the expiration date for research that was previously reviewed at a convened meeting. Do not make changes to the study (i.e., protocol, methodology, consent form, personnel, site, etc.) before obtaining IRB approval. A Modification Form cannot be used to extend the approval period of a study. All forms may be completed and submitted online at <https://iris.research.ucf.edu>.

If continuing review approval is not granted before the expiration date of 5/29/2014, approval of this research expires on that date. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

Use of the approved, stamped consent document(s) is required. The new form supersedes all previous versions, which are now invalid for further use. Only approved investigators (or other approved key study personnel) may solicit consent for research participation. Participants or their representatives must receive a copy of the consent form(s).

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewska, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 05/30/2013 02:48:40 PM EDT

IRB Coordinator

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