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# The Implementation of the iPad In Reading Instruction

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# The Implementation of the iPad In Reading Instruction

## Abstract

This research paper explores the implementation of the iPad into reading instruction, specifically, how do teachers use the iPad to facilitate reading instruction in middle school classrooms? Examining the implementation of the iPad in the classroom will provide insight into possible benefits, including increasing student engagement and reading comprehension. Students from one fifth grade and one sixth grade classroom were observed, interviewed and assessed after using the iPad in their daily reading instruction. The study resulted in inconclusive gains in comprehension and increased student engagement. The implementation of the iPad provides several opportunities for teachers to create interactive learning experiences that can be meaningful to all students and assist them in improving their literary skills.

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Abstract

This research paper explores the implementation of the iPad into reading instruction, specifically, how do teachers use the iPad to facilitate reading instruction in middle school classrooms? Examining the implementation of the iPad in the classroom will provide insight into possible benefits, including increasing student engagement and reading comprehension. Students from one fifth grade and one sixth grade classroom were observed, interviewed and assessed after using the iPad in their daily reading instruction. The study resulted in inconclusive gains in comprehension and increased student engagement. The implementation of the iPad provides several opportunities for teachers to create interactive learning experiences that can be meaningful to all students and assist them in improving their literary skills.

**The Implementation of the iPad in Reading Instruction**

The use of technology in the classroom provides opportunities for students to gain understanding through an engaging and hands-on approach.  It is important for teachers to be both consumers of technology and producers of instructional technology. Teachers need to develop knowledge and skills to analyze technology appropriate for instruction in the classroom. Implementing technology into daily instruction will provide an interactive learning environment for all students.  According to Lee and Vail (2005), implementing technology into the classroom on a daily basis helps children to become more engaged in the learning experience and will in turn participate more regularly helping to create an interaction among all classroom participants.

Students today are digital natives; they are accustomed to the use and manipulation of several high functioning technologies that offer countless applications and software.  More and more classrooms are implementing new technologies into everyday instruction and making them readily available for student use.  Some technologies that are often found in classrooms today include SMART boards, iPods, MP3 players, Elmo projectors, and laptops.  Educational technologies are gaining a greater value and presence in classroom activities, which is helping teachers and students to become more comfortable with their use.  The use of these technologies helps to create engaging and interactive lessons that promote student participation.  Depriving students of a variety of technologies within the classroom will hurt their learning experience.

Specifically, the use of an Apple iPad in the classroom can open up new opportunities for exploring literacy.  The iPad offers several applications that can be beneficial to students' learning experiences related to reading instruction.  The applications can be used to enhance different texts being read in the classroom, provide resources for understanding the material further or for extending and assessing reading comprehension.  The iPad can also be used to

access e-books, which will provide students with a multimodal reading experience that will

engage them with animation and sound.  This research study will examine how teachers use the

iPad in reading instruction.  Examining the implementation of the iPad in the classroom will

provide insight into possible benefits, including increasing student engagement and reading

comprehension.  Implementing new technologies in the classroom will provide further

opportunities for students to interact with each other and participate in classroom activities.

Specific applications and activities will be examined throughout this study.

The purpose of this study was to evaluate the effects of the implementation of the iPad

into daily reading instruction.  Based on the new literacies theory, the use of technology in the

classroom promotes a student-centered environment, in which students can become more

actively engaged and involved in the learning process.  Through the use of the iPad,

comprehension assessments, student observation, questionnaires and interviews, it was found

that the use of the iPad increased student engagement and interest during daily lessons and

activities.  The majority of students also improved their comprehension of the material following

the use of the iPad.

**Theoretical Framework**

Literacy is the foundation for all learning.  It is the process to which we learn and expand

skills for reading, writing, speaking, listening, and thinking. Literacy changes in the different

ways that we as individuals decide to use it within the different communities to which we

belong.  Our backgrounds and cultures affect our knowledge and use of literacy (Gee, 2001;

Goodman, 2001; Heath, 1982; Larson & Marsh, 2005; Mays, 2008; Meier, 2003).  Literacy

includes critical thinking, questioning, the use of technology, participation, exploring texts and applying what we know to the study of new topics.

Gee (2001) argues that literacy is developed through and by the different discourses to which we belong. Literacy is found everywhere in our everyday lives, even before we enter school. The time that children spend with their families before they begin school is just as crucial to learning different aspects of literacy as when they enter school. There is a lot that children can learn from their surroundings and community that will shape the way they view and approach topics in school and in their future. Increasingly today's children are very engaged in using many electronic devices well before the beginning of their formal schooling. They begin school with a high comfort level around electronics and may find a lack of electronics in the school setting stranger than their presence. With this in mind, the use of an iPad, though possibly a new device for many students, may seem more natural to the student than to his or her teacher.

Larson and Marsh (2005) define literacy as a set of social practices that are linked to cultural understandings within school and outside of school. Larson and Marsh (2005) state that, "literacy is not just reading and writing English text but it is multimodal within different contexts" (p. 21). Literacy is very complex and our uses and understandings of literacy are constantly changing with time.

Gee (2001) discusses what it means to acquire different types of information and skills relating to language through our life experiences. Acquisition, defined by Gee (2001), is "a process of acquiring something subconsciously by exposure to models and a process of trial and error, without a process of formal teaching" (p. 20). When we acquire knowledge, it is often

through observation of people around us who are modeling certain behaviors, techniques and skills.

When children begin exploring the language and elements of literacy that are around them, there are many factors that begin to influence their acquisition and learning.  One of the influential factors is the different structures of language.  These structures include pragmatics, syntaxes, semantics, morphemes, orthographic, and graphophonemics.  Children first learn about the different structures of language as they learn to speak.  Adults are constantly modeling how we use oral language and what types of words need to be included in a sentence in order to have a complete thought.  It is usually not until children enter school and begin to read that they begin to attach names to types of words and learn the parts of a sentence (ex. verb, noun, adjective, etc.).  The major components of reading also impact our understanding of literacy and literacy acquisition. We acquire phonemic awareness by hearing language used by people around us. The way people in our families and in our communities use language will most likely determine the way young children begin to use language and develop a foundation for oral language.  The same goes for vocabulary and background knowledge upon entering school. The iPad is built with a similar focus on visual and audio capabilities and can use both simultaneously, only limited by the application developer's imagination.

The sociocultural theory addresses instructional approaches related to the whole group making learning purposeful and meaningful to all students (Gee, 2001; Goodman, 2001; Heath, 1982; Larson & Marsh, 2005; Mays, 2008; Meier, 2003).  Teachers who teach according to this theory can help students achieve by using students' primary discourse within instruction (Gee, 2001), exposing students to academic discourse (Delpit, 2001; Meier, 2003; Larson & Marsh, 2005), producing authentic and meaningful instruction (Gatto from Larson & Marsh, 2005), and

providing opportunities for talking by the students within the classroom.  Many students today have a primary discourse that is developed around the use of technology.  By relating classroom activities to students' primary discourse through the use of technology, it will help to make lessons more engaging and meaningful to students.

The major tenet of the sociocultural theory is constructing a classroom in which the child is an active member.  The sociocultural theory acknowledges that children are active members within their own community that may be constantly changing by different cultural systems.  It is important for teachers to be aware of the multiple groups their students may belong to and make them relevant in the classroom.  A shift from the traditional teacher-centered or student-centered classroom to classrooms that are learning-centered is evident.  These types of classrooms allow students to contribute their ideas using their various cultural tools and learn from one another. The iPad has many applications that are designed to be used individually, collaboratively, or competitively (i.e. games) and can be shared between students as in the case of the podcast study (Vasinda & McLeod, 2011).

In creating a learning environment that promotes active learners, several types of technologies are being used to create engaging instruction.  According to Sheridan (1997), "a technological society requires visual literacy skills as well as verbal. This combination of visual and verbal skills, or the ability to produce image as well as text, is 'the new literacy'" (p. 3). New literacies theory is similar to new literacy studies in that it looks at literacy learning within a social community but is based around technology and a participatory culture.  Baron (2001) discusses the development and changes of different technologies over time and how they have affected literacy.  He examines the historical aspects and implications of different technologies in the classroom.  Baron explains oral and written language as both holding different and

sometimes similar characteristics that influence the way that we communicate and use

technology to represent and assist language.  Using technology in the classroom can create

multiple opportunities for students to communicate with their peers and teachers.  Technology

can expand the way that children use oral and written language through interaction with others.

There are many different applications and websites that offer online discussion boards and chats

that can be implemented into the curriculum for discussing subject topics.  Implementing and

adapting technology for the use of conversation will in turn generate a new type of literacy in

which students continue to use and expand their language.

Based on the meaning of literacy and the process as to which people acquire literacy,

there are many elements that must occur within literacy instruction.  The elements within literacy

instruction include providing opportunities for students to participate, practice and experiment

with literacy.  The classroom setting should be interactive amongst the students and the teachers.

Teachers need to provide opportunities for students to express their own opinions and explore

topics that are relevant and important to their lives.  To assist in creating an open and interactive

learning environment, teachers need to expose students to a variety of texts in the classroom that

can lead to discussions of different worldviews.  Before students can appreciate the meanings of

texts, teachers have to help students to become active learners and take control of their learning

process.  The implementation of technology in reading instruction can help to create active

learners.

## Research Question

In order to create a student-centered environment, teachers need to promote students as

active learners within the classroom.  In order to create a participatory culture that is based

around technology, as in the new literacies theory, teachers need to implement new technologies

that will enhance daily instruction and further encourage students to participate.  Therefore, this

action research asks, how do teachers use the iPad in middle school to facilitate reading

instruction?

## Literature Review

The following literature represents some of the most current research, dialogue and

discussion in the very new field of interest of integrating technology into the classroom;

specifically in this case, using the iPad as the tool of choice.  I explore whether the iPad provides

increased opportunities for students to engage in hands-on learning experiences.  In order to

create an environment that enhances reading ability, student collaboration and engagement,

teachers need to implement multiple resources into daily instruction.  Finally, there will be a

discussion of literature that deals with some of the specific uses of the iPad in the classroom and

demonstrate several instances of iPad use that have been shown to achieve results that support

the objectives of increased student performance and increased student engagement, for all

students including struggling readers and students with disabilities.

### Implementation of Technology in the Classroom

There are many ways in which technology can be implemented into the classroom.

Technology can be used to enhance instruction, facilitate student/class work or assist struggling

students.  Teachers are challenged to find ways that "information and communication

technologies" can be included in classroom curriculum and context (Kervin & Mantei, 2010).

Kervin and Mantei's (2010) study of pedagogical framework related to technology supports

teachers in exploring new ways for implementing new technologies into their existing literacy

practices.  The study included four sets of participants, one set included seven classroom

teachers, a literacy support teacher and the principal; the second set included 10 classroom

teachers, a literacy coordinator, and an academic partner; the third set included one classroom

teacher, 24 fourth grade students and an academic partner; and the fourth set included one

classroom teacher and a focus group of four eighth grade students.  Kervin and Mantei (2010)

state that the purpose in implementing technology within the existing literacy practices of each

teacher creates "projects that are participatory, collaborative and systematic, which will result in

communities working together for shared understandings and action"  (p. 53).

      Today's students are digital natives; they are constantly interacting with the latest

electronic consumer technologies.  Hutchison and Reinking (2011) stress that information and

communication technologies have become apart of the "mainstream of everyday literacy" (p.

312).  Teachers need to realize the impact that technology has on students' lives outside of the

classroom (Lamb & Johnson, 2011; Hutchison & Reinking, 2011; O'Mara & Laidlaw, 2011;

Vasinda & McLeod, 2011; Sweeny, 2007; Reid, Kervin, Vardy & Hindle, 2006).  Sweeny (2007)

states "building on traditional literacies and expanding new literacies can support this generation

of technology savvy students' literacy development by deepening their understanding of and

engagement with the written, visual and auditory communication vehicles in their world" (p. 21).

Instruction should bridge the gap between literacy experiences in and out of school by expanding

the types of texts students are exposed to at school (Lamb & Johnson, 2011; Vasinda & McLeod,

2011).  As stated by Reid, Kervin, Vardy & Hindle (2006), "educators need increased

understanding of how to meaningfully incorporate these potential change agents (Internet

technologies) within educational settings to better prepare students for the society they are a part

of" (p. 219).

When choosing technology to implement into instruction, it is important to consider what it is that you are hoping to gain from the use of technology.  The key is to match technology with specific content to meet the learning needs of students (Lamb & Johnson, 2011).  In developing their study, Vasinda and McLeod (2011) decided to pair reader's theater with podcasting.  The study included three elementary schools in a North Texas suburb, one second grade class and one third grade class from each school.  Vasinda and McLeod (2011) explain that their purpose was to maintain a powerful literacy strategy while adding something that would not be there without the use of the technology.  The technology match of podcasting captures the auditory nature of reader's theater and offers extensions to the practice and repeat of reader's theater scripts.  Podcasts offer a variety of implementation possibilities in the classroom.  Podcasts can be used as a tool for increasing fluency when reading, either independently, with a partner, or in a group setting.  After students record themselves reading on a podcast, they will be able to play it back and listen to themselves reading.  Allowing students to listen to recordings of their reading is a good way to promote self-evaluation, which is a key tool in becoming successful reader and learner (Vasinda & McLeod, 2011).  Playing back podcasts of student reading can also spark classroom discussion related to expression, tone and use of vocabulary.  If planned carefully, podcasts could also be used to enhance basic projects in which students create presentations. iPods could be used to capture student presentations or teacher presented videos or lectures to review at a later date (Vasinda & McLeod, 2011; Brookshire, 2006).  The use of iPods, podcasts, and iPads has also been beneficial for displaying and accessing course content or lectures and reduces the dependence of computer labs (Brookshire, 2006).

Callahan and King (2011) conducted a study that implemented the use of a visual poetry project into two creative writing classes at a public urban arts high school.  The purpose of the

project was for students to use PowerPoint to "creatively interpret poetry, rather than to present analysis" (Callahan and King, 2011, p. 136). Students were encouraged to use visuals, animations, sound, color and font to express the meaning and interpretations of various poems.

The use of different computer software and note taking applications can also be found useful in the classroom. After observing an intermediate level science class, Montelongo and Herter (2010) found that students were able to complete various steps of a multi step lab project with the use of computer technology. Students agreed that the computer software offered more options in completing the different steps of the project than using paper and pencil. Various software technologies allow you to manipulate figures and text, draw graphs and charts, and plug in formulas.

Implementing technology into daily reading instruction will provide more opportunities for meaningful learning experiences (Lamb and Johnson, 2011; Roskos et. al., 2011; Larson, 2010; Rhodes and Milby, 2007). Because of the interactive nature of multimodal text, students' higher order thinking and processing skills become even more important (Sweeny, 2007). Also, in most cases students have the opportunity to control the pace of online texts. Many multimodal texts provide options for repeating passages, going back to a certain page and hearing a section read out loud, which can help provide additional support for readers.

When looking for multimodal texts to implement in the classroom it is important for teachers to search for texts that fit into the curriculum but also align to the reading ability and appeal to the interest level of the students in order to promote deeper connections to the text (Sweeny, 2007). There are a variety of e-books available for use in the classroom that can be accessed and downloaded on a variety of technology tools (Lamb and Johnson, 2011; Roskos et. al., 2011; Larson, 2010; Rhodes and Milby, 2007). Many websites have listings of e-books that

are available for download. Often, they are organized by reading level and audience. E-books

can be found for all ages, primary, intermediate, young adult and also for adults. At each level,

the types of e-books that are available will offer different features and tools that are geared

towards the specific audience. E-books geared towards younger readers will often offer more

pictures, animations, sounds and decoding tools that can aid in students' understanding. Roskos

et. al. (2011) conducted a study that monitored the use of an e-book instructional model to gain

further knowledge of the possible implementations and benefits of using e-books in the

classroom. The study examined the use of e-books with small reading groups, independent

reading, and student-teacher reading pairs within four Early Reading First classroom sites; two

were located in the Midwest and two in the southwest region of the United States. Roskos et. al.

(2011) determined that the e-books fostered critical discussion among students and teachers. It

was also evident that students were enjoying the use of the e-books.

**Increasing Student Performance Through Technology**

Malin (2010) explains that there is an "instructional bridge" (p. 123) between student

engagement of the literature and material with learning the essential literacy skills, such as

comprehension, fluency, word study, inference strategies, summarizing and questioning. Li and

Pow (2011) conducted a study that investigated the use of one-to-one technology in the

classroom. Observations were completed of students in two tablet-PC supported classrooms and

two non-tablet-PC supported classrooms. Li and Pow (2011) determined that "student's

perceived impact of technology on developing their cognitive skills, improving their learning

strategies, and planning for their learning" (p. 325) was significantly higher in the tablet designed

classrooms compared to the traditional classrooms observed. Li and Pow (2011) concluded that

student performance was greatly impacted when students were given the opportunity to interact with the technology as their own "cognitive companion" (p. 319).

The use of technology in classroom activities offers many implications for struggling readers. Multimodal text offers pictures, sound, animation, etc. that helps create a 'picture' for students that have difficulties with visualization. Malin (2010) conducted a study that used digital video storytelling to foster student engagement and increase comprehension. The study included 47 high school sophomores and 24 high school seniors ranging academically from remedial to honors level in a suburban high school. Of the total 71 students, 35 were considered English Language Learners or remedial, 15 were considered "typical", and 21 were considered "advanced" (Malin, 2010). Malin (2010) explains that in order to truly understand the content of a story, students need to envision the story taking place in their minds. Many children have trouble creating an image that is relevant to the story. Malin (2010) argues that the use of digital video storytelling helps increase the "imaginative and intellectual process" (p. 122), which is vital to gain comprehension. For students who do not have trouble visualizing, video storytelling can reinforce their learning, give greater depth to the subject, and quickly clear up any difficulty with new vocabulary, context, or particular examples. Being able to see examples, see pictures move, hear a character, the environment of a story or having the same information presented in a different way can sometimes make all the difference in making a lesson 'stick'.

There are many different digital tools that are available on the iPad and e-readers that could be beneficial to students during reading, including highlighting, note taking, dictionary, text-to-speech options, manipulations of font, and sound. Struggling readers and students with disabilities will greatly benefit from using these features during reading (Larson, 2010). Having access to integrated tools that can be manipulated within the text, offer struggling readers and

students with disabilities new opportunities for becoming active readers. Jost and Mosley (2009) discuss the importance of having assistive technology available for students with disabilities to help them connect to the curriculum. Jost and Mosley (2009) discuss specifically the iPad, which is used as an "augmentative communication device" (p. 5) in some schools; specifically through the use of an application called Pic-A-Word and a text-to-speech feature. Both of these features work as a learning solution for students with disabilities.

Rhodes and Milby (2007) state that the use of e-book among students with disabilities increases independence through repeated practice of various types of reading. Rhodes and Milby (2007) explain that through the use of e-books, students with disabilities generally feel more confident in working independently or in a group setting. The e-books provide opportunities for students to be "exposed to sound, animation, and interactive activities that scaffold learning and are able to master tasks that may have not been accomplished independently" (Rhodes & Milby, 2007, p. 255). Price (2011) conducted a study of three sets of 10 students who were at least four years behind their age in reading level and were enrolled in a state mandated special education program. The first set consisted of students in sixth to eighth grade, the second set consisted of students in ninth to twelfth grade and the third set consisted of students of ages 18 to 22. Each student was asked to answer a set of comprehension questions after reading a printed text, following the comprehension questions, the students were then asked to read an interactive e-book and answer related comprehension questions. All students improved their comprehension scores after using the iPad to read an interactive e-book from zero-50%; by group, the sixth to eighth graders improved 21%, the ninth to twelfth graders improved 25%, and the 18 to 22 year olds improved their scores by 21% (Price, 2011). Teachers reported that the students found the iPads to be motivating and helped reduce off task behavior.

Similar to Price (2011), Lee and Vail (2005) conducted a study that included a total of four boys with developmental disabilities within two special education classrooms; one resource room and one special education room.  Lee and Vail (2005) used an intervention program, Word Wizard, to improve reading skills, specifically sight words.  It was found that the program was successful in teaching sight words; each student improved his total number of sights words recognized.  During interviews, each of the students communicated that they enjoyed using the computer software program and the teachers found it very useful and appropriate for the needs of the students.  However, Lee and Vail (2005) did report that one student showed a low increase in number of sight words learned, which was thought to be a result of lack of attention to the program.  Lee and Vail (2005) concluded that the student's lack of attention was a result of his disability and the program may have been too much for him to handle, which is something that should be considered by teachers in the future when using computer programs with students with disabilities.

**Increasing Student Engagement Through Technology**

Student engagement can be the difference between a class (or individual) covering all the relevant material with enthusiasm and time to spare, or characterized by struggling to acquire the minimal sense of the material, disciplinary problems, and spiking teacher frustration (Roskos et. al., 2011; Larson, 2010; Malin, 2010; Lee & Vail, 2005).  Only a small minority of students can successfully acquire the subject matter completely and effortlessly without being engaged in the process.  Another main goal is how to make the student a willing accomplice in their own education; how to get them to want to learn.  The use of technology in the classroom is a contemporary attempt to solve this age-old problem.

Most small children are inquisitive, curious, and eager to learn.  As children are longer exposed to the traditional education system, this positive attitude for learning often declines; by middle school many students become uninterested in school (Larson, 2010; Lee & Vail, 2005). The task now is to create instruction that will foster student engagement and in turn show that students are grasping the material.  Any resources that are available should be utilized in the hopes that it will help to spark the students' interest in the material.

In order for readers to connect with the text, they first need to be able to decode, then comprehend and transact with the text to make meaning (Malin, 2010).  In order to be successful in decoding and comprehending a text, students need to be engaged with the text so that they are able to take away the most understanding.  Malin (2010) explains that, "less engaged readers are often unable to reflect on their reading as a result of lack of interest, poor reading skills, limited comprehension strategies, or lack of personal experiences to use to construct meaning" (p. 121). In order to help non-engaged readers to become more engaged in reading, teachers need to find ways that will encourage them to participate and enjoy the reading.

Technology driven instruction is likely to increase student participation and motivation (Roskos et. al., 2011; Couse and Chen, 2010; Larson, 2010; Malin, 2010; Lee & Vail, 2005). Lee and Vail (2005) report that the use of technology in the classroom encourages children's active participation and increases their motivation for being involved.  Couse and Chen (2010) conducted a study that examined the ease of use and effectiveness of engaging preschool students to use tablet computers to draw.  A total of 41 students of the ages three to six years old were videotaped while using the tablets.  Teachers reported that there was high interest evident and the drawings were viewed as typical to above expectation.  It was also reported that students

persisted in use and maintained interest despite some frustration in learning to use and navigate

the tablets.

**Specific Uses and Benefits of the iPad**

There are many different types of technology that are being found more often in

classrooms today.  Sometimes, the options can be overwhelming.  O'Mara and Laidlaw (2011)

refer to iPads as the "devices of choice" (p. 151) because they are the "latest thing" (p. 151) and

are becoming more popular in students' lives outside of school.  The great thing about the iPad

and similar tablets is that it comprises the functions of the smaller technology pieces into one.

The iPad offers opportunities for the use of E-books that can be accessed from several different

locations and sources, includes an iPod with its original functions and access to iTunes and

Internet.  Murray and Olcese (2011) reported that there are vast amount of "250,000

applications" (p. 42) that are available on the iPad.  Murray and Olcese (2011) determined

through their study and categorization of applications available on the iPad, that well over 30,000

applications are specific to educational use, while some others could be used and implemented to

fit a certain purpose in the classroom.  There are more applications appearing all the time, and

the essential stipulation is that as the application is improved, it will become available (or

installed if desired) automatically without a major effort on the teacher (Murray & Olcese, 2011).

Other benefits of the iPad include the easy portability and less start up time compared to desktop

and laptop computers (Quillen, 2011).

There are many different ways that the iPad can be used in the classroom to enhance

instruction and activities, the possibilities are nearly endless.  Several specific uses were

acknowledged through the literature.  Quillen (2011) reports of an English teacher personalizing

reading assignments for varying levels of students' abilities by using a feature of the iPad that

allows them to highlight key phrases and vocabulary words.  In one classroom, the iPad was used

to enhance a science project that was being completed in groups (Montelongo & Herter, 2010).

Shuler, Hutchins and LaShell (2010) examined the iPad's use for cooperative learning through

various activities in eight undergraduate courses.  Some of these activities included Internet

based student enhanced lectures, group problem-solving activities, and class discussions.  Shuler,

Hutchins, and LaShell (2010) administered surveys to students in two survey population groups.

The first survey group was asked questions related to their perceptions of the learning

environment; within this group, 21% of the students considered themselves to be less computer

savvy than their peers, 81% of students considered themselves to have little or no prior

experience with tablet computers, and 28% of students considered themselves to be highly

skilled computer users.  The second survey group was asked questions related to their ability to

interact with classmates and the instructor; within this group, 31% of the students considered

themselves to be less computer savvy than their peers, 80% of students considered themselves to

have little or no prior experience with tablet computers, and 41% of students considered

themselves to be highly skilled computer users.  Shuler, Hutchins, and LaShell (2010) reported

that students in both survey groups indicated that the use of tablet computers in the classroom

greatly improved the learning and interaction experience in their classes.

Similar to Shuler, Hutchins, and LaShell (2010), Enriquez (2010) conducted a study at

Cañada College, part of the California Community College system, within two Circuits courses

of the Engineering Department.  The usual design of the course consists of a traditional

instructor-centered approach to teaching the class.  For the purpose of this study, an Interactive

Learning Network program was developed to "enhance the instructor's ability to solicit active

participation from all students during lectures, to conduct immediate and meaningful assessment

of student learning" (Enriquez, 2010, p. 78).  To create this type of environment tablet PCs and

software was used.  The use of the tablets increased various levels of interaction and

communication between students and the instructor reduced the amount of instructor-centered

lectures, Internet note taking, and the completion of complex concept examples through the

available software.

Grandon Gill's (2007) study focused on note taking on the iPad that could be shared and

accessed by all students in the class, promoting student collaboration.  The iPad comes with its

own application for note taking but there is also numerous applications and websites that are

available for this purpose.  Brand and Kinash (2010) conducted a similar study of 75 students

receiving the same content subject; some students used iPads, some used their existing mobile

devices (phones or laptops), and some used neither.  The students that are required to use the

iPads during lectures are tasked with Internet searching, and note taking for their group

discussions.  These same students also have access to the e-textbook version of the required text

for the class.  At the end of every week, quizzes were given to each group of students to measure

the knowledge and understanding of the content gained through the course; overall, a larger

growth was shown among the students that had access to iPads.

Google Docs is a website accessible to all in which you can create and edit documents

through the Internet.  Google Docs is a great resource for group work.  If students begin a paper

or project through Google Docs in the classroom, it would be accessible through an iPad or

classroom computer, as well as computers with Internet access in their home.  There are also

several applications for online discussion boards that could be utilize in the classroom for

promoting conversation related to a particular topic, book or project being discussed in the

classroom. Brand and Kinash (2010) discuss creating a classroom Twitter page for student discussions and comments.

An advantage to having access to multiple applications, computer software, e-books, note-taking options, general features and functions is that teachers will be able to "mix up" instruction and use of the iPad.  Often it is proven beneficial to supply students with a variety of approaches for teaching new concepts, reviewing, and assessing understanding (Quillen, 2011; Brand & Kinash, 2010).  Also, varying between group work and independent work with the use of the iPad will also prove to be beneficial to not only the students but to the teacher as well. Creating group work around the iPad will help foster social interactions and collaboration, which is another important aspect to the learning process (Grandon Gill, 2007; Reid, Kervin, Vardy, & Hindle, 2006).  Independent work will allow the teacher to monitor individual progress or struggle with certain activities or skills that can help to plan for future instruction or assignments.

Based on a review of recent literature, it is evident that information and communication technologies offer many opportunities and possibilities for use in the classroom.  Now that new technologies are becoming more popular in everyday life, teachers are beginning to realize the affects on students because of their familiarity of technology outside of school.  If technology is now playing a prominent role in students' acquisition outside of the classroom, it should also be used within the school system to build on and expand academic skills.  The literature that was reviewed showed four major themes, implementation of technology in the classroom, the use of technology to improve student performance, the use of technology to improve student engagement, and the specific uses and benefits of the iPad, which is the most recent popular piece of technology found in classrooms.  If time is used to become familiar with new

technologies and learning ways to implement them into academics, specifically literacy education, students will greatly benefit from an enriched curriculum.

## Method

### Context

Research for this study occurred at Country Prep Middle School (pseudonym), which is located in a rural community in upstate New York. Country Prep Middle School contains grades fifth through eighth.  According to the 2009-2010 New York State report card, 28% of students are eligible for free lunch and 11% are eligible for reduced-price lunch.  Also for the school year of 2009-2010, the racial make-up of the school includes 1% American Indian or Alaska Native, 2% Hispanic or Latino, and 97% White.  The general socioeconomic status of the community is middle class.

### Participants

For this study there are a total of six student participants and one teacher participant.  The six student participants are Mariah, Hannah, Jon, Dylan, Chris, and Austin (all pseudonyms). Mariah is 11 years and 5 months old and is a Caucasian female.  She is currently in sixth grade. Mariah's teacher describes her as an excellent student who is very outgoing and a hard worker. Her teacher also often describes Mariah as a model student.  Mariah reads at an independent level Z (Fountas and Pinnell).  Mariah is liked by many of her peers and involved in many extra curricular activities.  She comes from a supportive and stable family.

Hannah is 11 years old and is a Caucasian female.  She is currently in sixth grade. Hannah's teacher describes her as an excellent student who is hard working, motivating and generally willing to participate.  Her teacher does note that she cries easily or becomes sick if she

gets too stressed about schoolwork or classmates.  Hannah reads at an independent reading level Z (Fountas and Pinnell).  Hannah interacts well with her classmates and has a good, consistent group of friends.  She comes from a stable family with two siblings.  Hannah's parents are very proud of her and hold high expectations.

Jon is 11 years and 11 months old and is a Caucasian male.  He is currently in sixth grade.  Jon is an average student.  He is very quiet and generally shows minimal emotion.  Jon's teacher describes him as a fairly conscientious student who usually finishes his homework but can sometimes onlycompletes the minimum requirements.  Jon reads an independent reading level X (Fountas and Pinnell).  Jon is not very outgoing in interacting with his peers and tends to be very serious.  He is an only child and comes from a stable home.  Jon's mother and grandfather are both former employees of the school.

Dylan is 10 years old and is a Caucasian male.  He is currently in fifth grade.  Dylan reads at an independent level G (Fountas and Pinnell).  Dylan currently has an IEP for a learning disability and receives modified assignments.  Dylan's teacher states that he tends to have a temper and can be very loud, which causes him to be not very well liked.  Dylan does not come from a very involved or supportive family.  His family is considered low income.

Chris is 10 years old and is a Caucasian male.  He is currently in fifth grade.  Chris reads at an independent level T/U (Fountas and Pinnell).  Chris's teacher describes him as an average student but does not put forth much effort.  Chris does not always interact well with other students.  His parents are divorced but his mother is very supportive.  Chris is involved in many extra-curricular activities.

Austin is 10 years old and is a Caucasian male.  He is currently in fifth grade.  Austin reads at a level Y (Fountas and Pinnell).   Austin is a very bright student but can be easily

distracted and is very unorganized.  Austin's teacher says that he is not very well liked by his peers because he can be very hyper.  He has great parents who are highly educated and very involved.

The one teacher participant is Mrs. House (pseudonym).  She is a fifth grade, general education teacher.  Mrs. House co-teaches the majority of her classes with a special education teacher.  Dylan, Chris, and Austin are all in her class. Generally, Mrs. House incorporates technology into daily lessons, mostly through the use of a smart board and recent implementation of the iPad.  She has been teaching fifth grade at the school for five years.

**Researcher Stance**

I am currently a graduate student at St. John Fisher College.  I am working on completing my Master's Degree in Literacy Education, birth through sixth grade and have a Bachelor of Science Degree in Childhood and Special Education, first through sixth grade, with minors in Instructional Technology and French.  I am certified in Childhood Education and Special Education, grades first through sixth and presently working towards certification in Literacy, birth through sixth grade.

In the fifth grade classroom, I acted as a privileged, active observer.  As Mills (2011) defines, a privileged, active observer observes children during a time in which they are not directly responsible for teaching the lesson.  With the sixth grade students, I took on the role of an active participant observer.  As Mills (2011) defines, an active participant is actively engaged in teaching, while observing the outcomes of their teaching.   Since the students in both classrooms are familiar with me and see me in their classrooms on a regular basis, it was evident that they felt comfortable interacting with me during the study.  Establishing a comfortable environment helps students to open up and share their ideas and opinions.

**Method**

During this study, iPads were implemented into reading instruction. Mrs. House introduced the iPads to her whole fifth grade class as part of their daily reading instruction. Mrs. House focused on using a dictionary application on the iPad as a part of their reading and vocabulary instruction. Students took turns using the iPads to look up new vocabulary terms found in the novel they are reading. Once the definition was found in the dictionary application, the students then recorded the definitions on vocabulary sheet. With the sixth grade participants, I introduced the iPads in a small group setting. The students used the iPads independently to access and read an educational and interactive application about ancient Egypt. In using the application, the students were able to practice during-reading strategies followed by a series of reading comprehension questions. The small group sessions with the sixth graders took place every other day. Prior to using the iPads, all six participants were asked to complete a questionnaire. The questionnaire will inquire information related to the students' feelings about reading in and out of school, along with their knowledge or use of technology. During the study, I conducted active observation of all students and recorded field notes of their interactions with the iPads. Individual interviews were conducted with the sixth grade students to gain understanding of each student's perceptions and feelings about the use of technology in reading instruction and the iPad in general. The sixth grade students were also asked to complete reading comprehension assessments related to material read on the iPad, which will then be compared to their scores from a pervious comprehension assessment related to a printed text. They completed two assessments; one was a part of the Egypt application and was accessed on the iPad, the second assessment was generated teacher generated and written on paper. The fifth grade

students completed a vocabulary assessment of the words studied from the novel and the test

grade will be compared to their score from the pretest that was given prior to the iPad use.

**Quality and Credibility of Research**

In doing this research, it was important to ensure the quality and creditability of the

research.  Credibility, as Mills (2011) defines, is "the researcher's ability to take into account the

complexities that present themselves in a study and to deal with patterns that are not easily

explained" (p. 104).  To help ensure credibility, I did peer debriefing, which helped me to review

and reflect on my teaching practices and data with other professionals.  I also collected "raw"

data through the forms of audiotape and artifacts, including questionnaires and comprehension

assessments.

Transferability was guaranteed during this study.  As defined by Mills (2011),

"transferability refers to qualitative researchers' beliefs that everything they study is context

bound and that the goal of their work is not to develop "truth" statements that can be generalized

to larger groups of people" (p. 104).  In order to do this, I collected detailed descriptive data that

was specific to the purpose of my study and compared across different contexts.

Dependability was ensured during this study.  Dependability, as defined by Mills (2011),

refers to "the stability of data" (p. 104).  In order to do this, different methods were overlapped in

order to compensate evidence or data information that may be missing from one form of data

collection.  An audit trail was also kept throughout the process and afterwards, which will

provide access to field notes, audiotape and related artifacts for "external auditors" (Mills, 2011).

Lastly, Mills (2011) defines confirmability as "the neutrality or objectivity of the data

that has been collected" (p.104).  Confirmability was ensured through the practice of

triangulation, by collecting research data through different data sources and methods.  Data was

collected through audio taped, transcribed, individual interviews, student questionnaires, active

observation and field notes, and reading comprehension assessments.  I also practiced reflexivity,

which will examine any assumptions or biases that may arise throughout data collection.  I

continued to reflect on my research questions throughout the process and alter any questions if

necessary.

**Informed Consent and Protecting the Rights of the Participants**

Before beginning the study, I obtained informed consent from each of the participants.

An informed consent form was given to Mrs. House, since she will be a participating teacher

involved in the study.  Assent forms were also collected from each of the participating students.

Since each student involved in the study is a minor, parental consent forms were sent home to

each of their parents.  Each of the forms explained the purpose of the study, the possible risks

and benefits of the study, the anonymity of the study, and that their participation in the study is

optional.  All participant names' were given pseudonyms and will be removed from any data and

artifacts.

**Data Collection**

In order to complete this research study, I administered student questionnaires prior to

their use of iPads in the classroom to gain an understanding of their personal feelings towards

reading, their reading habits in and out of school, and any experience they may have with

technology.  Once the iPad was introduced and students began to use the iPads, I began active

observations of each of the participants.  During observation, I kept field notes of the students'

interactions with classmates, the technology and the teacher, body language and expressions the

students' were exhibiting in relation to the technology, and levels of participation and progress in

completing assigned activities.  After some time, I conducted individual interviews with each of

the participants to gain further information regarding their opinions of using the iPad in reading instruction. Each interview was audio transcribed. Comprehension assessments were also examined from previous assignments using printed text to compare to assessments from assignments using the iPad.

**Data Analysis**

Following the collection of data, it was necessary to organize and score all parts of data. First, all field observations were organized by student participants in order to view any possible patterns among student behaviors. Second, student interviews were transcribed. Quizzes were then collected, scored and inputted into a chart, organized by student and corresponding quiz. Several copies were made of the field notes, questionnaires and interviews.

Once all of the data was organized, I began reading through it several times. During the first read through, I was looking for information that stood out and would serve as good examples to highlight. During the second reading of the data, I began to code and label the data by general ideas. After this, I looked at the codes and grouped them into themes and categories. The final reading, I was looking for disconfirming evidence in the data and information that could spark additional questions.

**Findings and Discussions**

Reading instruction embodies several different skills and applications to be used in order to reach the main purpose: student comprehension. In order to help students to comprehend the material at hand, teachers must implement a variety of strategies that will expand on the skills and obtain their engagement in a variety of tasks. This research examined the affects of the implementation of the iPad in reading instruction. Specifically, this study examined the scores of

vocabulary and comprehension assessments given both prior to and after the implementation of

the iPad.  In addition, students were observed and interviewed regarding their use of the iPad

during instruction.  The following findings are presented in four themes:  student benefits of

using the iPad in the classroom, inconclusive gains in comprehension level, increased student

engagement and interest of using the iPad, and variety of applications of the iPad for classroom

use.  The discussion of these themes explores how the implementation of the iPad in reading

instruction can improve student engagement and in turn increase student comprehension.

**Student Benefits of Using the iPad in the Classroom**

        The use of the iPad offers many benefits for student use within the classroom.  Several

benefits were evident through this study and mentioned by the participants.  One benefit for

students of the iPad is the easy manipulation of text and iPad settings.  Mariah stated in her

interview that "it was easier to read certain things on the iPad and the text could be bigger than a

book" (Student Interview, 2012).   Being able to enlarge the text could appeal to students who

have trouble reading small print.  On the iPad, students are able to adjust the size of font easily or

zoom in to read smaller print, like captions.  Jon agreed that being able "to change the size of the

font and zoom in was an advantage to using the iPad" and added that he liked how you "can turn

the iPad sideways" to change the layout of text and pictures (Student Interview, 2012).  Text

layout is often a key component in reading comprehension.  On the iPad, students have the

choice to manipulate the display of the iPad to show the text in different layouts, which allows

them to choose a layout that works best for their reading styles.  Hannah explained that she

"liked the iPad features including the easy access to definitions within the Egypt application"

(Student Interview, 2012).  Different text features included zoom, references to maps, hyperlinks

to related content, pictures and captions, and integrated definitions within the reading.  Jon added

to this idea by explaining "you can click on a word that you don't know and it will bring up the definition without having to use a dictionary" (Student Interview, 2012). Manipulation of text and easy access to reading tools can provide readers with confidence for reading because the integrated tools help them to become more independent. Larson (2010), argues that having access to integrated tools that can be manipulated within the text, offer struggling readers and students with disabilities new opportunities for becoming active readers.

Through observations, it was evident that the fifth graders found the navigation of the dictionary application fairly easy. It was noted through observation of their casual conversation during group work that they agreed that the iPad dictionary application was easier to use than a regular dictionary because they did not have to take the extra time to flip through the pages (Student Observation, 2012). Chris stated, "this is cooler than a dictionary" (Student Observation, 2012). Often, the fact that students are simply able to use technology in instruction results in more positive behaviors and results of doing regular everyday classroom activities. Li and Pow (2011) concluded from their study that student performance was greatly impacted when students were given the opportunity to interact with technology as their own "cognitive companion" (p. 319). Here there seems to be a relationship that students who focused on the work at hand did use the iPad as their "cognitive companion" or as a way to better complete their tasks, while some students fixated on the 'cool toy' in their hands.

Dylan usually struggles with most assignments and receives extra help on the majority of his class work because he is behind grade level. He was given a shortened assignment but was still able to use the iPad dictionary. Dylan was able to navigate the iPad dictionary independently. It was evident that his new sense of independence was helping him to feel successful in completing the task when he said, "I did it, I found it!" (Student Observation,

2012).   In Price's (2011) study of 30 students several years below their grade reading level, 50%
of students were able to increase their comprehension level after interactive reading on the iPad.
Price (2011) found the improvements in comprehension level to be a result of the students
finding the iPads to be motivating, which helped reduce off task behavior.

Another benefit of the iPad is that there are a variety of available sources that can be
accessed and used simultaneously.  Students are able to have several Internet pages or
applications opened at once and can easily navigate back and forth between them.   Hannah
stated, "being able to access different sources, including applications and Internet, all within one
piece of technology was an advantage" (Student Interview, 2012). The students who grasped the
advantage of the multimodal opportunities with the iPad and availed themselves of multiple tools
at their disposal with the iPad to complete their work did better in the post iPad quizzes.

During observation, it was noted that they continued to refer to several things that they
could use the iPad for, where as a book has one basic use, to read.  Mariah added by saying in
her interview that "I would choose to use the iPad for studying because it has many different
things you can use" (Student Interview, 2012). The many different tools and resources that are
available on the iPad offer students many opportunities for further exploration and understanding
of a topic. Often it is proven beneficial to supply students with a variety of approaches for
teaching new concepts, reviewing, and assessing understanding (Quillen, 2011; Brand & Kinash,
2010).

**Inconclusive Gains in Comprehension Level**

In order for students to gain meaning from text, they need to comprehend what they are
reading.   Students need to be able to focus on the text, read the text and understand the text in
order to comprehend the text.  There are many factors that affect a student's comprehension.

The purpose of the implementation of the iPad was to increase student comprehension through active engagement and participation, along with adding supplemental reading and activities to enhance the material.  The iPad was used in two different ways to test comprehension of the students.  Quiz grades were also collected from teacher-generated quizzes that were conducted on the same material prior to the implementation of the iPad.  These quiz scores were used to compare any increase or decrease in the students' scores after using the iPad.

The sixth grade students read various articles about Ancient Egypt and then were asked to complete two quizzes.  One quiz was included in the Egypt application on the iPad and was generated based on specific details in the reading.  A second quiz was given, that was teacher generated, based on more general ideas and themes of the reading on the iPad.  Both quizzes asked various types of questions (multiple choice, true or false, and short answer) to assess each student's understanding of the material presented in the iPad Egypt application.   As shown in Table 1, inconclusive gains in comprehension levels were found after the sixth grade students completed the assessment following the iPad use.

Table 1

*Sixth Grade Comprehension Quiz Scores*

|  | Quiz Scores | | |
| --- | --- | --- | --- |
| Student | Prior to iPad Use | Post iPad Use | Post iPad Use-iPad Generated |
| Jon | 98% | 60% | 40% |
| Hannah | 95% | 90% | 40% |
| Mariah | 100% | 100% | 40% |

Jon's grade decreased after using the iPad.  When tested prior to the use of the iPad, Jon scored a 98% on a teacher-generated quiz based on information of Egypt that was presented through the social studies textbook.  After reading similar articles and interacting on the iPad, Jon scored a 60% on a second teacher-generated quiz.  While observing Jon use the iPad to read the various articles and navigate through the Egypt application, it was noted that he tended to focus more on the games and picture puzzles within the application rather than focusing on completing detailed reading of the articles.  Based on this observation and the data presented in Table 1, it can be concluded that the interactive aspects of the Egypt application served as a distraction to Jon and took away from his full understanding of the material.  The social studies textbook had no such distractions and therefore limited his off task behavior.

Also shown in Table 1 are Hannah's scores, which remained consistent prior to the use of the iPad and after the use of the iPad.  On the quiz taken prior to the use of the iPad on material from the social studies textbook, Hannah scored a 95%.  After reading articles and interacting on the iPad, Hannah scored a 90%.  Through observation, it was noted that Hannah is a very focused reader and was able to read through the articles fairly quickly without navigating to the games in the application.   When asked what types of reading assignments she likes to do at school on the written questionnaire, Hannah replied "I like how we get to read books and then take a quiz" (Student Questionnaire, 2012).  Since Hannah enjoys completing comprehension assessments based on her reading, it can be concluded that she succeeds in doing well on quizzes because she is able to remain focused while reading and recall information that she has read more easily. Hannah may have been a bit distracted by the new experience of using the iPad, but only slightly.  It may be logical to assume that with subsequent uses, as the iPad became more routine to Hannah, her scores would stabilize and perhaps improve once the 'newness' wears off.

Examining the students using the iPad after it is routine would be a point to trend in a follow-on study with a longer period to collect data from.  As explained by Kervin and Mantei (2010), teachers need to consider various ways in which to implement technology and familiarize it with students so that the excitement does not take away from the intended use.

As shown in Table 1, Mariah received perfect scores on both teacher-generated quizzes taken prior to and after the use of the iPad.  During observation of Mariah using the iPad Egypt application, it was noted that she was taking advantage of all of the text features within the application.  Mariah clicked on new vocabulary words, which were highlighted within the text, and read each of their definitions before reading further.  She also clicked on each image within the reading to read the captions.  It was also noted that she read each of the articles in order and referred back to each for review prior to taking the quiz.  Shown through her high quiz scores, it is evident that Mariah uses all available studying tools when preparing for a test and that the iPad offered her the opportunity to access all necessary tools within the reading. Mariah seemed to grasp intuitively that the multiple tools available to her with the iPad could be used to help her reach her objective of learning the material at hand efficiently, and that enjoying the process was not to take away from the assignment, but was a bonus.  As Sweeny (2007) explains, many children who are familiar with the use of technology have become accustomed to multitasking and therefore are able to experience the thrill of using the iPad but are still able to take meaning away from the material.

Each of the sixth grade students did relatively poor on the iPad generated quiz within the application, as shown in Table 1.  The questions on this quiz were all multiple choice and were based on specific details presented within the articles.  Since there is a large difference of quiz scores between the teacher generated quizzes and the iPad quizzes, it can be predicted that the

students are still lacking necessary skills for detailed reading and comprehension.  Because of the

interactive nature of multimodal text, students' higher order thinking and processing skills

become even more important (Sweeny, 2007). It may also be logical to theorize that the

distraction of the 'new toy' may have temporarily overridden the potential benefit available but

would decreas as the newness wears off and the true potential of using the iPad can be realized.

The fifth grade students used the iPad in a slightly different way from the sixth graders.

The iPad was used to study the meaning of new vocabulary words learned from a novel the

students were reading in class.  Prior to using the iPad, students were given sentences to match to

each vocabulary word, which had already been discussed in class when each word was reached

within the novel.  Students were asked to fill in the blanks of the sentences with the correct

vocabulary word using their knowledge of the word and correct context clues.  Next, students

were given the iPad to use a dictionary application to look up the meanings of each of the

vocabulary words.  Students then recorded the meanings onto a vocabulary sheet.  Students were

then tested again with the original quiz.  As shown in Table 2, varying levels of improvement

were found after the fifth grade students completed the vocabulary assessment following the use

of the iPad.

Table 2

*Fifth Grade Vocabulary Scores*

| Student | Quiz Scores | |
| | Prior to iPad Use | Post iPad Use |
| --- | --- | --- |
| Dylan | 0% | 25% |
| Chris | 50% | 88% |
| Austin | 44% | 100% |

Dylan received a modified vocabulary quiz per his IEP (Individualized Education Plan).

Through observation, it was noted that Dylan was very distracted and had trouble focusing on the

reading during class time when the novel was being read aloud by the teacher.  Dylan was

constantly looking around the room, not focusing on the reading and constantly asking the

teacher when he was going to be able to use the iPad.  Once he began looking up the vocabulary

words on the iPad, Dylan became very focused and was able to complete the task with minimal

help.  As shown in Table 2, Dylan only slightly improved his score from a 0% to a 25%.   Dylan

was able to navigate the iPad independently but lacked the necessary skills to read and

understand the meaning of the definitions.  It was noted that Dylan was copying the letters and

words of the definitions down on his paper but may not have been actually reading the words.   It

was evident through observation that Dylan was focused on the iPad and enjoyed using it.  Dylan

also stated, "I wish we could use iPads more often, they are fun!" (Student Interviews, 2012).

However, the small improvement in his score could mean that he still needs additional assistance

in order to fully understand the material.  Lamb and Johnson (2011) explain that the key is to

match technology with specific content to meet the learning needs of students.  In Dylan's case,

the use of the iPad in this way may not have been the best application for what he needed in

order to understand the material.  It may be beneficial in the future to have him work with a

partner or a teacher while using the iPad who can further explain the definitions.

Chris was able to raise his score from a 50% to an 88% on the vocabulary assessment, as

shown in Table 2.  During observation, Chris remained very attentive to the use of the iPad and

was very conscientious of taking good notes of the vocabulary terms.  When it came time to take

the second quiz, it was evident that he was reading the sentences carefully, trying to recall

information from the iPad.  Chris's attentiveness to the iPad could mean that he was more

engaged in using the iPad than following along to lecture and class discussion of the vocabulary

terms within the reading, therefore resulting in a higher quiz score.  Again, it may be that Chris

was able to maintain his focus on the lesson and use the iPad despite the distraction of the new

device.

Also shown in Table 2, Austin was able to raise his original score of 44% to a perfect

score of 100%.  During observation, it was noted that Austin was very focused on the iPad

dictionary application.  When looking up definitions, Austin clicked on the speaker icon to have

the definitions read aloud to him, and then would record them while reading them aloud to

himself.  Austin's repetition of listening and reading aloud of the definitions helped him to

remember the meanings of each vocabulary term.  The enhanced features found on the iPad

appeal to different learning styles.   The ability of Austin to see an advantage to using the iPad to

help with his task may have been suggested, or his previous experiences allowed him to readily

spot the opportunity to use the iPad to help him with the task at hand.  In either case, his effective

use of the iPad was made possible in part due to its' flexible format and the many applications

that can be added to it, and possibly limited only by the teacher creativity in selecting the

applications and constructing the lessons that will be augmented by the iPad.

**Increased Student Engagement and Interest in using the iPad**

Another apparent theme throughout the data was the general interest the students had for

using the iPad.  During the student interview, Jon was asked why he liked using the iPad and he

responded simply "because it was fun" (Student Interview, 2012). Mariah, Austin and Chris each

agreed that they enjoyed the iPad because it was fun.  Technology in general often catches

people's attention, at any age.  New technologies are always coming out with more and more

fascinating capabilities than the previous model.  Simply bringing in a piece of technology into

the classroom will catch the attention of students.  Finding interactive activities and applications

for the students to use can channel the excitement into productive behavior, all the while keeping

the lesson fun. Lee & Vail (2005) report that the use of technology in the classroom encourages

children's active participation and increases their motivation for being involved.  The easy

manipulation of text and objects gives the iPad an enjoyment factor, which was stated by Hannah

in her interview.  Hannah responded to the question: why would you want your teacher to use the

iPad regularly in the classroom, with "because iPads can do more things than regular books"

(Student Interview, 2012).  Several students wrote on the questionnaire that technology should

be used more often in the classroom because of the interactive nature and general appeal.

Hannah wrote that "technology is fun to work with," while Austin agreed by saying "I'm a tech-

fan" (Student Interview, 2012).  Based on the positive feedback and general enjoyment of the

iPad, it can be concluded that the students were able to increase their understanding, shown

through the comprehension scores, because they were more actively engaged with the material.

**Variety of Applications of the iPad for Classroom Use**

There are many different ways that the iPad can be used, both in the classroom and

outside the classroom.  With the iPads recent implementation into classrooms, many teachers do

not realize the various applications of the iPad.  Generally iPads can be used for Internet

searching and reading e-books.  During the course of this study, the iPad was used for reading

within an application based on Egypt and as a dictionary.  The participants, throughout the

course of the study, mentioned several other applications.  Hannah suggested using the iPad for

"social studies because you can look up things on Google Earth, math because you can get math

facts and it could teach you other things, reading and research" (Student Interview, 2012).  Jon

agreed that he would like to use the iPad for research rather than textbooks. Mariah stated that

she would "use it for studying and looking up things so that I would get better grades on things"

(Student Interview, 2012).   It could be that Mariah sees the value in the additional features and

tools found on the iPad that can help in understanding material.  Utilizing the tools regularly can

help students to become not only active readers but improve their studying skills.  When first

asked what they would like to use the iPad for, each of the student's initially responded with the

obvious answer of games and music, but then were able to provide practical applications for the

classroom.  Since students were able to list educational applications of the iPad it shows that they

are aware of the role the iPad can play within the classroom in aiding their learning experience.

Murray and Olcese (2011) determined that 30,000 applications found on the iPad are

educational.  This variety provides many opportunities for teachers to create interactive activities

that are based around collaboration and participation.

Based on the observations and comments from the students, it is evident that the students

enjoyed interacting with the iPads.  Student motivation and engagement both increased when

using the iPads during instruction.  Integrated tools and features on the iPad were proven to be

beneficial to students while reading.  As a result of increased engagement and use of tools, the

majority of students were able to improve their comprehension scores.  However, the iPad does

include some potentially distracting features, which lead to difficulty in improving

comprehension levels.  Teachers need to consider each of these elements when implementing

technology, like the iPad, into daily instruction.

**Implications**

Through implementation of the iPad and observation of middle school students, it was

found that the use of the iPad increases student interest and engagement during daily lessons.

Students today are growing up in a more technologically advanced society that uses ever-changing technology for everyday tasks.  Implementing advanced technologies into the classroom provides more opportunities for students to interact with each other, their teacher, and the material.  Generally, students also benefit from the use of technology in the classroom because it is familiar to them and they simply enjoy using it.  It is important for teachers to realize the possible advantages of implementing technologies, like the iPad, into daily classroom activities and lessons.

For the implementation of advanced technologies to be successful, there are several things that teachers need to consider. If technology is now playing a prominent role in students' acquisition outside of the classroom, it should also be used within the school system to build on and expand academic skills.  Most importantly, teachers need to become familiar with the type of technology they plan to use.  Too often, teachers use a piece of technology as simply a projector for notes or reading, when there are many other more powerful uses and tools available. Implementing technology into daily lessons and activities should provide multiple opportunities for student involvement and interaction.  Teachers also need to be aware of the needs of their students and how technology can be used to assist students in improving their skills.  It may prove to be beneficial to provide student choice or variety of applications that can be used to achieve the same goal.  Providing choice and variety may lessen the amount of students becoming "bored" or even frustrated with certain applications that may not be "right" for them.

## Conclusions

The purpose of this study was to evaluate the effects of the implementation of the iPad into daily reading instruction.  Based on the new literacies theory, the use of technology in the

classroom promotes a student-centered environment, in which students can become more actively engaged and involved in the learning process. Through the use of the iPad, comprehension assessments, student observation, questionnaires and interviews, it was found that the use of the iPad increased student engagement and interest during daily lessons and activities. The majority of students also improved their comprehension of the material following the use of the iPad.

The research I completed was limited in some ways. The iPads that were used for this study were new to the school; therefore, the teachers and students had not become very familiar with their use prior to the study. The iPads were also lacking a variety of available applications that could have been of further use to this study. The iPads were also shared between the fifth and sixth grade classrooms used for this study. On several occasions there were instances of overlapping schedules and changes in times of use, which made it difficult to access the iPads or complete observation of their use by the project deadlines.

Because of the few limitations present in this research, it leaves me with further questions that cannot be answered at this time. Since the iPads were new to the teachers in this study, it would be interesting to observe the use of the iPad by a teacher who has more knowledge and experience of their use. I would also be interested to examine the use of the iPad with younger students or struggling readers. Studying younger students using the iPad may help to provide more evidence in growth of reading and comprehension levels. In all, the results of this research study were adequate and show the vast possibilities for further development and study of this subject.

Through this research, I have developed a greater understanding of the advantages for using the iPad in daily reading instruction and daily instruction in general. I found that the use of

the iPad, or technology in general, promotes student engagement and interest because they are

able to interact with the material in a more fun and inviting way.  The increased student

involvement in turn helps to increase reading comprehension.  Lee and Vail (2005) report that

the use of technology in the classroom encourages children's active participation and increases

their motivation for being involved.  Therefore, it becomes a responsibility of the teacher to

provide opportunities for students to become active learners.

**References**

Baron, D. (2001). From pencils to pixels: The stages of literacy technologies. In E. Cushman, E.R. Kintgen, B.M. Kroll & M. Rose (Eds), *Literacy: A critical sourcebook* (pp. 70-84). Boston: Bedford/St. Martin's.

Brand, J. & Kinash, S. (2010). Pad-agogy: A quasi-experimental and ethnographic pilot test of the iPad in blended mobile learning environment. In C.H. Steel, M.J. Keppell, P. Gerbic & S. Housego (Eds.), *Curriculum, technology & transformation for an unknown future. Proceedings ascelite Sydney,* 147-151.

Brookshire, R.G. (2006). The iPod revolution: Coming to a classroom near you. *University of South Carolina.*

Callahan, M. & King, J.M. (2011). Classroom remix: Patterns of pedagogy in a techno-literacies poetry unit. *Journal of Adolescent & Adult Literacy Skills, 55(2),* 134-144. doi: 10.1002/JAAL.0016

Couse, L.J. & Chen, D.W. (2010). A tablet computer for young children? Exploring its viability for early childhood education. *Journal of Research on Technology in Education, 43(1),* 75-98.

Delpit, L. (2001). The politics of teaching literate discourse. In E. Cushman, E.R. Kintgen, B.M. Kroll & M .Rose, (Eds.), *Literacy: A Critical Sourcebook* (pp. 545-554). Boston: Beford/St. Martin's.

Enriquez, A.G. (2010). Enhancing student performance using tablet computers. *College Teaching, 58,* 77-84. doi: 10.1080/87567550903263859

Gee, J.P. (2001). What is literacy? In E. Cushman, E.R. Kintgen, B.M. Kroll & M. Rose (Eds),

    *Literacy: A critical sourcebook* (pp. 525-544). Boston: Bedford/St. Martin's.

Grandon Gill, T. (2007). Using the tablet PC for instruction. *Decision Sciences Journal of*

    *Innovative Education, 5(1)*, 183-190.

Goodman, Y. (2001). The development of initial literacy. In E. Cushman, E.R. Kintgen, B.M.

    Kroll, & M. Rose (Eds.), *Literacy: A critical sourcebook* (pp. 316-324). Boston:

    Bedford/St. Martin's.

Heath, S.B. (1982). What no bedtime story means: Narrative skills at home and school.

    *Language in Society, 11,* 49-76.

Hutchison, A. & Reinking, D. (2011). Teachers' perceptions of integrating information and

    communication technologies into literacy instruction: A national survey in the United

    States. *Reading Research Quarterly, 46(4),* 312-333.

Jost, M.B. & Mosley, B.F. (2009). Where IT's AT? Teachers, assistive technology, and

    instructional technology. *Journal of Technology Integration in the Classroom, 3(2),* 5-

    16.

Kervin, L. & Mantei, J. (2010). Supporting educators with the inclusion of technology within

    literacy classrooms: A framework for "action". *Journal of Technology Integration in the*

    *Classroom, 2(3),* 43-54.

Lamb, A. & Johnson, L. (2011). Nuturing a new breed of reader: Five real-world issues.

    *Teacher Librarian, 39(1),* 56-63.

Larson, L.C.  (2010).  Digital readers:  The next chapter in e-book reading and response.  *The Reading Teacher, 64(1),* 15-22.

Larson, J. & Marsh, J.  (2005).  Making literacy real:  Theories and practices for teaching and learning.  London, England: SAGE Publications.

Lee, Y. & Vail, C.O.  (2005).  Computer-based reading instruction for young children with disabilities.  *Journal of Special Education Technology, 20(1),* 5-18.

Li, S.C. & Pow, J.W.C.  (2011).  Affordance of deep infusion of one-to-one tablet-PCs into and beyond classroom.  *International Journal of Instructional Media, 38(4),* 319-326.

Malin, G.  (2010).  Is it still considered reading?  Using digital video storytelling to engage adolescent readers.  *The Clearing House, 83,* 121-125.  doi: 10.1080/00098651003774802

Mays, L.  (2008).  The cultural divide of discourse:  Understanding how English language learners' primary discourse influences acquisition of literacy.  *The Reading Teacher, 61(5),* 415-418.

Meier, T.  (2003).  "Why can't she remember that?"  The importance of storybook reading in multilingual, multicultural classrooms.  *The Reading Teacher, 57(3),* 242-252.

Mills, G.E. (2011).  *Action research:  A guide for the teacher researcher.  (4th Edition).*  Upper Saddle River, NJ:  Pearson.

Montelongo, J.A. & Herter, R.J.  (2010).  Using technology to support expository reading and writing in science classes.  *Science Activities, 47,* 89-102.  doi: 10.1080/00368121003801388

Murray, O.T. & Olcese, N.R.  (2011).  Teaching and learning with iPads, ready or not? *Tech-*

   *Trends, 55(6),* 42-48.

O'Mara, J. & Laidlaw, L.  (2011).  Living in the iworld:  Two literacy researchers reflect on the

   changing texts and literacy practices of childhood.  *English Teaching: Practices and*

   *Critique, 10(4),* 149-159.

Price, A.  (2011).  Making a difference with smart tablets:  Are iPads really beneficial for

   students with autism? *Teacher Librarian, 39(1),* 31-34.

Quillen, I.  (2011).  Educators evaluate learning benefits of iPad:  With the release of Apple's

   iPad 2, educators are still determining best practices for the classroom.  *Education Week,*

   *4(3),* 38,40-41.

Reid, D., Kervin, L., Vardy, J., & Hindle, C.  (2006).  We've got iPods, but where do we start?

   The story of two grade four teachers. IADIS International conference mobile learning.

   Dublin, Ireland.

Rhodes, J.A. & Milby, T.M.  (2007).  Teacher-created electronic books:  Integrating technology

   to support readers with disabilities.  *The Reading Teacher, 61(3),* 225-259.  doi:

   10.1598/RT.61.3.6

Roskos, K., Burstein, K., You, B.-K., Brueck, J., & O'Brien, C.  (2011).  A formative study of an

   e-book instructional model in early literacy.  *Creative Education, 2(1),* 10-17.  doi:

   10.4236/ce.2011.21002

Sheridan, S.R.  (1997).  Drawing/writing and the new literacy: where verbal meets visual. A

   textbook for teachers. Drawing/Writing Publications:  Amherst, MA.

Shuler, P., Hutchins, G., & LaShell, B.  (2010).  Student perceptions of tablet computers in a

cooperative learning environment. *North American Colleges and Teachers of*

*Agriculture Journal,* 11-17.

Sweeny, S.M.  (2007).  Reading for technology savvy students:  Utilizing choice of multi-modal

texts to engage students in content literacy. *The NERA Journal, 43(1),* 15-22.

Vasinda, S. & McLeod, J.  (2011).  Extending readers theater:  A powerful and purposeful match

with podcasting. *The Reading Teacher, 64(7),* 486-497.

**Appendix A**

Student Questionnaire

1. How often do you read outside of school?

2. What types of books or text do you like to read?

3. What types of reading activities or assignments do you enjoy doing at school?

4. What types of reading activities or assignments do you not enjoy doing at school?

5. Are you familiar with any types of technology?  If yes, what kinds?

6. How often do your teachers use technology in your classroom?

7. Do you like using technology in the classroom?  Why or why not?

**Appendix B**

Student Interview

1. Did you like using the iPad? Why or why not?

2. How did you feel about reading on the iPad?

3. How does reading on the iPad compare to reading a book or a textbook?

4. How would you compare your self-motivation in class during a regular lesson to your time spent using the iPad?

5. Would you want your teachers to use the iPad more regularly in the classroom? Why or why not?

6. What would you like to use the iPad for in the classroom? On your own?