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This study examines the effect of electronic books on the reading experience of first grade students. Data was collected through observations, audio recordings of student retellings, interviews, and questionnaires on the student's reading experiences on the computer and Nook. The study reveals that electronic books motivate and engage all students, help strengthen struggling readers' text comprehension, provide supportive features for word reading, but also have potentially distracting features. Therefore, teachers should use electronic books in the classroom to foster technology and literacy skills and motivate struggling and reluctant readers, but must carefully select texts and train students on their use.

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Abstract

This study examines the effect of electronic books on the reading experience of first grade students. Data was collected through observations, audio recordings of student retellings, interviews, and questionnaires on the student's reading experiences on the computer and Nook. The study reveals that electronic books motivate and engage all students, help strengthen struggling readers' text comprehension, provide supportive features for word reading, but also have potentially distracting features. Therefore, teachers should use electronic books in the classroom to foster technology and literacy skills and motivate struggling and reluctant readers, but must carefully select texts and train students on their use.

The Effects of Electronic Books on the Reading Experience of First Grade Students

The topic that I explored in this paper is the use of electronic books in the literacy classroom. Electronic books, or e-books (also referred to as talking picture books, CD-ROM story books, interactive books, or digital books) are stories in a digital format that can be viewed on a computer or an electronic reading device such as Barnes and Noble's Nook or Amazon's Kindle. The text and illustrations are similar to traditional print books, but electronic books may also incorporate hypermedia such as sounds, animations, highlighted text, music, and narration. Electronic books are multisensory in that readers are presented with visual images, sounds, and buttons to touch to navigate through the pages.

E-books for children can be obtained from a variety of places. They can be read for free on various Internet websites such as Storyline Online, Magic Keys Children's Storybooks Online, PBS Kids Between the Lions, Starfall and Lil' Fingers Storybooks. Storyline Online features videos of famous actors reading children's books aloud. Magic Keys Children's Storybooks Online has numerous illustrated stories for children to read, and some include audio. The PBS Kids Between the Lions website, Starfall, and Lil' Fingers Storybooks include animated stories that are narrated and have highlighted text so that children can read along. Electronic books can also be bought online for specific handheld reading devices from the Barnes and Noble website or the Amazon website. Teachers may also have access to websites such as TumbleBooks, BookFlix, PebbleGo, or RazKids to use in their classroom if their school has a subscription. TumbleBooks has animated books for different grade levels that can be read with or without narration, and a built in word help feature that defines and segments words. BookFlix pairs narrated videos of popular fictional storybooks with related non-fiction e-books, so students can watch a video then read a similar book at their reading level by themselves.

PebbleGo features non-fiction texts that are narrated, and include pictures and videos. RazKids has animated electronic books at every guided reading level that students can listen to or read without sound and then complete related worksheets and quizzes.

Exploring the use of electronic books in the literacy classroom is significant because the students of today are growing up in an increasingly technological world. Most children are surrounded by electronics from birth, and have never known life without the Internet. Many students spend time at home engaged in technological activities such as watching television or DVDs, using Smart Phones, listening to CDs, and playing video games. Therefore, it is important for educators to keep up to date with the digital age to support them. Larson and Marsh (2005) state that it can help bridge the gap between home and school literacies when teachers integrate technology such as electronic books into the literacy classroom. Students who enjoy technology in their daily lives may be more likely to read and remain engaged in books that are presented in an interactive digital format. Introducing children to electronic books at a young age will also help them become familiar with technology and gain valuable twenty-first century skills that will help them throughout their lives.

Studying the effects that electronic books have on literacy learning helps all students who have access to them. If these multimodal texts can be used to get young reluctant readers interested in books, it could foster a lifetime love of learning. If we do not explore them as an avenue for teaching, we may be hurting the students who would benefit from them based on their learning styles. Larson (2010) states that although early forms of electronic books have been around for decades, few studies examining how students interact with them in the literacy classroom have been completed. Given their growing popularity, it is important to explore their advantages and benefits in the school setting.

In order to determine the effect of electronic books on the reading experience of students, I have observed, recorded, and interviewed first grade students reading electronic books in the classroom of a teacher who effectively integrates literacy and technology. I asked three students at different reading levels to read a traditional text followed by an electronic text to compare their reading experiences and also examined their use of the Nook, a handheld reading device. Through the literature that I read and the findings of my study, I have determined that electronic books effect the reading experience of students by increasing the motivation and engagement of children at all levels, strengthening the reading comprehension of struggling readers, aiding their word reading abilities through supportive features, but also potentially distracting students if they are not trained how to use them appropriately.

Theoretical Framework

Before exploring research on how electronic books effect on the reading experience, it is important to discuss how literacy is defined. Literacy is defined by Freebody and Luke (1990) as a multifaceted set of social practices with a material technology that involves decoding, comprehending, knowledge of the social uses of text, analyzing, and critiquing of the text. A "material technology" can be as simple as a traditional paperback book, or as complex as the electronic books that will be used in this study. Literate students actively engage with texts to figure out what the words are, determine their meaning, and decide how to use them socially and for what purpose. Similarly, Lankshear and Knobel (2007) define literacies as "socially recognized ways of generating, communicating, and negotiating content through the medium of encoded text within contexts of participation in Discourses" (p. 65).

Since literacy is defined as a social practice situated within specific contexts (Lankshear & Knobel, 2007; Larson & Marsh, 2005), the National Council of Teachers of English (2008)

states that as society, culture and technology change, so does the definition of literacy. A twenty-first century person must not just know how to read and write, but also possess a wide range of abilities and competencies including proficiency with technology and information sharing, collaborative problem solving, and manipulating multiple forms of text. Definitions of literacy today must move beyond paper-printed text to include the books and texts in electronic formats that students are interacting with. The definitions of literacy by Freebody and Luke (1990) and Lankshear and Knobel (2007) and this study on electronic books are shaped by two recent theories: New Literacies and Sociocultural Theory.

The first theory that is pertinent to this study is the New Literacies theory. Larson and Marsh (2005) explain that there have been many terms used to account for the changes in literacy brought on by recent technology such as the Internet and electronic books. For example, some researchers have pluralized "literacy," used the term "multiliteracies," or added literacy to other words such as "digital literacy" or "media literacy" (Larson and Marsh, 2005). Lankshear and Knobel (2003) use the term "New Literacies" to describe new and changing ways of sharing texts by electronic means, and post-typographic forms of textual practice. Lankshear and Knobel (2003) state that "New Literacies" include the new skills, strategies and dispositions that are required by new information and communication technologies and are central to full participation in a global community. New forms of multimodal text arrive via digital code as sound, videos, text, images, and animations, explains Lanham (1994), which is very different from the traditional static pictures and linear text that have been read by students in paper books for centuries. In the digital age, literacy is dominated by images rather than writing, and the medium of a computer screen rather than a book (Kress, 2003). Texts may be non-linear with

hyperlinks, speech bubbles and non-traditional directionality. These advances change how students read and make meaning from text and transform literacy instruction in the classroom.

Electronic books are one example of the new forms of text described by "New Literacies" that are viewed on the computer screen, dominated by images and incorporating hypermedia. They can be easily integrated into the literacy classroom to help students build the skills, strategies, and dispositions that are central to "New Literacies." Books viewed online on the computer, on handheld reading devices or CD-ROMs will force students to interact with technology and pick up navigational skills that they will apply to be successful in the future. Through electronic books, students will learn to navigate through the numerous interactive tools that will affect their reading experience, and as a result will build their knowledge of New Literacies and technological skills.

The second theory that relates to this study on the use of electronic books in the literacy classroom is Sociocultural Theory. The sociocultural theoretical framework focuses on how social, cultural, political and economic beliefs and attitudes of society impact how literacy instruction and learning take place. It states that students are affected by the adults and peers in their life and also the society that they live in. Kucer (2009), states that based on the sociocultural theory, to be active members of society, children must use language socially and functionally. In the digital age, using language functionally and socially requires using technology such as electronic texts at home and school. In a culture where technology is prevalent, students must know how to navigate digital literacies such as electronic books to be successful. The "New Literacies" previously described are seen as new social practices, discourses, or contexts by researchers such as Gee (2001) and Kress (2003).

Using electronic texts and other forms of technology in the classroom helps bridge the gap between children's primary and secondary discourses. Based on sociocultural theory, Gee (2001) explains that literacies are embedded in discourses and can only be understood when they are situated within their social, cultural, and historical contexts, which include a larger set of values and beliefs. Gee (2001) states that our primary discourse is the language and literacy skills that we learn at home, while our secondary discourses are ones that children gain outside of their home and family in institutions such as schools and workplaces. Students acquire literacy skills at home, their primary discourse, by internalizing the oral language that they hear, then learn skills at school (a secondary discourse) to develop their phonemic awareness, phonics, fluency, vocabulary, and comprehension, which are the five components of literacy set forth by the National Reading Panel (2000). Since there are multiple secondary discourses, there are also multiple literacies and being literate means being able to use the correct language in the right ways within a specific discourse. Students will most likely come into contact with electronics before they reach school. According to Larson and Marsh (2005), "children become competent in using digital technologies from a very young age and the lack of attention by educators to the experience creates dissonance between home and school experiences" (p. 70). Through using electronic books in the classroom, teachers can build on that developing technological knowledge while teaching literacy skills simultaneously.

Research Question

Given that literacy is a social practice that is affected by our constantly evolving culture and new literacies bring about the need for integrating literacy and technology, this action research project asks, how do electronic books affect the reading experience of first grade students?

Literature Review

The purpose of this literature review is to examine multiple perspectives on how electronic books improve the reading experience of students in the primary grades. Through the review of previous studies on the topic of electronic books in primary classrooms, three themes emerged in the literature. First, electronic books increase students' motivation and engagement in reading. Secondly, there is a significant amount of research that shows that electronic books can be used as a scaffold to support students' word reading strategies. Lastly, I will discuss the effects of electronic books on comprehension. Research indicates that when compared to traditional printed texts, electronic texts provide a number of advantages that enhance the reading experience of students.

Electronic Books Increase Student Motivation and Engagement

Numerous studies have shown that students today are highly motivated by technology (Larson, 2010; Moody, 2010; Gainer & Lapp, 2010, Lankshear & Knobel, 2003). Reading electronic texts on digital tools such as an e-reader, CD-ROMs, or the internet is exciting to students who engage in the use of technology outside of school in their daily lives. Oakley and Jay (2008) explain that "the dynamism inherent in video, animation, and sound seem to be appealing to today's students, who are often used to the action and visuals inherent in TV and video games" (p. 246). Students have a desire to read electronic books because they find them to be a new and unique medium that is multimodal, multisensory and interactive (Larson, 2010). Electronic books make sustained and repeated readings more attractive to students because they want to try out the number of digital options available, which helps them internalize the text and story content (de Jong & Bus, 2002). Prior to discussing how electronic books provide

scaffolding for young readers to read words, it is important to understand what research says about the ability of electronic books to motivate and engage students in reading.

One reason that electronic books have been found to motivate children is that they are individual, private, yet supportive reading environments. Many students who lack motivation to read suffer from embarrassment because they struggle with literacy (Oakley & Jay, 2008). These children may experience social discomfort when working through a text at school or at home and come to the conclusion that they cannot read. Computers and handheld electronic reading devices offer a personal, safe reading context where embarrassment can be minimized (Oakley & Jay, 2008). Tools and features of electronic books scaffold literacy learning and can make difficult readings easier for struggling readers or English Language Learners so that they can independently read texts (Moody, 2010). If students do not know a word that they encounter, it can be pronounced and defined for them through narration and dictionaries, so they do not have to give up reading a text that is above their reading capabilities (Grimshaw, Dungworth, McKnight & Morris, 2007). Struggling readers or English language learners no longer have to go to an adult or peers for assistance, which allows them to "save face" when reading as well as time because they do not have to wait for their teacher and break their engagement with the text (Oakley & Jay, 2008; Grimshaw et al., 2007). The stress free environment that electronic texts provide makes students more likely to read and reread.

Older students may be motivated to select electronic books simply because they enjoy hearing someone else read to them aloud with expression and enthusiasm (Oakley & Jay, 2008). Some electronic books online are even narrated by famous actors and comedians, such as Storyline Online. This website is an online streaming video program the features members of the Screen Actors Guild reading children's books aloud. As students get older, read alouds become

fewer from parents and teachers, so electronic books can be used to replace oral reading from an adult. In one study, Oakley and Jay (2008) sent various electronic talking books home with reluctant readers who rarely read at home individually or with their parents. Participating students reported that they thoroughly enjoyed reading the electronic texts because they were fun and offered assistance when needed. Parents stated that the electronic talking books led to noticeable improvements in the reading attitudes and abilities of their children, as well as kept them reading longer. Although the students were not always reading in the traditional sense, but listening to narration and viewing pictures, they were still gaining experience with written language outside of school. Ten percent of the students read all of the assigned books over a ten week period, increasing their reading at home by two hours a week. Two of the students quadrupled their time spent on home reading (Oakley & Jay, 2008). For students that do not want to read traditional print books outside of school, electronic books offer a powerful new opportunity to expose them to literature to improve their literacy skills without the assistance of an adult.

Once students are motivated to read, it is important that they remain engaged in the reading material. Electronic books have been shown to be extremely engaging, keeping the attention of the students for sustained periods of time (Larson, 2010; Moody, 2010). Reading engagement is a predictor of children's gains of emergent literacy skills, and has been associated with short and long term outcomes in reading (Moody, Justice, & Cabell, 2010). Preschool students showed high levels of engagements with electronic books in a study by Roskos, Burstein, Breueck, You, and O'Brien (2011) by smiling, gazing intently, and contemplating as they read. Roskos, Burstein, Breueck, You, & O'Brien (2011) measured facial features, motor behaviors, student control of the touch screen and attention indicated by directional eye gaze

towards the screen and found that students were constantly looking at the electronic books and manipulating them by page turning, pointing to words and finger tracking. Engagement was also demonstrated when children sat still, pointed to the text, and turned the pages instead of wiggling and shifting about as if they were uninterested (Roskos et al., 2011). Similarly, observations by Maynard and Cheyne (2005) of students working in groups using electronic textbooks versus traditional textbooks noted that groups were more involved, keen to learn, well behaved and focused while interacting with electronic features such as video clips, underlining capabilities, note taking tools, and dictionaries than students who were solely reading printed textbooks. In another comparable study, preschool students supported by adults demonstrated similar but slightly higher amounts of persistence, enthusiasm and compliance with reading e-storybooks rather than traditional storybooks (Moody, Justice, & Cabell, 2010), which is important because interactivity, enthusiasm and persistence with text leads to increased exposure to reading experiences. When students are more engaged through interacting with electronic texts, they will spend more time reading which increases their abilities and skills.

In addition, electronic books allow students opportunities for choice, control and active participation, which are factors that have been found to increase student motivation and engagement (Oakley & Jay, 2008). Handheld reading devices such as Amazon's Kindle and Barnes and Noble's Nook offer a variety of choices of reading material for students, so that they are guaranteed to find a book or magazine that they like. No matter where they are, they have millions of reading options to choose from that are a range of ability levels, genres, and subjects. Verhallen & Bus (2010) state that "children can virtually roam through these digital libraries, select books, and read and reread storybooks to their hearts' content, independent of adults" (p. 59). Students can also alter, choose, and control their reading experience to make it more

individualized through using digital features and tools. Moody, Justice and Cabell (2010) suggest that the digital features of e-storybooks can "increase children's reading engagement by providing children with choice opportunities about speech, graphics, and speed as compared to a traditional storybook" (p. 297). Larson (2010) examined the interactions of two second grade girls with Kindles and found that they engaged more with the text due to interactive tools such as inserting digital notes, highlighting and underlining key vocabulary, and control over reading such as changing the font size. Interactivity also enhanced young reader's experience with electronic CD-ROM storybooks in studies by de Jong and Bus (2003) and Shamir and Korat (2007) because students had control over hotspots, games, connections with illustrations, animations, and songs that supported their reading. de Jong and Bus (2003) examined the content of sixty electronic books for three to seven year old students and found that seeing animated pictures along with hearing the text, and activating "hotspots," or humorous inserted videos that support the texts, enhanced children's motivation, engagement, and retention of story content.

Although electronic books have been shown to be motivating and engaging, researchers such as Troy and Jones (2011) believe that print books should not be disregarded. Electronic books should be used in the literacy classroom to supplement traditional print books because both offer important learning experiences. Contrary to many studies (Larson, 2010; Moody et al., 2010; Verhallen & Bus, 2010; Shamir and Korat, 2007; de Jong and Bus, 2003), Troy and Jones (2011) compared reading engagement between electronic and traditional books in a third grade classroom and found that the electronic book format did not significantly increase reading enjoyment or engagement. Students did indicate a preference for e-books because of the wide variety of titles to choose from, and the amenities such as dictionaries, word pronunciation,

automatic page turning and narration, but the format in which books were delivered (electronic versus traditional) did not matter as much as how the characters, theme and setting of the book aligned with the personal preferences of the readers. Whether students are more engaged and motivated by electronic books or not, their reading experience is changed through their use. Electronic books have a place in the classroom beside traditional print books because of the ways that they support literacy learning.

Electronic Books as a Scaffold for Word Reading

Due to the fact the electronic books are motivating and engaging, they are widely used in the classroom to scaffold student learning of literacy skills that are needed to read words. As previously stated, electronic books provide a supportive environment for practicing literacy skills without the assistance of an adult. Students with emerging literacy skills can read independently, but are offered help when needed. Studies have shown that emergent reading skills such as decoding (DeJong & Bus, 2003), phonological awareness (Chera & Wood, 2003; Shamir & Korat, 2007), vocabulary (Verhallen & Bus, 2010), concepts of print (Moody, 2011; Shamir & Shlafer, 2011) and fluency have been improved through young students' reading of electronic texts.

By participating in sessions with multimedia talking books, students have increased their decoding and phonological awareness (Shamir & Korat, 2007; de Jong & Bus, 2003; Chera & Wood, 2003). Phonological awareness is a person's ability to hear and manipulate sounds in words and is a big indicator of future reading success. Studies of children engaging with electronic books have allowed children to practice specific phonological awareness skills such as letter sounds and word onsets (Chera & Wood, 2003), word reading (Korat, 2010), blending, segmenting, letter naming (Shamir & Korat, 2007) and rhyme detection skills (Wood, 2005)

through hotspots and digital features such as narration and illuminated text. As the narrator if an

electronic text reads the story, each word is highlighted, brightened or heightened. This feature

draws the reader's attention to each word in the page and helps them learn the valuable phonics

skill of matching the sounds of language with the printed word (de Jong & Bus, 2002). In

electronic texts, students can click on individual words to hear their pronunciation letter by letter,

as a word, by syllables or even onsets and rhymes, thus reinforcing a "look-say connection

between visual and auditory forms of the same word" (Zucker, Moody & McKenna, 2009, p.

50). In some e-books, students also can click on pictures and animations that are directly related

to the text and the word for the picture will be produced and read in bold letters (de Jong & Bus,

2002). Playful interaction with these facilities explains why some preschool children's word

recognition improved after repeated explorations of digital text (de Jong & Bus, 2003). Children

who had some emerging decoding skills showed interest in playful interaction with the printed

text by clicking on separate words or phrases, exploring the relationship between written and

spoken words (de Jong & Bus, 2003). Wood (2005) found that students who activated the "Read

the Page" feature in talking books software were more likely to pronounce words correctly in the

future and use word substitution strategies for unknown words. The "Read the Page" feature

allows the student to hear the words read fluently by a narrator. Students were less likely to

refuse to attempt reading a word that they did not know than students who did not use an

electronic book with "Read the Page" narration. For other children, accuracy in word reading and

word recognition in the context of the story improved significantly after students were given

access to CD-ROM talking books as well as traditional texts because of their use of more context

clues and illustrations (Medwell, 1998).

       As a result of the aforementioned studies that found that electronic books increase

phonological awareness, a number of electronic books have been designed by teachers and researchers specifically to help readers improve these skills. These educational e-books increase students' phonological awareness through hotspots that include practice activities and games to support the relationship between written and oral text. Students can repeat the words or text that has been read by the narrator, and activate hotspots to practice skills such as segmenting or blending (Shamir, 2009). Carefully designed electronic books have been shown to help students with learning disabilities (Shamir & Shlafer, 2011) as well as boys with lower phonological proficiency (Littleton, Wood,& Chera, 2006) make progress to catch up to their peers in phonological awareness. Shamir & Korat (2007) designed their own electronic text to see if it would have an effect on emergent literacy skills after researching the features that high quality electronic books possessed. Their book for kindergarten students was developmentally appropriate and allowed children to read only, read and use a dictionary, read and play games, or simply print the book to read it. After reading the electronic book by Shamir and Korat (2007), students working both individually and in pairs increased their scores in phonological awareness, word meaning, word recognition, letter naming and even emergent writing.

In addition to increasing phonological awareness, electronic books improve word reading ability because students can individualize their reading experience by self-selecting the words, phrases, and definitions with which they need assistance to improve their vocabulary (Pearman, 2006). In many electronic books, children can activate a dictionary feature that gives them the meaning of the word and synonyms (Moody, 2010). Pearman and Lefever-Davis (2006) state that animations and graphics also help students define words, because "when book characters visually react to an event via animations, it is easier for readers to infer word meanings" (p. 306). For example, a character may shake his left foot as the narration reads "left foot." Animations

have been shown to facilitate vocabulary development (Higgins & Hess, 2000) and allow

students to use context and picture clues to figure out the meaning of words that they do not

know (Pearman & Lefever-Davis, 2006). The effect of video storybooks on five year old

children was examined by Verhallen & Bus (2010) and found that these electronic texts

increased both their expressive and receptive vocabulary. Visual imagery plays an important

role in vocabulary development and video story books present nonverbal representations such as

pictures and animations and language bound together. Verhallen & Bus (2010) explain that "the

close temporal proximity of words and images in video storybooks makes it more likely that the

learner is able to build mental connections between verbal and visual representations and thus

develops memory traces that connect details of pictures with phrases in the narrative" (p.55).

A similar study by Segars, Takke, & Verhoeven (2004) found that multicultural kindergarten

students learned new vocabulary words from a computer-mediated storybook reading. Though

they learned more words from their teacher reading the story, students could individually use the

computer to increase their vocabulary when the teacher was not present. Electronic books give

children the opportunity to read texts with assistance, and scaffold literacy learning much like an

adult or teacher would by helping students when they are stuck on a word.

Other studies (Moody, 2011; Shamir & Shlafer, 2011) have shown that electronic books

can be used like traditional books to improve young students' knowledge of concepts of print.

Moody (2010) explains that to enhance print awareness, the computer offers "click to turn page"

and "read" options on each page, and highlights text from left to right to show proper

directionality and orientation. Preschool students with and without learning disabilities have

used electronic books to learn concepts such as page, line, writing, drawing, knowledge of book

and text handling as well as reading direction (Shamir & Shlafer, 2011). The narration shows the

students how to properly read, which is important when an adult is not present. Interacting with electronic devices is an engaging, interactive way to learn the concepts of print.

The final way that electronic books support development of word reading skills is that they encourage fluency. The narration tool present in most electronic books serves as a model to demonstrate proper intonation, phrasing, and reading speed. Students can echo what they hear to practice fluent reading at a proper pace and with appropriate expression. They can also chorally read along with the narrator. Some e-books highlight the words in phrases, to encourage students to chunk text rather than read word by word. Electronic books also provide more incentive for sustained and repeated readings than traditional books because students want to interact with their animations, hotspots and special features. The more students are reading, the more they will improve their fluency. Pearman and Lefever-Davis (2006) explain that CD-ROM storybooks often feature narrators who read with different voices for each character, which makes reading more fun and engaging than when they read it on their own. Electronic books have options such as "read to me" or "read by myself," which allow students opportunities to listen to books, and then read them on their own to promote fluency. Students may also seek out a print version of an electronic book to explore at home or away from the computer, which increases fluency.

Students in a study by Oakley (2003) improved their reading fluency by creating their own multimedia talking book. Nine and ten year old girls first viewed an electronic book to serve as a model and starting point, and then created their own. They designed and illustrated a story using computer graphics and animations and narrated it themselves. When listening to their recordings, students reflected on their fluency and evaluated and modified their own phrasing and expression to make it sound more like the electronic books that they previously

viewed and heard. Using technology and creating a product that would be heard by others encouraged them to focus on making sure their oral language sounded right, and as a result they all increased their fluency by the end of the project, as well as their proficiency with technology.

While electronic books support students' development of word reading skills, vocabulary, concepts about print and fluency, they can become problematic at times when students over rely on the supportive features to decode words rather than use their independent abilities. Having the computer pronounce the word for them becomes habitual for some students (Lefever-Davis & Pearman, 2005). When this happens, students may stop taking risks, attempting words, using cueing systems and developing word-solving strategies of their own because the electronic text does it for them (Pearman, 2006). Students may not read books independently at all, but just listen to the text. Students must be instructed to use but not abuse the features of electronic books that scaffold their literacy learning, and also be exposed to traditional books or electronic books without all of the assistive features activated.

Effects of Electronic Books on Comprehension

In addition to supporting students in developing word reading skills, a number of studies (Seyit, 2010; Pearman, 2008; Grimshaw et al., 2007; Verhallen et al., 2006; Doty et al., 2001; Matthew, 1996) have examined the effects of electronic books on students' reading comprehension. Comprehension is defined by the National Reading Panel (2000) as a complex and cognitive process that requires an intentional and thoughtful interaction between the reader and the text to make meaning. Comprehension is essential to reading because if the reader does not understand the message of the text, they are not learning anything, just repeating the text and imitating sounds of a language (Seyit, 2010). Electronic books encourage high levels of interaction between the reader and the text. Through reading electronic books students have

scored higher on comprehension tests (Korat, 2010; Grimshaw et al., 2007, Doty et al., 2001) and retellings (Seyit, 2010; Pearman, 2008, Matthew 1996; Verhallen et al., 2006) when compared to traditional print texts. Through the studies previously mentioned, it has been shown that students' comprehension improves because when they are using electronic books they have to exert less energy on decoding, and have access to more comprehension, context cues, and supportive note taking features.

The first way that electronic books improve students' comprehension is that they eliminate the need for students to focus on decoding and fluency. Text-to-speech narration allows children to concentrate on constructing meaning from the text rather than expending energy on word solving. The words can be read to students, or they can look up vocabulary words that they do not know how to pronounce to help them better understand what they are reading (Zucker, Moody & McKenna, 2009). When a fluent narrator reads the words on the page with correct intonation and emphasis, it reduces the load on the working memory, which benefits the children's ability to retrieve information and make inferences from the text (Grimshaw et al., 2007). This supportive feature allows students to read and comprehend difficult text at higher reading levels than they would be able to using traditional print books.

Another way that electronic books aid students in comprehending text is that they offer a greater repertoire of comprehension cues than printed texts (Pearman & Lefever-Davis, 2006). Electronic books integrate multiple senses through sound effects, tactile features and visual animations that dramatize word and story meanings to reinforce concepts and vocabulary and give the story multiple layers of meanings (de Jong and Bus, 2002). Pearman (2008) provides an example of a student from her study who explained that he knew something was going to happen on the page that he was reading because music played and created a sinister mood. Music or

sound provides a cue, or context that the student needs to focus their attention on the story to find

out what happens. Similarly, in an electronic version of "The Three Little Pigs," an animated

scene of the wolf blowing down a house while the pigs screamed in fright precedes the children's

reading of the text to show the reader what is about to happen so that they can more easily link

visuals to words (Lefever-Davis and Pearman, 2005). de Jong and Bus (2003) stated that

"feelings, mood and character actions, elicited by filmic depth, sounds and voices, improve

students' ability to make inferences about story events" (p. 148). Digital features in electronic

books can encourage students to use comprehension strategies such as making predictions,

making connections and inferences and visualizing the story to enhance their understanding of

the text.

The digital features of electronic books also help provide the context of the story for the

reader. Animations and pictures provide a rich, eye-catching setting, which help students

visualize where and when the story takes place, and assists them in building or activating more

complete schemas of stories (Bus, de Jong & Verhallen, 2006). Sound effects and movements

make students feel like they are right in the story, experiencing the events alongside the

characters. Pearman (2008) stated that in once instance, forty-five of her second grade students

discussed the setting of the story after reading an electronic text while only twenty-eight

mentioned the setting after reading the traditional text with static pictures. The animated images

of electronic books stick better in the student's minds than non-moving pictures; building mental

representations and making the books come alive so that students are drawn into the character's

world, creating an exciting reading experience.

Third and fifth/sixth graders who read electronic books with such multimedia extensions

as animations, sounds, music, and narration scored significantly higher on inferential questions

than students who read the print versions (Matthew, 1999) and completed comprehension tests

faster (Grimshaw et al., 2007). The retelling results from a study of fourth graders' reading

comprehension by Seyit (2010) showed that struggling readers better understand theme, plot,

problems and resolution in electronic storybooks with animation than with the static pictures

available in printed storybooks. Students were able to remember more details, and give longer

and more creative retelling of events in the story. Similarly, first graders in a study by Korat

(2010) were able to remember and reproduce stories that they read electronically five times in an

impressive manner, demonstrating higher levels of story understanding than when they read

traditional print books. Verhallen, Bus and de Jong (2006) found that after an intervention with

only static pictures available, children's retellings consist mainly of a series of actions mostly

leaving implied elements out of their retelling, while their interaction with electronic books with

animations and visual images included more complex understandings of the story, including

character's states of mind. Being able to see the facial expressions of the characters changing

helps students better identify what is going on when it is not explicitly stated in the text.

Student's reading comprehension is also affected by the summarizing or note taking

features of electronic books which give children a chance to synthesize information and respond

to texts in their own way while reading (Zucker et al., 2009). In handheld reading devices such

as the Kindle or Nook, students can make personal annotations in the text, much like writing in

the margins of a paper book, and save them to refer to later. Larson (2010) observed two

students using a Kindle to take notes as they read and found that they practiced comprehension

strategies such as questioning, connecting, retelling, answering questions in the text and

evaluating through their notes. They were able to underline and highlight important ideas to help

them summarize the story later, increasing their story understanding and comprehension.   In

addition, students who used electronic textbooks instead of paper text books in a study by

Maynard and Cheyne (2005) reported that these note taking features helped them remember the

information that they were reading better and kept them more focused. Those who were

assigned to read the traditional text books were unhappy because they could not take notes in

their texts in the same fashion because they did not own the books. Electronic books on

interactive CD-ROMs also offer additional features such as self monitoring questions (Seyit,

2010), comprehension quizzes (Oakley & Jay, 2008) or reviews of information to ensure that

students are staying on track while reading longer texts. Tools such as these assist students while

they are reading and scaffold their comprehension.

　　　Although all of the research presented has shown that comprehension skills are increased

through using electronic books, some researchers (Korat, 2010; Lefever-Davis & Pearman, 2005;

de Jong & Bus, 2003) have expressed concerns that electronic text features may be detrimental in

the long run to students' comprehension. Lefever-Davis & Pearman (2005) noticed that some

students were distracted by the digital features. Sometimes an overabundance of graphics made

it take longer for the pages to turn, which frustrated students. Certain children spent more time

activating hotspots and games than actually reading. Others took a spectator stance, viewing the

electronic book as a game and began passively looking at the animations rather than reading,

causing them to miss the message of the text (de Jong & Bus, 2003). Many hotspots were also

found to be incongruent with the story which could be confusing for students (Korat, 2010;

Lefever-Davis & Pearman, 2005). Animations that did not advance the story line or reinforce

story events took the reader's attention away from deriving meaning from the text (Pearman &

Lefever-Davis, 2006). Interactive games also caused some students to navigate away from the

story and never return, so that instead of learning students were playing. Electronic books must

be examined on an individual basis by the teacher to determine how supportive or unsupportive they are of student comprehension so that student's reading experience is affected positively rather than negatively.

High quality electronic books are great resources for the classroom because they are motivating, engaging, and scaffold students' learning of word reading and comprehension strategies. Research has shown that carefully selected books improve the reading experience of children when compared to traditional printed texts.

Method

Context

Research for this study was conducted in a public primary school in a suburb of upstate New York. In 2009-2010, 327 kindergarten, first, and second grade students were enrolled at this school according to the New York State School Report Card. Of this population, 62 percent of students are white, 19 percent are black or African American, seven percent are Hispanic or Latino, nine percent are multiracial and two percent are Asian or Native Hawaiian/Other Pacific Islander. Thirty two percent of children were eligible for free lunch, while 8 percent were eligible for reduced price lunch. This school is in good standing and all student groups made annual yearly progress in Mathematics and ELA in 2009-2010. All teachers in this school hold a valid teaching certificate, and 17 percent of teachers hold a master's degree with thirty hours or a doctorate.

The classroom where I collected data is a first grade general education classroom. This class is made up of 17 students who are six or seven years old. Of these students, nine are female and eight are male. Most of the students, 13, are Caucasian, while three are Hispanic and one is multiracial. Five of the students are classified with disabilities, and seven are reading

below grade level. Eight students are on grade level in reading, while two are reading above grade level.

Participants

Teacher

The teacher of the classroom used in this study is named Mrs. Little (a pseudonym). She has been teaching in this school for seven years since she graduated with her Master's degree from a state college in upstate New York. Mrs. Little is professionally certified in Childhood Education, Special Education, and Literacy for kindergarten through sixth grade students. I specifically chose her classroom for this study because of her passion for utilizing technology to teach her first grade students to read. In her daily lessons she uses a Smart Board, electronic books, Microsoft Power Point, and numerous computer software programs to enhance literacy learning. She has also taken numerous professional development courses related to integrating literacy and technology.

Students

The three students that I worked with individually are Joe, John, and Jane (pseudonyms). Mrs. Little chose them for me based on their guided reading levels and interest in technology.

Joe is a six year old first grade boy. He is Caucasian and diagnosed with ADHD. He lives at home with his parents, a sister and a dog. He is below grade level at a C guided reading level and is still working on learning his letters and sounds, but really enjoys listening to electronic and audio books on the computer. He struggles with decoding, but has adequate comprehension of texts that he hears read aloud. His favorite books are those involving trucks, hunting, and sports. Outside of school he enjoys playing baseball and soccer.

John is a six year old Caucasian boy. He lives with his mother, father, two older

brothers, and a pet snake. John is at grade level at a guided reading level E. During guided and independent reading, John prefers reading nonfiction books related to science. During his free time at home he enjoys using technology such as his Nintendo DS, Wii, laptop and IPod. He is also a Cub Scout and takes swimming lessons.

Jane is a six year old first grade girl. She is Hispanic and reading at a guided reading level J. Jane lives with her parents, one brother, and a baby sister. Outside of school, she reads a lot and goes to the library once a week. She prefers to read small fictional chapter books and is very good at making connections and using other comprehension strategies such as predicting and questioning. Jane loves writing, and would like to become an author someday.

Researcher Stance

As a researcher, I was a passive observer in Mrs. Little's classroom. A passive observer focuses solely on data collection, and has no teaching responsibilities, according to Mills (2011). This type of observation allowed me to concentrate on watching the activities that the teacher and students participated in involving electronic books and take detailed field notes on their reactions. I was able to learn from what they did in the classroom through careful observation so that I can successfully incorporate technology into my literacy instruction in the future. Mrs. Little is my neighbor, but I had not previously met any of the students in her class before the study.   I am a student currently working on my Master's degree in Literacy Education for students from birth through sixth grade. I have a bachelor's degree in Childhood Education and Special Education for first through sixth grade and am initially certified in Childhood Education and Students with Disabilities for students from birth through sixth grade.

Method

For this study, I visited Mrs. Little's classroom three times for one hour during the English Language Arts block in the morning to collect data. On the first day, I formally interviewed Mrs. Little about her use of electronic books to teach literacy skills while the students were at art class and audio recorded her responses. Interview questions are listed in Appendix D. When the children returned, I gave three students at different reading levels named Joe, John, and Jane (pseudonyms) a questionnaire (Appendix A) about their use of technology for reading at home and in school. I then observed these students reading electronic books independently on their school's website. Their instructional technology specialist has created a Listening Center on the website that provides numerous electronic books for students to choose from. It has videos of books read aloud by teachers from their school and videos from Storyline Online read aloud by famous actors. There are also links to video storybooks from BookFlix and TumbleBooks as well as electronic books with static pictures and illustrations that are available from the International Children's Digital Library website. Students can also read virtual books which are stories in the form of a Power Point presentation created by teachers that include animations, music, sound, and narration. During centers time, these three students were assigned to the computer station and asked to read an electronic book of their choice. I took field notes on their motivation and engagement by looking at their facial expressions, examining their body language to see if they appeared focused on the computer by clicking and pointing to parts of the book, and listening to their comments or reactions to the text. I also took notes their interactions with the text such as clicking on words or pictures, or activating supportive tools and features. I wrote down their reactions to the text as well, such as smiling, laughing, or conversing with others about what they read.

The second day that I visited Mrs. Little's classroom, I worked with the same three

students at different levels individually for twenty minutes each at the computer during centers

time. I read each student the book *Frank was a Monster Who Wanted to Dance* by Keith Graves,

and then showed them the electronic version on TumbleBooks. I selected this book because it is

at their grade level of first grade and would interest them because they have been discussing

Halloween and it features a monster. I took field notes on their engagement, motivation,

interactions with the texts and reactions to each book during reading. After reading each book, I

asked the students to retell what they read through answering short comprehension questions and

audio recorded their responses. Students drew and answered five questions out of a Frankenstein

monster toy. They were asked who was in the story, where it took place, and what happened at

the beginning, middle, and end. Lastly, I gave the students a questionnaire (see Appendix B) on

the two different reading experiences asking which one they liked better. The questionnaire had

simple questions with two answers for them to choose from due to their age. We also discussed

their selections; I scribed for them and took notes on our conversation about the questionnaire.

The last day of data collection, I observed the same three students from the second visit

reading an interactive electronic book on my Nook handheld reading device instead of the

computer. I worked with each student for twenty minutes during their ELA block. All three

students read books at their grade level by Dr. Seuss on the Nook. I selected these books

because their teacher reported that they all enjoy Dr. Seuss and have read other books by him in

the past. John and Joe read "The Foot Book" by Dr. Seuss, which is at John's guided reading

level E, while Jane read Hop on Pop, which is at her guided reading level J.   "The Foot Book" is

above Joe's reading level (C), but his teacher said that he should be able to recognize some

words and can click on unknown words to have them pronounced for him. Students were asked

to select the "Read it Myself" option as opposed to "Auto Play" or "Read to Me" features. They

read the book aloud themselves but had the option of clicking on unknown words to have them

read aloud. They could also click on the pictures and it would produce the name of the picture.

For example, when they clicked on a bed in one picture, the text "blanket" appeared, was read,

and grew larger then disappeared. When they clicked on the person sleeping in the bed, it said

"sleep" and made a snoring sound. When they clicked on the person's feet, it said "feet" and the

word grew larger then disappeared. There were directions within the text such as "swipe" with an

arrow to the left to show them how to turn the page, and circles with directions that said "Tap

words or press and hold paragraph," or "Tap pictures." If they did not pick up on these features, I

showed them how to maneuver through the electronic book. I took field notes on their

motivation, engagement, reactions to, and interactions with the text and which features they used

the most throughout their reading. I asked John and Joe to recall some of the different kinds of

feet that were in the story and audio recorded their responses to check their comprehension.   I

asked Jane to recall some of the different things she read about in "Hop on Pop" and audio

recorded that to check her comprehension. Afterwards, I gave the students a short questionnaire

about the experience, and which features they liked and did not like (See Appendix C). I scribed

for them when necessary and took notes on the comments they made during our conversation but

were unable to write due to their age.

Quality and Credibility of Research

The quality and credibility of this study on electronic books was ensured. Mills (2011)

describes four criteria for establishing a trustworthy study: credibility, transferability,

dependability, and confirmability. Credibility is defined by Mills (2011) as "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 ensure that my study is credible, I participated

in peer debriefing with my critical colleague, Meg, so that I could discuss my insights with her to help me reflect on my findings. I also practiced triangulation, which Mills (2011) describes as comparing a variety of data sources and methods to cross check my data, including collecting audio recordings.

Transferability is defined by Mills (2011) as "the qualitative researchers' belief 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). To ensure that my study is transferable, I collected descriptive data and described the context of the study to make judgments about fittingness with other contexts possible. I included as much detail as possible to help others see the setting of my study.

In addition to ensuring credibility and transferability, I also ensured dependability and confirmability during my study. Dependability refers to the stability of data (Mills, 2011). The strategies that I used to make sure that my study is dependable are that I established an audit trail, which will make it possible for another person to examine my collection of data, analysis and interpretation. I also used multiple methods of data collection so that the weakness of one may be compensated by the strength of another. For example, I formally interviewed the teacher, took field notes, observed, audio recorded sessions and provided pre and post questionnaires for the students.

To ensure that my study is confirmable, or neutral and objective (Mills, 2011), I practiced triangulation as previously mentioned through engaging in experiencing, enquiring, and examining. I experienced the study through passive observation and took field notes. I enquired through my formal teacher interview and student questionnaires. I also examined the audio recordings for data. I practiced reflexivity by intentionally revealing my biases or underlying

assumptions that caused me to formulate questions in particular ways and kept a reflection

journal on a regular basis to help me realize them.

Informed Consent and Protecting the Rights of Participants

Before beginning my research, I had to obtain informed consent and assent from

participants and ensured that I protected their rights. The teacher filled out an informed consent

form for adults that explained the purpose of the study and her rights as a participant. I sent

home consent forms to the parents of students in her class explaining my research and asking for

permission to work with their children, who are minors. These permission forms were approved

by the principal before they were sent so that he would be aware of the study. Since the students

are in first grade, I asked for their verbal assent to participate in this study after explaining the

purpose of my research. All participants in the study were notified that pseudonyms were used

for all names and locations to ensure anonymity and confidentiality.

Data Collection

To collect data, I used a variety of tools. I first had students complete a questionnaire on

their use of technology and reading habits before the study. I formally interviewed and audio

recorded the teacher to gain her opinions and insights on using electronic books in the classroom.

Next, I passively observed students reading electronic books three times and took field notes on

their engagement, reactions, conversations, and literacy learning.   I audio recorded students

responses to short comprehension assessments on the electronic texts that they read during their

reading block. Lastly, I had all student participants fill out a post-questionnaire about their

opinions on using electronic books.

Data Analysis

After collecting data, it was necessary to organize and analyze my field notes, audio recordings, formal teacher interview, student interviews, and questionnaires to interpret what I observed. After each data collection session, I typed up my handwritten field notes to make them more organized. I listened to the audio recordings of the formal teacher interview, student interviews, and student responses to comprehension questions and typed up a transcription of each conversation. Once all of the data was typed, I made multiple copies of it, and then read through all of it three times. The first time I simply reflected on the methods that I used and looked for specific data that stood out. The second time I worked with my critical colleague, Meg, and together we coded my field notes, questionnaires, and transcriptions and identified the categories and themes that emerged in multiple data sources. According to Mills (2011), coding is the "process of trying to find patterns and meaning in data collected" (p. 129) and codes are the "working labels attached to blocks of text" (p. 130). The third time that I read through my data I looked for disconfirming evidence and additional questions that I was left with.

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Findings and Discussion

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Through carefully analyzing the data collected on how electronic books affect the reading experience of first grade students, four themes emerged. The themes prevalent in the data were that electronic books did the following: increased student motivation and engagement, strengthened the reading comprehension of struggling readers, provided supportive features for word reading, and provided potential distractions for some students. These findings are consistent with many studies on electronic books previously discussed in my literature review such as Oakley and Jay (2008), Roskos, Burstein, Breueck, You, and O'Brien (2011), Zucker,

Moody, and McKenna (2009), Seyit (2010), Medwell (1998), de Jong and Bus (2003) and

Lefever-Davis and Pearman (2005).

Increased Student Motivation and Engagement

The first major theme that emerged from multiple sources of data was that first grade

students in Mrs. Little's class were more motivated to read and engaged while reading electronic

books than other forms of text. This theme is significant because a child who is motivated to

read and thoroughly engaged with a text will be more likely to gain important literacy skills and

participate in repeated readings in the future.   Oakley and Jay (2008) found that when they sent

various electronic talking books home with reluctant readers who rarely read at home, literacy

skills grew and students spent more time reading. Their parents reported that electronic talking

books led to noticeable improvements in the reading attitudes and abilities of their children, as

well as kept them reading longer. Two students quadrupled their time spent reading at home and

this extended interaction with electronic text improved their literacy skills and encouraged them

to read more because they enjoyed the supportive environment that electronic books provide.

Motivation to read electronic books in Mrs. Little's classroom was demonstrated through

teacher and student comments and the pre-questionnaires. During the formal teacher interview,

Mrs. Little stated that her "students love using the computer for anything and enjoy listening to

texts electronically" (Interview, October 13, 2011). This quote shows that technology motivates

the first grade students in her class and that they have experience with reading electronic books

for pleasure. Based on the pre-questionnaire, Joe, John, and Jane selected the choice that stated

that they were very happy about reading an electronic book during our first session, even though

Joe selected that he felt unhappy about reading. This data leads me to believe that electronic

forms of books are enjoyable for the students, and encourage Joe to read more, even though

reading can be a struggle for him. Mrs. Little stated that "students, even reluctant readers, really enjoy them and will even choose to read or listen to electronic books during free time on the computer!" (Interview, October 13, 2011). This quote shows me that providing electronic books for use during free selection times helps motivate her struggling readers to engage with texts when they ordinarily would not independently.

During session two and three, all three students verbally expressed excitement about reading electronic books on the computer and Nook. Joe said "Yea, I love reading on computers!" when I chose him first during the second session and "Cool! We are reading on that thingy!" when I introduced my Nook during the third session (Field Notes, October 26, 2011). Positive attitudes and comments like these show that electronic books are fun and motivating for students and encourage them to get excited about reading. John, along with numerous other students in the class, always asked to be next to read electronic books with me. This observation indicated the level of excitement that students felt for engaging with electronic texts and showed me that students did not view my study as extra reading work, but as a fun and interesting activity. After reading the traditional book during session 2, John and Joe both immediately started clicking on the electronic book with smiles of excitement on their face (Field notes, October 20, 2011) and Jane asked to re-read the electronic book while following along in the traditional book, demonstrating that she was motivated to read any book that I put in front of her (Field notes, October 20, 2011). These positive student reactions lead me to believe that electronic books motivate and engage students in reading and repeated readings. According to the post-questionnaires for session two and session three, all students reported that they would like to read the electronic book again and would read another book on the Nook, which showed that electronic versions motivated them to re-read. By selecting that they would read books a

second time, it showed me that electronic books motivate students to not only read, but re-read to build their fluency, which is important to help their literacy skills grow in the future.

      In addition to being motivated to read the electronic books, students were also highly engaged throughout our time together. Reading engagement is a predictor of children's gains of emergent literacy skills, and has been associated with short and long term outcomes in reading (Moody, Justice, & Cabell, 2010). Mrs. Little stated during the formal interview that "electronic books provide entertaining features such as animations, music, and sound effects that keep children independently engaged in reading during centers time on the computer" (Interview, October 13, 2011).   Based on my field notes, all three students showed indicators of strong engagement while reading electronic books during the three sessions that I collected data. This data is consistent with the study by Moody, Justice, and Cabell (2008) that founds that children exhibit increased engagement when using multimedia stories due to a heavy visual content that assists with processing.

      During each session, I made notes on the behaviors displayed by Joe, John, and Jane indicating student engagement while reading electronic books independently, on the computer and on the Nook. These behaviors included attention indicated by eye gaze, motor behaviors, and control of the electronic book, positive facial expressions, and comments that indicated involvement in the story. When students looked at the book for extended periods of time, touched and interacted with the text, navigated through, and reacted positively through facial expressions and excited comments, this behavior lead me to believe that they were engaged in reading the electronic text. This data showed me that their reading experience was enhanced using electronic books because the texts kept their attention and they were not distracted.

      Based on my field notes, all three students were attending to the electronic stories as

indicated by eye gaze. They were sitting still and focusing their eyes on the screen for the

majority of the time during each session. They were able to tune out distractions despite the fact

that sometimes their class was singing, dancing, or playing Smart Board games. Evidence of this

was that each student asked to have the volume turned up so that they could hear better, while

John and Joe pulled the headphones closer to their ears to block out distracting noises from the

class. These results on engagement are consistent with the study by Roskos, Burstein, Breueck,

You, and O'Brien (2011) that examined children's engagement and attention indicated by

directional eye gaze toward the touch screen and found that children gazed intently at the screen

across e-book reading sessions, suggesting their interest in the stories. At a few points, Jane

turned around from the computer or Nook to see what the rest of the class was doing during

sessions two and three, but the other two boys showed no signs of distracted behavior such as

fidgeting or looking away. This behavior is especially rare for Joe, who has trouble paying

attention and focusing during lessons. He usually fidgets, looks elsewhere in the room and

sometimes engages the teacher in conversations that aren't related to the lesson. His sustained

attention indicated that electronic books are effective tools for keeping students engaged in

reading.

Every student physically interacted with the electronic text through motor behaviors and

control of the electronic books, demonstrating engagement. Evidence of this was clicking,

turning pages, and pointing in different ways. Based on field notes, the students were able to

successfully navigate through the electronic texts in TumbleBooks by clicking on the arrows to

go to the next page, and by swiping to turn pages on the Nook at appropriate times which

showed that they were listening to the story. All three students clicked on different words to hear

them read, or clicked on pictures to hear the labels for them. Jane followed along with the mouse

pointer as each word was read and highlighted during session one and three. John and Joe clicked on every single picture in the Dr. Seuss story on the Nook during session three. They all read along with the narrator when they knew the words, or listened to the narrator read words that they did not know during sessions one and three. The students also re-read parts of the stories at times, which showed that they were engaged and making meaning from the story. These observations on motor behaviors were consistent with the findings of Roskos, Burstein, Breueck, You, and O'Brien (2011) that incidences of pointing and sitting while reading electronic books predominated over those of wiggling and shifting about 'as if' uninterested, indicating strong engagement. This data shows that electronic books can be used in the classroom to keep students thoroughly engaged in literacy learning for long periods of time. Their reading experience is more fun and interactive through the use of electronic books.

All three students showed positive facial expressions such as smiling and laughing at appropriate times to indicate that they were engaged with the electronic books during all three sessions (Field Notes). John hummed to the music, while Jane danced while listening to the story in session two. Reactions such as these showed that students were paying attention and interested in the text and were consistent with the study by Roskos, Burstein, Breueck, You, and O'Brien (2011) which found that students showed positive responses to screen content such as smiling to suggest their interest in stories and engagement with electronic texts.

While reading and listening to electronic stories, students also interacted with the researcher, making comments that related to the text which showed that they were engaged throughout. Joe and John pointed to pictures to share with the researcher how funny they were, made comments such as "ew" and "that can't really happen," at disgusting parts of the electronic book *Frank Was A Monster Who Wanted To Dance* (Field Notes, October 20, 2011). Jane

shared her observations about the text such as "all of these words end with –ed," and connections

such as "they are having snack like us!"(Field Notes, October 26, 2011). Making connections,

observations, and comments demonstrates that students are making meaning from the text and

actively engaging with it. All students asked for help reading words when supportive features

weren't available, which showed that they were engaged in reading because they wanted to know

what all of the words were to help them make sense of the text.   All of the behaviors that

students showed that indicated engagement led me to believe that electronic texts make the

reading experience more exciting for children, so teachers should use electronic books along

with traditional books to instill a love of reading in students.

       When comparing the students' preferences between reading traditional books and

electronic books during Session two, all three students chose the electronic book. The results of

the post questionnaire for Session two are summarized below.

Table 1

Results of Post-Questionnaire for Session Two

Question	Joe's Response	John's Response	Jane's Response
Did you like hearing the regular book? The electronic book?	Yes Yes	Yes Yes	Yes Yes
Which book did you like better? Why?	E-book because it was more sillier because of the pictures. Frank moved.	E-book because they were moving. The people in the story did flips and stuff.	Circled both. Can I choose both? They were both funny.
Which book was easier to understand? Why?	E-book because it was louder and more sounds like the car and the screaming.	E-book because I could hear it. The monster and people talked.	The e-book because you can hear him (the character) talk and he moves around.

Would you read the regular book again? The e-book?	Yes Yes, definitely!	Yes Yes	Yes Yes, I would.
Other comments:	I like it.	To his teacher after: "Man I love that monster story! I can't get it out of my head!" "Joe, did you like the monster on the computer? It was so cool!"	Can I read the e-book again now? Can I follow along in the regular book? I wish it read what people said in speech bubbles on the computer.

Based on the post-questionnaire, the students really enjoyed the animations and seeing

the characters that they saw in the static pictures of the traditional book come to life on the

computer screen. Although the researcher read using different voices for each character, the

voices used on TumbleBooks appealed more to the students, and they also enjoyed the music and

sound effects. All three students asked to read the book a second time, which shows how

motivating and engaging it was to them. These reactions led me to believe that reading electronic

books enhanced the reading experience for students and is helping students develop a love for

reading. Electronic books make sustained and repeated readings more attractive to students

because they want to try out the number of digital options available, which helps them internalize

the text and story content (de Jong & Bus, 2002).

One specific example that demonstrated that students exhibit increased engagement while

reading an electronic book rather than a traditional book was Joe's reaction to texts during

session one. The researcher observed Joe reading an electronic book on BookFlix of "The Three

Little Pigs" on the computer (Field Notes, October 13, 2011). Before reading online, he had

been reading the traditional text aloud during guided reading with his teacher. During their time

together, he was moving around, putting the book down repeatedly, spinning in his chair, and

stopping to ask questions that were irrelevant to the lesson such as "When will it be lunch time?" (Field notes, October 13, 2011).   He got through reading the traditional text even though he said that he did not want to read anymore, and then his teacher asked him if he would like to listen to the electronic version. He said "Yes, please!" and smiled. The version of the story on BookFlix had animated characters with different voices, sound, and a narrator reading the text. Words were highlighted along with the narrator's reading. Based on field notes, Joe sat down at the computer and remained engaged in reading the text from beginning to end. He never took his eyes off the screen for the entire book. He asked to turn the volume up to hear better, and read the words that he knew along with the narrator. He laughed at appropriate parts, pointed at the screen three different times when characters were speaking, and rewinded the video to watch another part again (Field Notes, October 13, 2011). After reading, he asked if he could read the book again. This was the opposite of his reaction to the traditional book (Field Notes, October 13, 2011) and means that the electronic book kept him more engaged than traditional books, so if his teacher uses other electronic books in her lessons he may be able to gain more literacy skills because he is actively involved and on task instead of distracted.

John and Jane demonstrated similar reactions to the regular and electronic books. They both had their eyes focused on the book the whole time, laughed and smiled at certain points, and noticed details from illustrations. Jane also looked carefully at each word in the electronic book, and noticed that some of the text had illustrations, such as an S shaped like a snake.   She pointed these out again in the electronic text, and was sad to realize that the narrator did not read the speech bubbles in the story unless they were spoken by Frank, the main character. The researcher observed that both John and Jane responded more strongly to animations than static illustrations. They laughed more, pointed things out to the researcher, and immediately asked to

read the story again. This is consistent with the study by Moody, Justice, and Cabell (2010) that found that preschool students supported by adults demonstrated similar but slightly higher amounts of persistence, enthusiasm and compliance with reading e-storybooks rather than traditional storybooks.

Strengthened Reading Comprehension of Struggling Readers

The second theme that emerged from research was that electronic books strengthened the reading comprehension of the struggling readers in this study based on audio transcriptions of student retellings. Two out of three students' retellings and answers to comprehension questions were more detailed after reading the electronic versions of books than traditional books, which is consistent with the studies done by Seyit (2010), Pearman (2008), Matthew (1996), and Verhallen et al. (2006) that showed that students scored higher on retellings when reading electronic books over traditional picture books.

Joe, the below grade level reader, was one of the students who had more detailed retellings of electronic books than traditional books. Evidence of this was apparent during the first session observed. During session one, Mrs. Little asked Joe a series comprehension questions after he read the traditional version of the three little pigs about the characters, setting, and plot. Their conversation transcribed from an audio recording was as follows:

Mrs. Little: Who were the characters in this story?

Joe: The pigs and a wolf

Mrs. Little: Where was the story? Where did it take place?

Joe: Their house

Mrs. Little: What happened at the beginning of the story?

Joe: There were three little pigs.

Mrs. Little: Yes. And what did the pigs do?

Joe: I don't know.

Mrs. Little: What happened in the story to the pigs?

Joe: Nothing. I don't remember. (Transcription of Audio Recording, October 13, 2011).

Once he read the electronic version of "The Three Little Pigs" on BookFlix, she asked

him the same questions and he was finally motivated to answer, think, and discuss the text. His

answers following his reading of the electronic text were as follows.

Mrs. Little: What characters were in this story?

Joe: Three little pigs, a big bad wolf and a Mom.

Mrs. Little: What is the setting of this story?

Joe: A house made of straw, a house of sticks, and a house of bricks that was colorful.

Mrs. Little: Can you tell me what happened at the beginning of the story?

Joe: In the beginning, they build their houses and the wolf came over and ate two of

them up.

Mrs. Little: And what happened in the middle and at the end of the story?

 Joe: The wolf went to the other pig's house and huffed and puffed and couldn't blow it

down. At the end the wolf went in the pig's chimney and got burned and the last pig ate

him up! (Transcription of Audio Recording, October 13, 2011).

Mrs. Little stated that the second retelling is a strong one for Joe, but that it might have

helped that he had read the book two times at this point (Field Notes, October 13, 2011). This

data leads me to believe that reading electronic books can help improve reading comprehension

for struggling readers because they use the animations and sounds to get a better sense of the

story. In Joe's second retelling after reading the electronic book, he included one more character

(Mom), additional settings (a house made of straw, bricks, and sticks), and eight more details.

Mrs. Little and I believed that Joe was able to recall and remember more facts based on the

pictures, animation, and sounds because the pages that he laughed at or pointed to were the ones

that he included in his retelling (Field Notes, October 13, 2011). This belief confirms the

statement from a study by Bus, de Jong and Verhallen (2006) that "animations and pictures

provide a rich, eye-catching setting, which help students visualize where and when the story

takes place, and assists them in building or activating more complete schemas of stories" (p.

411). It was further proven during session three, when Joe recalled five out of 23 different types

of feet from the story *The Foot Book* by Dr. Seuss. Based on the audio transcription of our

session, he said "Um, there was pig feet, big feet. I think clown feet and sick feet." and "Fuzzy

feet! The monster's! And wet feet in a puddle" (Field Notes, October 26, 2011). These were all

based on pictures that he had laughed at and remembered. This data shows that supportive

features of electronic books helped Joe, a struggling reader, remember more details from the

story to enhance his retelling. Similarly, first graders in a study by Korat (2010) were able to

remember and reproduce stories that they read electronically five times in an impressive manner,

demonstrating higher levels of story understanding than when they read traditional print books.

Electronic books aid students in comprehending text because they offer a greater repertoire of

comprehension cues than printed texts (Pearman & Lefever-Davis, 2006). Electronic books

integrate multiple senses through sound effects, tactile features and visual animations that

dramatize word and story meanings to reinforce concepts and vocabulary and give the story

multiple layers of meanings (de Jong and Bus, 2002).

John's retelling of *Frank was a Monster Who Wanted to Dance* was also stronger after he

read the electronic book than just the traditional book during session two. John, the reader who

is at grade level, was asked questions that were similar to ones the researcher heard the teacher

asking during session one.   He drew questions out of a Frankenstein toy that asked him to tell

the characters, setting, and plot of the story ("What happened at the beginning, middle, and

end?"). After reading the traditional print book, he was able to name Frank as the character, his

house as the setting, and retold the plot by saying "He wanted to dance so he went to the theater

and danced and then he fell apart" (Transcription of Audio Recording, October 20, 2011). After

reading the electronic book, he said "There was Frank the monster in the story and his cat, and

the audience who said "yuck" and "ew" and the person who said "Bravo!" When asked "Where

was Frank?" he said "at the theater on stage and in his car with eyes to drive to the theater." His

retelling of the plot was "At the beginning he was sitting with his cat and said 'I can dance if

they give me a chance.' So then he put ants in his pants and drove to the theater and danced.

Then his head fell off and everything else and everyone ran away so he said, 'I may be a monster

but man can I dance'" (Transcription of Audio Recording, October 20, 2011). This retelling had

more details, many of which were the ones that John saw animations of and laughed about. He

was able to remember specific quotes, which may be because of the interesting voice that they

were read in. This data shows that electronic books helped, John, an emergent reader, produce

more detailed retellings, because of the supportive visual and auditory features. These findings

based on data collected on John and Joe are consistent with a study done by Seyit (2010), which

showed that fourth grade struggling readers better understood plot, problems and resolution in

electronic storybooks with animation than with the static pictures available in printed storybooks.

Students were able to remember more details, and give longer and more creative retelling of

events in the story. Literature by Zucker, Moody, and McKenna (2009) supports my belief that

reading electronic books increases comprehension of struggling readers and states that " a small

dose of tantalizing hotspots and congruent animations—that is, animations that support or

enhance the story—appear to improve comprehension" (p. 53).

Supportive Features for Word Reading

Another theme that emerged from my study on the effect of electronic books on the

reading experience of first grade students was that electronic books include supportive features

for word reading for students below, at, and above grade level. As previously stated, electronic

books may include a variety of supportive features such as narration to model fluent reading,

highlighted text as the narrator is reading so that students can match the sounds of words to

printed words, audio that reads, pronounces, and sounds out a word when it is clicked, and a built

in dictionary to look up words. All first grade students that were observed in this study used

features to help them read words, with varying degrees of support from the teacher. This finding

is significant because it shows that electronic books can be used in schools to allow students to

read texts independently that may be at or above their reading level without the support of an

adult. Electronic books can teach students to pronounce and read new words that they otherwise

may not be able to decipher. This is consistent with other studies previously mentioned that have

shown that emergent reading skills such as decoding (DeJong & Bus, 2003), phonological

awareness (Chera & Wood, 2003; Shamir & Korat, 2007), vocabulary (Verhallen & Bus, 2010),

concepts of print (Moody, 2011; Shamir & Shlafer, 2011) and fluency (Oakley & Jay, 2009)

have been improved through young students' reading of electronic texts.

When observing the students reading independently at centers time during the first

session, I witnessed John using such features immediately. Electronic books helped John decode

words as he read. He was reading an electronic book on Starfall called *Robot and Mr. Mole.*

When he came to a word that he did not know, "hose," he tried to sound it out on his own, but

then clicked on the word when he couldn't figure it out. When he clicked on the word, it was

sounded out, and the sounds "h," "o-e," and "s," were highlighted, then the entire word was

highlighted and pronounced. This feature draws the reader's attention to each word in the page

and helps them learn the valuable phonics skill of matching the sounds of language with the

printed word (de Jong & Bus, 2002).   John then repeated the whole word (Field Notes, October

13, 2011). With this feature, John learned new words and figured out words that he didn't

previously recognize so that he could continue reading. Zucker, Moody, and McKenna (2009)

observed that electronic books that pronounced words for students in their study reinforced a

"look-say connection between visual and auditory forms of the same word" (p. 50). This data

showed me that electronic books have the potential to teach young students emergent literacy

skills such as decoding to help them read new words. The electronic book provided the

assistance John needed to continue reading and understanding the text, much like a teacher

would have, and allowed him to continue reading independently.

Similarly, Jane used the supportive features of electronic books to learn the pronunciation

and definition of new vocabulary words. She was reading a non-fiction text called *Let's Visit a*

Dairy Farm during the first session that went along with a fictional story that she had just viewed

on BookFlix called *Click Clack Moo: Cows that Type.* This electronic book highlighted some of

the longer vocabulary words for her. When she clicked on words such as "udder" and "cartons"

it pronounced them for her and provided her with a simple definition so that she could continue

reading and understanding the text. This data is significant because it helped shows that she is

using electronic features as a tool to develop her vocabulary as she is reading so that she can

continue reading independently without the help of a teacher. This data is consistent with studies

by Segars, Takke, & Verhoeven (2004) and Verhallen & Bus (2010) that found that multicultural

kindergarten students and five year old students learned new expressive and receptive vocabulary

words from a computer-mediated storybook reading.

Evidence of supportive features used was further demonstrated during session three,

when students were reading Dr. Seuss books aloud by themselves on the researcher's Nook. The

post-questionnaire that the students were given showed that using electronic books on the Nook

helped students read and taught them new skills. The results of the questions relating to

supportive features on this questionnaire are summarized in the chart below.

Table 2

Results of Post-Questionnaire for Session Three

Question	Joe's Response	John's Response	Jane's Response
Did you learn anything new reading the e-book on the Nook?	Yes, how to say some words.	A lot. How to turn pages and make it say the pictures and what this word is. (fuzzy)	I learned new words and how to say them.
Did the Nook help you read in any way? How?	It told me words that were hard.	It tells me words I don't know.	It reads the words and tells me how to say them and tells the name of the pictures so I know for next time.
Would you rather read on the Nook or the computer?	Computer because there are more games to play with the books.	Nook because you can touch it and turn the pages and you can sit anywhere with it, like the rug.	Both because I like hearing someone read the stories and sounds and when the pictures move.

As previously stated, Jane, the above grade level student, used tools in electronic books

to help her pronounce and define words that she did not know. When Jane was reading "Hop on

Pop" during session three she attempted to sound out the word, "upside," then asked the

researcher what it was when she was unsuccessful (Field Notes, October 20, 2011). I prompted

her to click on it, and the narrator pronounced it for her. She then used the picture to determine

what it meant because it correlated directly with the text. This finding is consistent with the

study by Medwell (1998) that found that word recognition in the context of the story improved

significantly after students were given access to CD-ROM talking books because of their use of

more context clues and illustrations. After the first prompt, whenever Jane came to words she

did not know, like "bumped", or "yelp," she clicked on them, listened to the narrator read them,

then repeated the whole sentence herself using the word that she had not previously recognized.

This data shows that electronic books provide supportive features for students to help them read

words, which is similar to the findings of a study by de Jong and Bus (2003) that playful

interaction with these facilities explains why some preschool children's word recognition

improved after repeated explorations of digital text. Like Jane, children who had some emerging

decoding skills showed interest in playful interaction with the printed text by clicking on separate

words or phrases, exploring the relationship between written and spoken words (de Jong & Bus,

2003). When Jane could not determine what "yelp" meant from context or pictures and had to

ask me, but if it were another electronic book with a dictionary feature she could have looked it

up within the text herself. She later clicked on more difficult words such as "Constantinople"

and "Timbuktu" without attempting to sound them out. She began to use the electronic book's

features for support, rather than asking a teacher. This narration feature taught her words and

allowed her to continue reading independently, rather than getting stuck on a word or

substituting another one that might change the meaning of the sentence. Of the three children in

this study, Jane used supportive features in an appropriate way to help her read the most. This

may be because she self-monitors herself when reading and genuinely is curious about each new

word that she meets.

Potential Distractions of Electronic Books

Although it was observed that electronic books helped support student's word reading and comprehension skills, some features also proved to be distracting when used without proper directions from a teacher. None of the students had read on a Nook before, as reported on the questionnaire. The boys, Joe and John, who are both struggling readers, needed higher levels of support from the researcher to activate the supportive features. Although the book provided instructions within it to "swipe" to turn pages, "Tap the pictures" or "Tap words or press and hold paragraph," the boys needed help reading these directions and applying them. They both got distracted by the narrator's assistance at first and overused the supportive features while reading, which is consistent with studies by Lefever-Davis and Pearman (2005 and 2006) and de Jong and Bus (2003) that found some supportive features of electronic books to be unsupportive or distracting.

When Joe learned that he could click on words to have them pronounced, he started clicking on them one by one to make it read to him instead of only using it when needed (Field Notes, October 26, 2011). This interaction stopped him from attempting words on his own as he over-relied on the narrator. He no longer had to read words at all, but was having the text read to him, except without fluency. This observation was also the case in a study by Lefever-Davis and Pearman (2005) when many students also over-relied on supportive features to read for them instead of independently.

Joe and John both started using the "Tap the pictures" and "Tap words" features inappropriately. When Joe and John learned that clicking on pictures produced words, they clicked on everything frantically at once, over and over, laughing and smiling (Field Notes, October 26, 2011). Behaviors such as these distracted John and Joe from reading, and they

needed to be instructed to read it first, and then click on words they needed help with, and each picture once. This data is similar to findings of de Jong and Bus (2003) who noticed that some students who used electronic books took a spectator stance, viewing the electronic book as a game and began passively looking at the animations rather than reading, causing them to miss the message of the text.

          John stated that another downfall is that sometimes the process of the computer pronouncing words takes too long, and the electronic book can freeze at times, which is consistent with a study by Lefever-Davis & Pearman (2005) that showed that some students were distracted by the digital features. In their study, sometimes an overabundance of graphics made it take longer for the pages to turn, which frustrated students and certain children spent more time activating hotspots than actually reading.

          One unsupportive feature unique to the Nook and other handheld reading devices is that it was difficult for the two boys to turn the pages by swiping. If they swiped too much, they turned multiple pages at a time and did not notice, which would make reading the whole story impossible. The simple left or right arrows used in TumbleBooks and other electronic books were much easier for the young students to navigate successfully.

          Data from my study showed that students needed to be monitored to make sure that they were using so-called supportive features appropriately. As Mrs. Little stated during the formal teacher interview, one disadvantage of reading electronic books is that "students must be trained to navigate them (electronic books) independently. Sometimes there are technical issues and it takes a long time to load, which minimizes reading time" (Interview, October 13, 2011). Despite the few disadvantages, with proper training, electronic books can be used in the classroom to help students read. Evidence of this was that Jane was able to activate all of the features with

only one prompt and use them appropriately because she was a stronger reader, able to follow the directions that she read within the electronic books.

Implications

The findings of my research provide several implications for teachers. First, technology, such as electronic books, should be used by all teachers in the classroom to support literacy learning. Second, electronic books can be used to motivate struggling or reluctant readers to develop a love of reading. Lastly, teachers must be selective in choosing the electronic texts for their students that are free from distractions, and train students to navigate them appropriately.

The first implication from my study is that technology, such as electronic books, should be used in all classrooms to support literacy learning. Since students of today are growing up in an increasingly technological world, technology must be integrated into classroom literacy instruction to bridge the gap between their primary and secondary discourses. Teachers today must be familiar with the key concepts of multimodality and use digital texts in their classroom. Gainer & Lapp (2010) discuss remixing what is currently known about effective literacy instruction with new literacies. Students must participate in collaborative literacy experiences with technology as a component, tool for and topic of instruction. Gainer and Lapp (2010) believe that remixing makes instruction in school connect to how students are making meaning in outside of school literacy worlds. Electronic books are a wonderful way to incorporate technology into literacy instruction. Using electronic texts in the classrooms will help students improve their literacy skills in the areas of text comprehension, vocabulary, and phonics and also digital literacy skills such as navigating through digital texts and reading nonlinear, multimodal texts.

The second implication for teachers is that electronic books can be used as a tool to motivate and engage reluctant and struggling readers in reading for pleasure. Many students do not read because they feel that they cannot read. One student in this study never wanted to read traditional books because he struggled, but would gladly spend his free selection period listening to an electronic text on the school's website. This behavior was also present in the study by Oakley and Jay (2009) that showed that two reluctant readers' reading time quadrupled when they were assigned electronic texts at home. Electronic books provide supports for students who cannot navigate through texts at certain levels independently. Simply listening to and enjoying the narration of an electronic text is helping reluctant and struggling readers develop a love of reading, so teachers should introduce young readers to them at a young age.

The final implication for teachers from my research is that teachers must carefully select the electronic texts that they use in the classroom and provide students with training and explicit directions when using technology. As previously discussed, electronic texts may be distracting or have unsupportive features that hinder the reading process. Teachers must critically examine each text to make sure that the features, tools, and hot spots are congruent with the story to support student's understanding and comprehension. They must model and demonstrate appropriate navigation and use of electronic texts, and initially supervise students using electronic texts until they are proficient in reading them appropriately. High quality electronic books can be a powerful tool for literacy learning when children use them effectively.

Conclusions

The purpose of this study was to determine the effect of electronic books on the reading experience of first grade students. Since literacy is a social practice based on sociocultural theory, and the New Literacies studies bring about the need for integrating literacy and

technology, I observed, recorded and interviewed three first grade students at different reading

levels reading electronic books in their classroom on the computer and the Nook to see how this

technology enhanced their literacy experiences. Previous research from Oakley and Jay (2008),

Roskos, Burstein, Breueck, You, and O'Brien (2011), Zucker, Moody, and McKenna (2009),

Seyit (2010), Medwell (1998), de Jong and Bus (2003) and Lefever-Davis and Pearman (2005)

showed that electronic books increased student motivation and engagement, were used as a

scaffold for word reading, and positively affected comprehension. My data yielded similar

results and I found that electronic books increased student motivation and engagement for all

students, strengthened the comprehension skills of struggling readers, and provided supportive

features for word reading. However, electronic books had potentially distracting features as

well. This implies that teachers should use electronic books in the classroom to teach literacy

and digital literacy skills and motivate struggling and reluctant readers, but also be selective

about the texts that they use, train students to use technology, and monitor them at first until they

prove to become proficient in using them appropriately.

The research that I completed was limited in some ways. It was limited by age range,

because I worked with younger students who were all six years old in the first grade. Working

with older, more independent students may have produced varied results relating to the use of

supportive features of electronic books, and the impact of the electronic book on literacy

development. Older students may have used additional features such as underlining and note-

taking capabilities to increase their comprehension that are not present in electronic texts for

younger students and would also be able to better verbalize and discuss which features helped or

hindered their reading process. My study was also limited by race and social class, as

participants were all Caucasian or Hispanic and middle class. There may have been different

reactions or text interactions if I had worked with other students of different backgrounds, ethnicities, or from different areas such as urban or rural settings. My research findings only apply within this particular context, a first grade classroom in a suburban neighborhood.

These limitations leave me with many unanswered questions. I am left wondering, how would electronic books impact the reading experience of older children who are already fluent readers? Also, how would children of different races react and interact differently with electronic texts than the ones used in my study? In the future, I would like to examine the use of electronic books across many different grade levels and by a more diverse group of students to see how their reading experiences are affected. I would also like to view students using the Nook and electronic book websites on the computer for longer periods of time to see if they use more supportive features and remain as motivated and engaged as they gain proficiency and familiarity with the technology. Would students remain excited to read electronic books on the computer and Nook if they did it daily?

Despite the limitations, this study demonstrates that electronic books are valuable tools to use in the classroom to promote literacy skills as well as important twenty first century skills to help students succeed in our technological society. When teachers use electronic books in their classroom, the reading experience of the students is enhanced through exciting visual and auditory images and supportive tools which help them understand the text and learn new vocabulary. All teachers should consider using them in their classroom.

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Appendix A

Pre-Questionnaire

How do you feel about reading?

How do you feel about using the computer?

Have you ever played reading games on the computer?

YES   NO

Have you ever read a book on the computer?

YES   NO

How do you feel about reading a book on the computer today?

Have you ever seen a Nook, Kindle, or an IPad?

YES   NO

Appendix B

Post Questionnaire (Day 2)

Did you like hearing the regular book?

Yes   No

Did you like hearing the electronic book?

Yes   No

Which book did you like better? Why?

Regular   E-book

Which book was easier to understand? Why?

Regular   E-book

Would you read the regular book again?

Yes   No

Would you read the e-book again?

Yes   No

Other comments:

Appendix C

Post Questionnaire (Day 3)

Did you like reading a book on the Nook?

Did you learn anything new reading the e-book on the Nook? What?

Did the Nook help you read in any way? How?

Would you rather read on the Nook or the computer? Why?

Would you read another book on the Nook?

Do you have any other comments about your reading experience?

Appendix D

Formal Teacher Interview

In what ways do you integrate technology into your literacy instruction?

How do you use electronic books with your students?

What websites do you use to access electronic books?

How often do you use electronic books in your classroom?

What are the advantages of electronic books?

What are the disadvantages of electronic book?

How do your students feel about electronic books?

How do electronic books affect the reading experience of students?

How do electronic books impact students' learning of literacy skills?

Are there any other comments that you would like to share about electronic books?