

The Effect of Using Electronic Books
During Sustained Silent Reading on the
Reading Achievement and Motivation of First Grade Students

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ABSTRACT

The purpose of this study was to examine the impact on reading achievement and motivation of using digital texts versus traditional, printed texts with first grade students during Sustained Silent Reading (SSR). Fifty-four first grade students from two existing classes at a suburban elementary school in the mid-Atlantic region participated in the study. All students were reading on an average or above average reading level. The measurement tool used to evaluate reading achievement was the Fountas and Pinnell Benchmark Assessment and the tool used to evaluate motivation was the Motivation to Read Profile-Revised (MRP-R). This study utilized a pre-test/post-test quasi-experimental design, in which students' reading achievement and motivation scores from December 2015 were compared to their scores from March 2015, following three months of intervention. The treatment and control groups did not differ significantly on their pre-test motivation and achievement. During the treatment period, students in the control group were only permitted to read traditional, printed texts during their daily 30 minutes of SSR, while students in the experimental group were only permitted to read digital texts. While both groups showed positive increases in reading achievement and motivation, results indicated the gains in reading levels were not statistically significant for the students who read digital texts compared to those who did not ($t=0.16$, $p=0.88$) and results indicated the gains in reading motivation were not statistically significant, as well ($t=-0.78$, $p=0.44$). Therefore, the null hypotheses were not rejected. With the continued drive to integrate technology into the classroom, further research is necessary to determine the impact on achievement and motivation of using digital texts with school-age students in all grades and with varying degrees of reading proficiency.

CHAPTER I

INTRODUCTION

Overview

Most educators would agree that a student's ability to read and comprehend text is a critical foundational skill, necessary for success in daily life. Reading is the gateway that opens the doors to opportunity and all other fields of study. Therefore, it is critical that teachers help their students achieve success with foundational reading skills.

One of the most common practices that educators use to increase children's reading proficiency is to allow them to spend time reading independently in school. Extensive research has been done regarding the effects of independent reading, and researchers agree that there is a positive correlation between time spent reading independently and reading achievement.

Allington (2001) attributes this to the fact that independent reading allows students time to practice the skills and strategies they are taught in the classroom in genuine reading situations. In addition, time to practice decoding text allows students to become more proficient with decoding, which frees their cognitive processing to comprehend and derive meaning from the text (Trudel, 2007). As a result, the Commission on Reading's report, *Becoming a Nation of Readers*, recommends that students engage in two hours of Sustained Silent Reading every week (Miller, 2012).

Unfortunately, most students are not actively engaged in reading text during the independent reading periods they are given throughout the school day. Many reading teachers at the elementary level have embedded twenty to thirty minutes of independent reading time into their daily instruction, but this researcher has walked into classrooms during independent reading time and her observations were disappointing. Students could be observed playing with items in

their desks, whispering to classmates, holding books upside-down, and simply flipping the pages in their books. Very few students were using this time to actively engage with text. Ermitage and Van Sluys (2007) found that even those students who are capable of reading rarely spend time reading for pleasure. It seems as though many students in elementary schools are simply lacking the motivation to read. Therefore, educators need to find a way to increase students' motivation to read in order to effectively increase their reading achievement.

Ciampa (2012) suggests that literacy learning experiences will be more motivational and personally relevant to students if they reflect students' out of school literacy experiences. Since many students' out of school literacy experiences involve interacting with text through the use of an electronic device, it is possible that students would be more motivated to read in school, if they were reading electronic texts. Students today are digital natives whose brains are wired to acknowledge electronics and they find electronics to be more intriguing than any other form of entertainment (Wright, Fugett, & Caputa, 2013). Thus, teachers can capitalize on their interests in electronics by integrating digital texts into the classroom. If in fact students are motivated by digital texts, perhaps allowing students to use e-books during independent reading time will increase the amount of time students spend reading independently, which will ultimately increase students' reading achievement.

Aside from the potential of increasing students' reading achievement, this is particularly important when one considers the financial investment that school districts throughout the country are making by purchasing one-to-one devices for their students. It stands to reason that districts that purchase tablets for each of their students will want students to spend a significant amount of time using the devices for instructional purposes. In this researcher's school district, math teachers are already being instructed to have students spend one to two hours per week on

their devices to access a math program the district purchased. It is likely that a reading program will not be far behind. Therefore, it is important that research studies be conducted to explore whether or not using electronic devices in the classroom will have a positive impact on reading achievement. Before the education pendulum swings to an extreme where students spend their entire day in the classroom on their devices, it is important to investigate the merits of using technology for different aspects of classroom instruction.

Statement of Problem

This study was designed to determine if using digital books versus traditional books in print during Sustained Silent Reading (SSR) with first grade students would have a positive effect on students' reading achievement and also on the students' motivation to read.

Hypothesis

The null hypotheses for this study are as follows: (1) There is no difference in the reading achievement of first grade students when using digital books or books in print during Sustained Silent Reading, and (2) there is no difference in the reading motivation of first grade students when using digital books or books in print during Sustained Silent Reading.

Operational Definitions

The independent variable used in this study was the medium of texts students read during Sustained Silent Reading time, whether it was digital books or books in print. ***Books in print*** are defined as printed works of fiction or nonfiction, on sheets of paper, fastened or bound within a cover. ***Digital books*** are defined as digital publications that maintain the format of a traditional book and can be read on computers and other electronic devices. Digital books contain text, images, or both, and can also contain additional supportive features for reading text.

The dependent variables in this study were *student reading achievement* and *student reading motivation*. Reading achievement is defined as a student's ability to increase his/her independent reading level as measured by the Fountas and Pinnell Benchmark Assessment System. The assessment evaluates fluency, decoding skills, and comprehension skills, which represent all key components of reading identified by the National Reading Panel, excluding vocabulary. The Fountas and Pinnell Benchmark Assessment utilizes a series of texts and comprehension questions that can be used to identify students' current independent and instructional reading levels. Reading achievement was measured by each student's ability to increase his Fountas and Pinnell reading level from the pre-test to the post-test.

Reading motivation is defined as a student's intrinsic desire to spend time reading independently. Motivation was measured by using The Reading Survey component of The Motivation to Read Profile (MRP). Students' responses were evaluated using the MRP rating scale to determine students' self-concept as readers and the value they place on reading. Reading motivation was measured by an increase in students' scores on the MRP from the pre-test to the post-test.

CHAPTER II

REVIEW OF THE LITERATURE

This literature review explores the potential impact on motivation of using digital texts during independent reading time in school. Section one discusses the overall importance of reading, and more specifically, the importance of time spent reading independently. Section two describes factors that influence a student's motivation to read, and ultimately time spent reading independently. Section three examines several interventions that have been utilized in schools to attempt to increase students' motivation to read. Section four investigates the potential impact of digital books on motivation and engagement, including the characteristics of quality digital books and studies linking digital books to increased achievement in the five key areas of reading: phonemic awareness, phonics, comprehension, vocabulary, and fluency.

The Importance of Reading

According to Mahdavi and Tensfeldt (2013), knowing how to read is an important precondition for much of what makes a person successful in modern life. A person must know how to read in order to get most jobs, pass the test to get a driver's license, and access menus, contracts, transit schedules, and more. "Reading is an essential skill for both educational and professional success; it is the best way of staying in touch with vital new findings and increasing one's academic and professional standing" (Karasakaloglu, 2012, p. 1940). The ability to read offers a person social power and the opportunity to make his or her life meaningful. Zucker, Moody, and McKenna (2009) posited that in order to gain proficiency in reading, children must develop two major skill sets: the ability to rapidly decode printed words and the ability to understand and construct meaning from text. Because reading is a basic strategy for learning, it is a skill that all teachers must develop.

The Importance of Time Spent Reading Independently

One commonly used strategy to increase children's reading proficiency is to allow them to spend time reading independently in school. According to Allington (2001), reading practice is a powerful contributor to the development of accurate, fluent reading, which enhances comprehension. Students must spend substantial time applying the reading skills and strategies they are taught before they can develop proficiency in reading. Students need time to transfer and apply the reading skills that are explicitly taught in class to reading in context. Information processing models propose that student practice in decoding leads to automaticity in decoding, which ultimately frees a student's processing capacity to attend to higher order skills, such as comprehension (Trudel, 2007). Since the entire purpose of reading is to make meaning from the text, it is critical that students have opportunities to practice decoding so that they can devote their mental energy to making sense of what they read. As a result, The Commission on Reading's report, *Becoming a Nation of Readers*, recommends that students engage in two hours of Sustained Silent Reading every week (Miller, 2012). Sustained Silent Reading (SSR) relies on several accepted parameters, including allowing students to select their own reading materials, having the teacher model good reading behaviors while students are reading, requiring no accountability assignments tied to what has been read, and providing a ten to thirty minute period of uninterrupted reading. The two main reasons teachers use SSR in the classroom are to raise student reading achievement and to foster positive student perspectives toward reading (Ermitage & Van Sluys, 2007).

In a review of the literature, Lewis and Samuels found that 45 out of 49 studies suggested that increased volume of reading caused improvement in reading skills (Topping, Samuels, & Paul, 2007). Studies have shown that the amount of time a student spends reading meaningful,

connected text can result in increased vocabulary knowledge, fluency, word recognition, background knowledge, and comprehension (Miller, 2012). The increased skill set developed through time spent reading independently has been attributed to increasing students' enjoyment of reading, expanding their experiences, and providing them with context to practice their reading skills (Johnson & Blair, 2003). Ermitage and Van Sluys (2007) suggest that SSR provides time for students to develop knowledge of spelling and complex sentence forms. They suggest that these areas are too extensive and have too many exceptions to be taught explicitly, yet through wide reading, students are able to independently develop an understanding of the nuances of language.

Independent reading time in school has also been shown to have additional benefits. By providing students time to read in class, they become so engrossed in books that they cannot wait until the next day to continue reading, and as a result, they develop a habit of reading at home, as well (Miller, 2012). This increases the opportunities students have to practice reading skills and become more proficient readers. In addition, time spent reading and the freedom to choose their own books leads many children to discover a love of reading. This love of reading can translate to extensive independent learning outside of the classroom.

The problem becomes that struggling readers, who need the greatest number of opportunities to practice, often read the least. Miller (2012) suggests that poor readers often read three times less than their peers. This phenomenon is best described by Stanovich (1986) and is known as The Matthew Effect. According to Stanovich (1986), during the early years of learning to read, students who struggle to read, read less, learn fewer vocabulary words, and lag farther behind children who break the code, read more, and subsequently learn more through their avid reading. In addition, Ermitage and Van Sluys (2007) reported that in a survey

conducted with 151 sixth and ninth graders, 92% of the students were categorized as “Not-Readers,” or those who seldom or never read for pleasure. Thus, even those students who are capable of reading are not applying their abilities for recreational reading purposes. As the importance of reading has already been established, as well as the fact that independent reading contributes to increased reading achievement, it is critical that all students spend time reading independently. “Reading achievement is influenced by the amount of reading one does, which in turn is influenced by one’s motivation to read” (Smith, Smith, Gilmore, & Jameson, 2012, p. 202). Therefore, in order to increase the amount of time a student spends reading independently, one must consider the motivational factors that influence reading.

Factors That Influence Motivation to Read

Guthrie and Wigfield (2000) presented an engagement model for reading development. They suggested that the development of reading ability is closely linked to reading the reader wants to do, reading that is done for a purpose, and reading that is done with motivation on the part of the reader. Thus, motivation plays a key role in reading. It has been suggested that there are two sides to reading—one side being the skills required to read and the other being the motivation to engage in reading tasks (Cambria & Guthrie, 2010). If motivation is not treated as an equally important component of reading, there is the potential for society to be filled with people who are capable of reading, but who choose not to engage in the task. By increasing student motivation, students desire to spend more time reading, which translates to all of the previously mentioned benefits of independent reading. Therefore, it is critical to consider the factors that influence reading motivation.

Motivation is defined as the values, beliefs, and behaviors surrounding reading for an individual (Cambria & Guthrie, 2010). There are two types of motivation cited in the research:

intrinsic motivation and extrinsic motivation. Intrinsic motivation is something a person does for its own sake or because of one's curiosity or interest (Neugebauer, 2013). Extrinsic motivation is something a person does because they receive a reward. The problem with extrinsic motivation is that it does not increase achievement long-term. For example, if a student reads a book just to get a reward, as soon as he receives the reward, he will likely stop reading, as there is no additional incentive to propel him to read more. Extrinsic rewards cause students to focus more on the rewards than the learning. Marinak and Gambrell (2008) found that students who were rewarded for reading with a book or who received no reward at all were more motivated to engage in subsequent reading than children who were rewarded with non-literacy tokens. Therefore, in order for motivation to have a lasting effect, it must come from within.

A review of the research on reading motivation highlighted four key factors that influence a student's motivation to read, including autonomy, self-efficacy, social relatedness, and interest. Autonomy refers to a student's ability to exercise control over his learning. Learners who lack input in the decision-making process in a classroom feel powerless and unmotivated (Miller, 2012). Neugebauer (2013) found that when students felt autonomous in their learning environments, they showed an increased desire to engage in reading activities. A simple method for increasing autonomy in the classroom is to allow students to select their own books to read during SSR. Student self-selection of texts gives them a sense of control. It also allows them to pursue existing interests, which is motivational (Villiger, Niggli, Wandeler, & Kutzelmann, 2012). In order for self-selection of texts to be meaningful, teachers must have a large supply of books in the classroom to provide students with a myriad of books aligned with their interests and reading levels. A 2015 survey conducted by Scholastic reported that 91% of kids ages 6-17 said they are more likely to read a book if they were allowed to pick it out

(McElmeel, 2015). Teachers often struggle with allowing students to take control of their reading choices because they fear that students will not choose to read texts that challenge them. However, Johnson and Blair (2003) advise that teachers place too much focus on having students read books at their own level. They point out that adults sometimes choose to read books that are too easy for them. Reading books that are too easy for students can be motivating because it allows them to feel comfortable and confident with their reading ability, which influences their sense of self-efficacy.

Self-efficacy is a person's beliefs regarding his ability to accomplish a task or activity (Quirk, 2004). When people have positive self-efficacy and they believe they can accomplish a particular task, they are more motivated to participate. When they have negative self-efficacy and they believe they are doomed to fail at a particular task, they will typically try to avoid the task. Lower-achieving readers often exaggerate their limitations, so they completely stop trying to read, which causes them to miss opportunities to practice reading and ultimately the opportunity to become a better reader (Cambria & Guthrie, 2010). Self-efficacy is derived from the self-determination theory, which proposes that human beings are proactive and begin life with a high level of intrinsic motivation, but when they are subjected to repeated academic failures and they are pressured by adults to perform at a higher level, their motivation to achieve becomes driven by extrinsic rewards (Zentall & Lee, 2012). As previously discussed, intrinsic motivation is necessary for long-term achievement. Therefore, it is especially critical for teachers to help their struggling students develop self-confidence as readers so that they will become intrinsically motivated to read.

Belief in one's self is more closely linked to achievement than any other motivation throughout school (Cambria & Guthrie, 2010). Beginning in the early elementary years, students

develop beliefs about their ability to read, so it is important that these experiences are positive, to allow students to develop a positive self-efficacy (Quirk, 2004). Quirk suggests that teachers allow their students to set reading goals that are proximal and specific. As students meet their goals, they will feel successful, and it will promote a sense of self-efficacy, which will motivate them to keep reading. Students must receive the optimal level of challenge and meaningful feedback to enhance their perceptions of themselves as readers. Attempts to increase self-efficacy must take place within an emotionally safe and secure classroom so that students do not have to fear that their reading difficulties will lead to embarrassment or comparison with their more successful peers (Margolis & McCabe, 2004). Success with reading has the potential to begin a positive motivational cycle. If a student feels like he is becoming a better reader, his self-efficacy will increase, which will increase his motivation to read, which will likely lead to more time spent reading, which will ultimately serve to increase the student's reading skills.

Another factor that has been linked to reading motivation is social relatedness. Capen (2010) suggests that social interactions are motivational and have a positive influence on reading achievement. Older readers are motivated by book talks, book discussions, and other opportunities that allow them to share the books they have been reading (McElmeel, 2015). Gambrell, Palmer, Codling, and Mazzoni (1996) showed that students who engaged in frequent discussions about their reading with friends were more motivated and had higher reading achievement scores than students who did not have such interactions. Having the opportunity to share one's experiences with a book adds purpose to the task of reading. In addition, social interaction is motivational because classmates' comments during a book discussion introduce an element of surprise. Because the student does not know how his classmates will respond to his perceptions of a book, it adds an element of curiosity and interest for the reader. Finally, social

interactions can be motivational for readers because peers with positive reading habits can serve as role models for struggling readers to follow (Monteiro, 2013). When a student sees another student, like himself, making progress with his reading, it may increase the student's confidence in his own abilities, which will translate to an increased motivation to read.

Interest is also a key factor that influences a student's motivation to read. Guthrie and Wigfield (2000) suggest that when students consider a text to contain important and valued information, it will capture their interest and motivate them to read. If they can associate the text with their own experiences, they will be more deeply engaged in what they are reading.

According to Monteiro (2013), it is important to account for a student's enjoyment of a text, as affect and enjoyment influence the value the student places on the reading and his intrinsic motivation to read. In addition, research shows that students demonstrate a higher level of engagement in classes where the teacher valued reading and showed her enthusiasm for the task (Capen, 2010). When teachers are well read, they can expose their students to new book selections, in order to capture their interest and increase their motivation to read.

Highly motivated students want to read and choose to read for a wide range of personal reasons, such as curiosity, involvement, social interchange, and emotional satisfaction (Capen, 2010). Since motivation influences the amount of time a student spends reading and the amount of time a student spends reading influences a student's reading achievement, one can conclude that motivation is directly related to reading achievement. Therefore, it is critical for teachers to consider the factors that influence students' motivation and to address the needs of students who lack the motivation to spend time reading.

Interventions to Increase Motivation to Read

According to Marinak (2013), a national study was conducted in 1995 where 18,185 students in Grades 1-6 were surveyed using the Elementary Reading Attitudes Survey in order to determine their recreational and academic reading attitudes. The findings indicated that reading attitudes were most positive in Grade 1, but declined as students progressed to Grade 6. In addition, Capen (2010) suggested that compared to students in other countries, fourth graders in the United States were ranked astonishingly low in intrinsic motivation for reading. As a result of the reportedly low motivation to read for younger students, several motivation interventions have been utilized in an attempt to increase student motivation to read.

One such motivation intervention is called Courageous Reading Instruction (Marinak, 2013). The intervention was named for the reading teachers who were courageous enough to take action to nurture their students' intrinsic reading motivation. The intervention was designed to include student choice in the teacher read-aloud, jigsaw techniques during informational text reading, and book clubs, in addition to self-selected silent reading. When it was time to select a new read aloud, teachers gathered eight books and did a book talk on each before asking students to vote for their choice. Teachers also selected high interest informational texts and had students work in groups to become experts on one section of the book, before asking them to prepare a collaborative presentation, in the format of their choice, to present to the class. The book clubs involved having students choose one of five books to read. The students would read their books during SSR three days per week and engage in group discussions the other two days. The quasi-experimental design the researchers employed found that the fifth grade students who received the intervention had statistically significant higher scores on the Motivation to Read Profile than the students in the control group. Students in the treatment group reported that they valued

reading more after the intervention. This suggests that intervention practices that utilize choice, authenticity, challenge, and collaboration can be used to increase student motivation.

Another intervention that has been used to increase motivation is paired reading. The paired reading program uses simultaneous reading where both the tutor and tutee read aloud together, independent reading where the tutee reads alone when he feels confident enough, and text comprehension where the tutor and tutee discuss the text after reading (Monteiro, 2013). The tutor also provides responsive feedback to the tutee during reading sessions. In a quasi-experimental study conducted by Monteiro, eighty fourth graders and eighty second graders participated in paired reading, with the fourth graders serving as the tutors. All students were identified by their teachers as struggling readers. Students met for 30 minutes for three times per week, over a period of eight weeks. The researchers found that both the second graders and fourth graders improved significantly from the pre-test to the posttest, in terms of reading for pleasure and self-concept as readers. The students in the treatment group placed a higher emphasis on the importance of reading, and they showed more pleasure in reading than their peers in the control group. The results of the study suggest that the children's autonomy over the materials they used, the appropriate level of challenge for the readers, the social interaction with a more competent peer, and constant praise to support self-confidence all contributed to the increase in intrinsic reading motivation of the students.

Concept-Oriented Reading Instruction (CORI) is another intervention that has been used to increase students' motivation to read. The framework for CORI uses five motivational practices, including relevance (linking reading to students' experiences), choices (providing autonomy in choosing topics within the teacher's objectives for learning), success (helping students to perform meaningful tasks proficiently), collaboration (allowing students to engage in

social interactions as part of their reading instruction), and thematic units (structuring reading activities so the content is connected). In a meta-analysis conducted by Guthrie, McRae, and Klauda (2007), the researchers found that in studies where CORI was used, students showed a moderate increase in reading curiosity, a moderate increase in enthusiasm for reading, a decrease in their disposition to avoid reading, a significant increase in their self-efficacy, and a significant positive influence on the amount of reading students did for enjoyment. Overall, CORI was shown to have a large impact on the construct of intrinsic motivation for reading.

A popular reading motivation intervention that has been used in classrooms throughout the United States is Accelerated Reader (AR). According to Luck (2010), Accelerated Reader is used in more than 60,000 schools, which is well over half the schools in the United States. Accelerated Reader is a computer assessment and progress monitoring system. Students select books from more than 100,000 titles. They read the books independently at their own pace and when they are finished, they complete a multiple-choice AR quiz on the computer. Each book is assigned a point value based on its length and text difficulty, and when the student completes the quiz, he is awarded points based on his proportion of correct responses. Teachers can set individualized student point goals that provide clear goals for students and allow teachers to measure student progress (Topping et al., 2007). The developers of AR claim that it is highly motivational and will build a lifetime love of learning.

In a review of the literature on AR, Luck (2010) found that while there are many studies available on AR, very few of them were well-designed with results that could be generalized. Instead, she found that many of the studies on AR linked AR points to extrinsic motivators, which actually reduced internal motivation to read over the long-term. While AR is widely used in the United States, Luck recommends that additional research be conducted to determine

exactly which aspects of the incentive program could potentially be responsible for increasing students' motivation to read.

While the previously discussed interventions have been designed for use with all readers, additional interventions have been designed to account for the unique needs of struggling readers. One such intervention is The Joy of Reading. In a study conducted by Tovli (2014), The Joy of Reading program was used with second grade students in special education classes. The program focused on exposing students to stories using multiple intelligences, and it used nine different components, including daily reading, a classroom library, storytelling and retelling, functional reading, serial stories, interactive book reading, repeating patterns in text, dialogue reading, and post-reading activities. Tovli found that students who were exposed to the program experienced a significant increase in reading quantity and quality. The students also demonstrated a preference for reading books over other leisure activities. The researcher attributed the increase in reading motivation to the small successes students experienced with reading each day, which accumulated to numerous positive experiences, building a positive view of themselves as readers.

Another reading motivation intervention specifically aimed at reaching students with learning disabilities is the Clever Is and Clever Does (Zentall & Lee, 2012). Students in the intervention group experienced positive feedback about prior reading performance paired with standards related to mastery goals, positive labeling, and external standards related to performance goals (asking a child to complete the next level assignment because they were successful with the previous level). Zentall and Lee found that the program had positive impacts on the students' motivation, suggesting that positive performance feedback with a reasonable

challenge to perform better than before, combined with the activation of positive self-perceptions, can increase student motivation to read.

Digital Books as an Intervention for Motivation

As computers and tablets are becoming more readily available to students in the classroom, more consideration has been given to the potential of digital books to increase students' motivation to read. According to Ciampa (2012), in order for literacy learning experiences to motivate students and be personally relevant, they must reflect students' out of school literacy experiences. Based on the 2009 Census Bureau report, more than three out of four children between the ages of three and seventeen use the internet at home. This suggests that reading in a digital form, as opposed to print form, is more closely aligned with students' literacy experiences outside of school. The high levels of student engagement with digital text outside of school complements the research that supports the integration of digital media in the classroom (Neugebauer, 2013). This idea is further supported by the 2010 Kids and Family Reading Report, which suggested that one-third of children ages nine to seventeen would read more books for fun if they had access to e-books (Larson, 2012). Research suggests that today's students are digital natives who are born into the world with brains that are wired to acknowledge electronics. They claim that activities for this generation are more electronically driven than any other generation in the past, and young children are more intrigued by electronics than any other form of entertainment. As a result, digitally operated devices are thought to capture the interest of American students more than any paper-based activities. "By altering the mode of reading material from traditional paper-based reading to electronic book reading, interest in reading may increase, and thus be an effective solution to promote literacy activities both in and out of educational settings" (Wright, Fugett, & Caputa, 2013, p. 367).

Therefore, by adopting e-books in the classroom, teachers will be able to provide a more efficient, relevant, and engaging education for their students.

Researchers have identified several features of electronic books that may be responsible for increasing students' motivation to read. Oakley and Jay (2008) suggest that because digital books offer text narrations and animated illustrations, it can make reading the text easier and ensure success for readers who struggle or lack confidence. Because of the computer's ability to provide pronunciations of words and read aloud with fluency, readers can concentrate on the meaning of the text, rather than being hindered by their decoding and fluency limitations. As self-efficacy has repeatedly been shown to influence motivation, this aspect of e-books would certainly be motivational for struggling readers. In addition, simply hearing someone read interesting texts aloud with expression and enthusiasm can be motivational in itself. Late-developing, older readers often have to read lower level texts, which can lead to embarrassment. Also, they are often afraid to ask for help with their reading. Because computers can offer a relatively private reading experience, especially with headphones, embarrassment can be minimized, and the interactive features of e-books (dictionary, pronunciation, narration) can save struggling readers from constantly having to ask for help (Wright et al., 2013). Furthermore, because of the interactive features of electronic texts, it opens up the possibilities for students to access more difficult texts that they would not otherwise be able to read successfully. This increases motivation by allowing them to read more age-appropriate, interesting texts.

As previously stated, control and choice play a key role in motivation. Electronic books provide students with a high degree of control by allowing them to select the font size, contrast, and narration features. This allows the reading experience to cater to each individual student's needs and preferences (Oakley & Jay, 2008).

Another motivating factor to consider with e-books is the fact that they are highly visual. Some e-books have realistic, digitized speech and dynamic illustrations, music, and sound effects, which allow traditional, static print books to become almost movie-like (Ciampa, 2012). These qualities of digital books represent the same video, animation, sound, and action qualities students find appealing in the TV programs and video games they spend so much time watching. As a result, the visual elements of e-books contribute to higher levels of motivation and interest. According to Pearman (2008), this high degree of visual stimulation often leads students who are easily distracted to stay on task much more when reading electronic texts. The heavy visual content in digital texts can also assist with processing, which can allow struggling readers to persevere in their interactions with text when they would have otherwise given up (Zucker et al., 2009).

Several studies have illustrated positive impacts on student motivation to read by using digital books. A study conducted by Ciampa (2012) aimed to explore the impact of electronic storybooks on the reading motivation and listening comprehension of first grade students. The results indicated that all students increased their comprehension scores and showed a strong preference for using e-books. Students also reported an increase in reading outside of class, by accessing the website their teacher gave them for electronic books at home. This demonstrates an increase in motivation to read. In a similar study conducted by Wright et al. (2013), researchers explored the effects of using electronic books and paper-based books with second grade students. The researchers found that while comprehension and vocabulary were consistent across the two formats, students' reading experiences were more enjoyable when reading the digital texts, rather than the paper texts, as reported by the students themselves. Finally, Grimshaw, Dungworth, McKnight, and Morris (2007) conducted a study that investigated

reading comprehension and interest in reading using digital and print texts. Results of the study showed comprehension skills were significantly higher when students used the interactive resources in the e-book, including oral narration. In addition, the study showed that the level of enjoyment of reading was higher for students reading the e-book. Activities that are enjoyable are activities that students are more likely to be motivated to engage in. As research has consistently shown students find e-book reading more enjoyable, it would stand to reason that students would be more motivated to read if they were reading e-books.

Characteristics of Quality Digital Books

Although interactive, digital texts have the potential to motivate readers, it is important to make sure the interactive tools enhance a student's learning, rather than disrupt or distract from the storyline and ultimately, comprehension (Cahill & McGill-Franzen, 2013). According to Zucker et al. (2009), electronic books are defined as a form of electronic text that contains key features of traditional print books, such as a central theme or topic, and pages that turn. Electronic books use a closed system, where the reader can begin at the same place, without being faced with ads or pop-ups, and the reader has to navigate through a constrained set of choices, unlike the general Internet, where there are limitless options. They can also contain digital enhancements that make the reading experience more supportive.

These digital enhancements have sparked a great deal of debate as to whether they support a reader's experience or detract from it. There are visual and sound effects hidden in most screens of electronic books that can be found by moving the cursor over a picture. These are commonly referred to as "hotspots." According to De Jong and Bus (2004), these visual and sound effects interfere with the narrative of the story, which undermines students' comprehension. They found this to be particularly true for children at the beginning stages of

reading. De Jong and Bus suggested that these visual effects distract children from the story because they encourage children to think of the story as a game. The researchers discussed how the animated effects of electronic books may be appealing and humorous for children, but they are often irrelevant to the story, which can negatively impact children's understanding of the story. Shamir and Korat (2006) found that when students overuse hotspots that lack congruency with the story, they make fewer academic gains and fail to improve their understanding of the story. Similarly, Lefever-Davis and Pearman (2005) found that children can become dependent on the interactive features of electronic books that decode words. While a good teacher knows when to prompt students to decode a word, computers are unable to make those judgment calls and simply decode everything for students, which can lead to complacency with decoding. Schugar, Smith, and Schugar (2013) expressed concern that the interactivity in picture e-books can noticeably slow students' reading rates because students are pausing for long periods to "play" with the features. In addition, they suggested that the interactive features channel students' attention away from the actual reading, which may tempt them to "read" through the pictures and interactions, rather than looking at the text.

However, the research on the interactivity of electronic books is contradictory. Several studies have also reported that the interactive features in electronic books do not interfere with students' understanding of the story. In a separate study conducted by De Jong and Bus (2003), the researchers found that hotspots did not interfere with students' story understanding. Children activated numerous hotspots while reading electronic books, and they were able to recall as much from the story as from stories read to them by adults. The researchers concluded that even though the animation was unrelated to the story, it enhanced children's engagement and motivation to explore the stories, which ultimately increased their understanding of the stories.

In a similar study, Ricci and Beal (2002) found that visual and sound effects did not disrupt the comprehension among a group of first grade students. The students were able to recall many details from an electronic story, even though they explored numerous animations that were inconsistent with the story itself. Morgan (2013) actually found the hotspots to be advantageous to student's reading. She suggested that hotspots are beneficial because they encourage students to not only learn visually, but also kinesthetically because they have to use their fingers to activate the different features of the program. She posited that this multi-modality format for learning allows students to develop a deeper understanding of the text.

Clearly, there is much debate regarding the presence of interactive features in electronic texts, and additional research will be needed to determine whether these features are distracting or beneficial. Perhaps, the best e-books are those that use some interactive hotspots, but do not overuse them. "Well-designed books with considerate animations that purposefully advance comprehension and are congruent with the content, tend to be more appealing and stimulating for emergent readers" (Cahill & McGill-Franzen, 2013, p. 33). Schugar et al. (2013) suggest that the majority of interactions in electronic books should support and extend students' understanding of the text, so that the time spent away from the text itself is spent on activities that have the potential to bolster their comprehension. They suggest that the interactions are brief, so that students are not focused on features outside of the text for significant portions of time. In addition, they discuss how interactions should be placed sporadically throughout the text so that readers do not become overwhelmed and disrupted by the interactive features.

Several researchers have developed checklists for teachers to assist them in selecting quality electronic books. According to Cahill and McGill-Franzen (2013), teachers should consider the quality of electronic books in terms of the story or information, the illustrations, the

narration, the animations, and the functions and support tools available to students. Shamir and Korat (2006) provide additional suggestions for teachers to select quality electronic books. They ask teachers to consider whether the story structure is appropriate for students, whether the font is large enough, whether the amount of text on each page is appropriate, whether the text is highlighted when read, whether an interactive dictionary is included, whether the hotspots are well designed, whether the animations support the narration, whether simple verbal directions are included, and whether or not there are graphic presentations that accompany the directions.

Researchers have also highlighted additional important features related to the functionality of electronic books. Cahill and McGill-Franzen (2013) emphasize that because readers use the text and the images to comprehend pictures books, the quality of the images is just as important as the quality of the words in digital texts. In addition, they discuss the importance of different interactive modes. They suggest that quality digital books should have a read-along mode, a read-to-self mode, and a game playing or activity mode. They also emphasize how readers of digital books should be able to maneuver through digital books in the same way as printed texted, in that the reader should be able to turn the pages, access forward, backward, pause, and restart buttons, and skip to specific pages within the text. Furthermore, the reader should have the option to reread a single passage, sentence, or word within a text. Aside from the functional display of electronic books, these researchers also highlight the importance of allowing readers to control the sound functions and font sizes of electronic texts, in order to provide them with a more personalized reading experience.

Digital Texts and the Five Key Areas of Reading

In addition to the interactive hotspots that appear in digital texts, researchers have also found additional tools that have been shown to support reading development. Pearman and

Lefever-Davis (2006) promoted e-books as being useful for addressing each of the five elements identified by the National Reading Panel as essential for reading development, including phonemic awareness, phonics, fluency, vocabulary, and comprehension.

Phonemic awareness refers to a person's ability to hear and manipulate the individual sounds in spoken words. Phonics refers to a person's ability to identify the relationships between the spoken sounds and the printed words of language. Digital books have been shown to be effective in addressing both of these elements of reading. Some e-books embed explicit decoding support features, such as letter-by-letter pronunciations or onset and rime pronunciations when a student clicks on a word (Zucker et al., 2009). Some e-books even sound out words for students by simultaneously highlighting a letter and saying the sound before blending the entire word (Wood, 2005). If students continue to click on a word, the computer will elongate the pronunciation of the word and emphasize the individual sounds in the word (Pearman & Lefever-Davis, 2006). In addition, electronic books allow for text narration, which highlights the words on the page that are being read. Both of these features help to focus children's attention on the connection between the sounds they hear and printed letters. The support of highlighted text has also been shown to increase students' sight word vocabulary (De Jong & Bus, 2003).

Chera and Wood (2002) examined the effects of e-books on pre-K to kindergarten-age students' phonological awareness and word reading outcomes. They found that the students using the e-books showed a significant increase in their phonological awareness skills. In a similar study, Wood (2005) investigated the effect of e-books with speech feedback on the phonological awareness skills of five and six year old students. She found that the students using the e-books showed greater improvements in rhyming skills than the students using the printed

text. This was attributed to the use of segmented word pronunciations. As rhyming is a key component of phonological awareness, this study represents another example of how e-books can be used to improve students' phonological awareness skills. In terms of students' phonics and word recognition abilities, Medwell (1998) conducted a study in which she examined the effects of e-books on children's retell and word recognition abilities. She reported that students who read the e-books outperformed the students who read the printed text in retelling and word recognition.

In addition to improving students' phonemic awareness and phonics skills, electronic books have also been shown to support students' vocabulary development. Many e-books offer an on-demand dictionary feature, which allows students to click on the word and be given the definition and synonyms (Zucker et al., 2009). This feature is particularly important for vocabulary development, especially for second language learners (Cahill & McGill-Franzen, 2013). In addition, the auditory feature of electronic books enhances vocabulary, as well (Pearman & Lefever-Davis, 2006). Children learn most words incidentally from oral language and reading. Therefore, read alouds expose students to new vocabulary in context, modeled by a fluent reader. Since most electronic books provide a read aloud feature, this allows students to listen to a story over and over again in order to develop knowledge about the word through repeated exposure to it. Also, these researchers suggest that the animated graphics and audio effects in electronic books provide more context clues than printed texts. As a result, it is easier for students to use context clues to infer the meaning of new words when using e-books. Higgins and Cocks (1999) conducted a study to investigate the vocabulary growth of grade three students when using electronic books. All children showed significant gains from the pre-test to the posttest, indicating that e-books with animations support vocabulary acquisition. Korat (2010)

showed similar findings. He conducted a study with kindergarten and first grade children where students' progress in word reading and word meaning were evaluated. Students were randomly assigned to read an e-book or printed text. Students in both age groups who read the e-book showed significant progress in word meaning and word reading compared to the control group. In a similar study, Korat and Shamir (2008), worked with kindergartners. Students read e-books in "read only" mode, "read with dictionary" mode, and "read and play" mode. Results showed that students' word meaning improved regardless of mode, yet students who used "read with dictionary" mode and "read and play" mode showed even greater gains.

Fluency is another component of reading that could potentially be influenced by electronic books. Fluency refers to a student's ability to read with speed, accuracy, and prosody. One common way to build fluency is through repeated readings, but often students lose interest in a text after reading it multiple times. However, the animations and interactivity offered by electronic texts often prolongs students' interest, which can make repeated readings more effective (Pearman & Lefever-Davis, 2006). In addition, characters' voices are often narrated by different people in electronic text, which provides students with models of expression, intonation, and pausing for punctuation that they can mimic in their own reading. Because electronic texts are narrated, students can read along with the narrator, similar to a choral reading experience. This provides students with practice reading at an appropriate rate and phrasing sections of text.

The final, and perhaps most critical component of reading, is comprehension. The purpose of reading is to derive meaning from written text and comprehension refers to a student's ability to understand what he has read. Because digital texts pair narration with animation, the cognitive load for decoding text is reduced, which improves a child's capacity to

comprehend text (Cahill & McGill-Franzen, 2013). The scaffolds in digital text allow students to independently read a text that they would have found frustrating in print form (McKenna, 2014). In addition, the features of electronic books help to reinforce common comprehension strategies, such as making predictions, summarizing, and inferring, which students are often asked to apply. The sound effects and animation features make the reader feel like they are in the setting of the story, which makes it easier for them to recall more complex details to summarize the story (Pearman & Lefever-Davis, 2006). Also, the sound effects in the animation often cue the reader as to what will happen next, which assists them in making predictions. De Jong and Bus (2003) also cite how the feelings, mood and character actions are more easily conveyed through animations, which improves students' ability to make inferences.

Electronic texts also include several support tools, which directly aid comprehension. According to Zucker et al. (2009), some electronic books offer hotspots with mini-lessons in comprehension. This can assist students in self-monitoring their understanding of the story as they are reading. In addition, electronic books allow readers to add digital notes within the text. This allows students to monitor their comprehension and respond to the text as they are reading (Larson, 2012). Highlighting is also an important tool in digital text. When the reader can highlight information in the text, it allows him to monitor and track the important information within the text as he is reading. Another factor that supports comprehension is the ability to efficiently locate specific information within the text. Some e-books allow users to search for specific words or phrases within the text and others allow readers to insert a digital bookmark so that they can return to a specific point in the story. Both of these features allow readers to quickly navigate through texts.

Several research studies have been conducted to examine the effects of digital books on student comprehension. Seyit (2010) examined the differences in struggling readers' comprehension of storybooks presented in electronic or print format. The fourth grade students who participated in the study were grouped into three groups: electronic books with animation, electronic books without animation, and printed text. The results of the study revealed that students reading e-books with animation were able to remember more story details in their retellings. In addition, the retellings of students who read the animated books were longer and more creative, suggesting that the animations in electronic texts do help to support comprehension. In a similar study, Matthew (1997) compared the comprehension levels of students who read a printed text and students who read an electronic text. She found that the students who used the electronic text had significantly higher comprehension scores, and showed a greater motivation to reread the text. Finally, Union, Union, and Green (2015) conducted a study in which they explored the effects of using eReaders with third grade students. The results of the study showed that the average reading scores for students learning with eReaders improved, while the average reading scores for students using printed text declined.

Research suggests that the nature of electronic books and the supportive features that are often embedded in electronic books make them a viable option for increasing achievement in the areas of phonemic awareness, phonics, vocabulary, fluency, and comprehension. Digital texts allow for customized reading experiences where the reader can select the supports that are just right in order to increase reading achievement.

Summary

It is clear that there is a link between the time students spend reading independently and their overall reading achievement. It has also been established that the amount of time students

spend reading independently is largely influenced by their motivation to read. Digital books have been shown to increase students' motivation to read, as well as provide them with supportive features that aid in their reading development. Therefore, it will be important to explore how the use of electronic books during independent reading time in school could potentially impact students' overall reading achievement.

CHAPTER III

METHODS

This study was conducted to determine the impact on reading achievement and students' motivation of using digital books versus books in print during Sustained Silent Reading (SSR) with first grade students.

Design

The study used a quasi-experimental design in which there were two groups, a treatment group and a control group. The independent variable for this study was the medium of texts students read during SSR, whether it was digital text or printed text. The dependent variables were students' reading achievement, as measured by their independent reading levels, and students' motivation to read, as measured by a survey. The study was conducted over a three-month period and utilized a pre-test/posttest format in which students' baseline scores from the Fountas and Pinnell Benchmark Assessment and the Motivation to Read Profile were compared to their scores following the intervention.

Participants

The participants were students enrolled in two first grade classes at a suburban elementary school located in the mid-Atlantic region of The United States. The total enrollment for the school was over 750 students, with 79% African American, 7% White, 5% Asian, 3% Hispanic, 4% two or more races, 1% American Indian, and 1% Pacific Islander. The first grade population consisted of 149 students, and as a result, there were six general education first grade classes. The school utilizes a cluster grouping method, so the two classes that were selected to participate in the study were considered to have a mixture of average and above-average students. The classes were purposefully selected, as they represented students with similar

reading abilities and all students in both classes were reading at or above grade level at the beginning of the study. The researcher chose to refrain from selecting the other four classes at the school, as they all had students reading below grade level. Considering the fact that reading difficulties can negatively impact a student's motivation to read, the researcher did not want pre-existing struggles with reading to skew the results of the study.

Of the two classes that were selected to participate in the study, the teacher of one class had prior experience teaching in a lighthouse school, where students regularly used one-to-one devices to complete classroom activities. As she had more experience troubleshooting issues with technology in the classroom, her class was selected as the treatment group. The treatment group consisted of an intact class, taught by a female first grade teacher, with 28 students. Of the 28 students, 14 were male and 14 were female. The demographic information for students in the treatment group was representative of the school's population. Within the class, there were 20 African American students, 5 Caucasian students, 2 Hispanic students, and 1 Asian student. The control group also consisted of an intact class, taught by a female first grade teacher, with 26 students. Of the 26 students, 9 were male and 17 were female. The demographic information for students in the control group was also very similar. Within the control group, there were 21 African American students, 3 Caucasian students, 1 Hispanic student, and 1 Asian student. Students in both the treatment and control groups were six and seven years old. There were no students in either group that had experienced grade acceleration or retention.

Instruments

Student Reading Achievement

The Fountas and Pinnell Benchmark Assessment System was selected to measure students' reading achievement from the beginning to the end of the treatment period. The

Fountas and Pinnell Benchmark Assessment is a formative assessment that is designed to be administered three times per year. The system consists of 58 books divided evenly between fiction and nonfiction that can be used to identify a student's current reading level and progress along a gradient of text levels over time. The texts are aligned with the A (beginning reader) to Z (advanced reader) book levels of the Fountas and Pinnell Text Gradient. "The gradient of text that forms the foundation of this benchmark assessment system has been created and refined as a teaching and assessment tool over the past twenty years" (Heinemann, 2011, p. 2). The assessment is designed to measure decoding, fluency, vocabulary, and comprehension skills for students in kindergarten through grade 8. There are two assessment kits, one for students in Kindergarten through Grade 2 and another for students in Grades 3 to 8. The first kit represents levels A to N on the text gradient and the second kit represents levels L to Z. The texts become more difficult as the reader progresses through the levels. The Benchmark Assessment is administered as a running record and allows the test examiner to observe a student's accuracy and fluency while reading orally. Upon completion of the oral reading portion of the assessment, the test examiner asks the student to answer a series of questions to evaluate his understanding of information within and beyond the text. The student's oral reading fluency and comprehension is used to determine the highest level of difficulty at which a student is able to read fiction and nonfiction texts.

According to Heinemann (2012), the grade level benchmarks for the Fountas and Pinnell System are not nationally normed, but they have been tested in a large field study. The end-of-year expectations as defined by the Benchmark Assessment System are consistent with recommended national standards from the National Center on Education and the Economy. The publishers have provided levels that indicate typical satisfactory progress. A field test was

conducted with 498 students at 22 different schools across the United States. To measure the test-retest reliability of the Benchmark Assessment System, students' scores on the fiction texts were correlated with their scores on the nonfiction texts at the same level. For texts leveled A to N, the test-retest reliability was .93, for texts leveled L to Z, the test-retest reliability was .94, and for all levels, the test-retest reliability was .97. In addition, the field test evaluated convergent validity by examining the relationship between students' scores on the Benchmark Assessment System and the Reading Recovery Text Level Assessment. The study found correlations of .94 between the fiction texts in the Benchmark Assessment System and Reading Recovery and correlations of .93 between the nonfiction texts in the Benchmark Assessment System and Reading Recovery. These results reinforce the validity of The Fountas and Pinnell Benchmark Assessment System, as Reading Recovery was identified by the U.S. Department of Education as an effective, scientifically based reading program (Heinemann, 2012).

In a similar study, Klingbeil, McComas, Burns, and Helman (2015) evaluated the predictive validity and accuracy of The Fountas and Pinnell Benchmark Assessment System. In the study, the test-retest reliability for the Benchmark Assessment System was .86 from fall to spring. The correlation between the Benchmark Assessment System and the Measures of Academic Progress- Reading, as a predictor of students' scores, ranged from .64 to .77. These results again suggest the validity and reliability of The Fountas and Pinnell Benchmark Assessment System as an accurate tool for evaluating students' achievement and progress in reading.

Heinemann (2011) suggests that each text level within the Fountas and Pinnell Benchmark Assessment System brings new challenges in the form of vocabulary, words to decode, high frequency words, concepts, and syntax. Therefore, students who were able to

increase their reading level on the text gradient from the pre-test to the posttest demonstrated an increase in overall reading achievement.

The Motivation to Read Profile-Revised

The assessment selected to evaluate participants' motivation was The Motivation to Read Profile-Revised. Gambrell et al., (1996) developed The Motivation to Read Profile (MRP) as a tool for teachers to quantitatively and qualitatively assess students' reading motivation by evaluating their self-concept as readers and the value they place on reading. The MRP has two components, which include the Reading Survey and the Conversational Interview. The Reading Survey is a self-report and it is administered whole-group, whereas the Conversational Interview is administered one-on-one. The Conversational Interview is intended to serve as an informal conversation where the interviewer collects information about the types of books a student finds interesting, favorite authors, and how the student locates interesting reading materials. Due to time constraints, only the Reading Survey was utilized in this study.

The Reading Survey has 20 items and uses a four point Likert scale. The ten odd-numbered items evaluate the student's self-concept as a reader and the ten even-numbered items evaluate the value the student places on reading. The self-concept items focus on a student's perceived competence in reading and his perceived performance related to his peers. The value items focus on how often the student reads and the types of reading activities he engages in. The teacher follows a script and reads the survey aloud to the class, while students select their responses. For each question, the most positive response receives four points and the least positive response receives one point. The student's percentages for self-concept, value, as well as overall motivation, are calculated by dividing the raw score by the total number of possible

points. Students' scores can then be analyzed to identify and address specific areas of weakness that are impacting a student's motivation to read.

The MRP was field-tested with 330 students in four different schools in 1996 (Gambrell et al., 1996). An evaluation of the internal consistency of the self-concept subscale revealed reliability of .75 and the internal consistency of the value subscale had reliability of .82. The pre- and posttest reliability for the self-concept subscale was .68 and the pre- and posttest reliability for the value subscale was .70. In addition, two independent raters compared students' responses on the survey and the interview and found an interrater reliability of .87. Furthermore, because motivational theory suggests a positive correlation between motivation and achievement, the researchers had teachers categorize students as having low, average, or high reading performance. The researchers found statistically significant differences among the mean scores on the self-concept measure for high, middle, and low reading achievement groups, which suggest that scores on the MRP were positively associated with the level of reading achievement.

In 2013, the MRP was revised to reflect cultural and linguistic changes that had occurred over the past decade, such as the fact that digital reading sources were not considered on the original MRP (Malloy, Marinak, Gambrell, & Mazzoni, 2013). On the Motivation to Read Profile-Revised (MRP-R), one item was replaced to gauge students' perceptions of reading outside of school, as opposed to their future perspectives on reading. In addition, twelve items were revised to provide clarity and improve reliability. The MRP-R was field tested with 281 students. Reliability testing revealed a .87 for the full scale, a .85 for the value subscale, and a .81 for the self-concept subscale. This represented increases in the reliability of the subscales from the original MRP. In addition, a validity estimate of .89 was revealed with a confidence interval of .081 to .098. The validity and reliability for the MRP and the MRP-R make it

acceptable for use in the classroom, as well, as research. In fact, the MRP-R is widely used in literacy research as a measure of student motivation for reading (Malloy et al., 2013).

The authors of the MRP-R suggest that it can be administered multiple times per school year (Malloy et al., 2013). They suggest administering it in the beginning of the year to assist with planning whole group topics and small group instructional needs. They recommend administering it mid-year to check for changes in motivation and to determine the efficacy of instructional practices. The authors also suggest that administering it at the end of the year can provide feedback regarding students' interventions, which may inform students' instructional goals for the following school year. Thus, as the authors suggested, the MRP-R was used in this study to check for changes in motivation. Students completed the MRP-R at the beginning of the study to determine a baseline for their motivation to read and at the end of the study to determine if the treatment led to any changes in their motivation to read.

Procedures

During the week of December 8, 2015, students in both the treatment class and the control class completed the Motivation to Read Profile-Revised. The teachers for both classes read the script, while students recorded their responses on their surveys. Surveys were collected and scored by the researcher. Also, during the same week, students from both classes were pulled out of class for approximately thirty minutes to work one-on-one with the reading specialist to complete The Fountas and Pinnell Benchmark Assessment to determine their independent reading levels.

Both classes use the Daily Five model for their reading instruction. Students participated in approximately twenty to thirty minutes of whole group instruction at the beginning of their reading block. Then, students broke into small groups of six to eight students and took turns

meeting with the teacher for twenty to thirty minutes. While students were meeting with the teacher, the rest of the class was either completing independent work, engaged in literacy center activities, or reading independently. Teachers in both classrooms followed the local school system's reading curriculum, so students in both classes received the same instruction and completed the same activities on a daily basis.

Students in both classes had book boxes that contained approximately five traditional, printed texts. Each day during students' independent reading period, the students were invited to get their book boxes and sit anywhere in the classroom, while they read their books for twenty to thirty minutes. Students in both classes were given the opportunity to trade their books for other books in the classroom library at least once per week.

As of December 15, 2015, the control class continued to use their book boxes and read traditional, printed texts during their daily independent reading period. However, the treatment class began using their HP Revolve one-to-one devices to read digital texts during their independent reading period. The teacher of the treatment class introduced students to the following websites with digital texts: BookFlix, Epic, TumbleBooks, and RAZ Kids. Each website provided animated books for different reading levels that could be read with or without narration. Students were permitted to take their devices and sit anywhere in the room to read their digital books during their independent reading period.

From December 15, 2015, through March 15, 2016, students in both classes continued to engage in Sustained Silent Reading (SSR) each day that they were in school, for twenty to thirty minutes, but the students in the control class were only permitted to read traditional, printed texts, and the students in the treatment group were only permitted to read digital texts on their tablets. On March 16, 2016, students in both classes were once again asked to complete the

Motivation to Read Profile-Revised (MRP-R). The teacher read the script and students recorded their responses on their surveys. For approximately one week following the treatment period, the reading specialist pulled students from both classes and assessed them using the Fountas and Pinnell Benchmark Assessment System to determine their independent reading levels.

Following the study, students pre- and posttest scores on the MRP-R and The Fountas and Pinnell Benchmark Assessment were reviewed to determine whether the use of digital texts had an impact on students' overall reading achievement and their motivation to read.

CHAPTER IV

RESULTS

This study was designed to determine the impact on reading achievement and students' motivation by using digital books versus books in print during Sustained Silent Reading (SSR) with first grade students. In order to evaluate the impact of digital books on students' reading achievement, students' reading levels were determined at the beginning and end of the study using the Fountas and Pinnell Benchmark Assessment System. In addition to students' reading achievement, the study also evaluated the impact of digital books on students' motivation to read. Students' reading motivation was determined at the beginning and end of the study using the Motivation to Read Profile-Revised (MRP-R). The MRP-R provides an overall reading motivation score, as well as sub-scores related to students' self-concept as readers and the value they place on reading.

Data were analyzed using the chi-square test and the independent group *t*-test with equal variances. The chi-square test was used to determine the relationship between the group students were assigned to (experimental or control) and their independent reading levels on the pre-test. The *p*-value for the comparison of the two groups' pre-test reading levels was 0.997. The median reading level for both groups on the pre-test was level G, with the lowest reading level in both groups being level F and the highest reading level in both groups being level K. The *t*-test was utilized to determine whether the differences between the mean scores of the control group and experimental group were statistically significant in terms of their reading motivation on the MRP-R pre-test. The pre-test results for motivation are displayed in Table 1 below. The experimental group and the control group were determined to be essentially equivalent based on the results of the reading achievement and motivation pre-tests.

Following the study, similar analyses were conducted using the posttest data. Posttest reading achievement data were analyzed using the chi-square test and the independent group t-test with equal variances. The p-value for the comparison of the two groups' posttest reading levels was 0.922. The median posttest reading level for the control group was level J and the median posttest reading level for the treatment group was level I. The lowest reading level in both groups was level G and the highest reading level in both groups was level L. The posttest data for motivation was analyzed using t-tests and is displayed in Table 2 below. In order to determine whether statistically significant differences existed between the control group and the treatment group, in terms of reading achievement and motivation, t-tests were again utilized to compare each group's mean scores. The mean changes in students' scores from the pre-tests to the posttests for both groups are reflected in Table 3 below.

The null hypotheses for this study suggested that there would be no difference in the reading achievement or motivation of first grade students when using digital books or books in print during Sustained Silent Reading. Analyses of posttest data for both variables of interest had a p-value greater than 0.05, which indicates that no statistically significant differences were revealed between the control group and the experimental group. Therefore, the null hypotheses are supported, rather than rejected, by the data.

Table 1*Descriptive Statistics Related to Pre-Test Motivation Data*

Pre-Test	Group	Obs	Mean	Std. Error	Std. Dev.	95% Conf. Int. for Difference		t	df	p
						Low	High			
MRP-R Overall	Control	26	65	2.39	12.20	-7.68	5.68	-0.30	52	0.77
	Treatment	28	66	2.31	12.24					
MRP-R Self-Concept Subscale	Control	26	32.62	1.20	6.10	-3.90	2.70	-0.36	52	0.72
	Treatment	28	33.21	1.13	5.97					
MRP-R Value Subscale	Control	26	31.62	1.58	8.04	-5.25	3.20	-0.49	52	0.63
	Treatment	28	32.64	1.41	7.43					

The overall and subscale mean scores for both the control group and the treatment group were separated by less than 1.5 points on the motivation pre-test. Students in both the control and treatment groups showed a higher mean score on the self-concept subscale than the value subscale. In the treatment group, the lowest overall pre-test score on the MRP-R was 37, with a high score of 80, which is the highest possible score. In the control group, the lowest overall pre-test score was 36 and there were two students in that group who received a score of 80.

Table 2*Descriptive Statistics Related to Posttest Motivation Data*

Posttest	Group	Obs	Mean	Std. Error	Std. Dev.	95% Conf. Int. for Difference		t	df	p
						Low	High			
MRP-R Overall	Control	26	67.08	2.38	12.13	-8.02	3.68	-0.75	52	0.46
	Treatment	28	69.25	1.74	9.20					
MRP-R Self-Concept Subscale	Control	26	33.35	1.15	5.89	-4.16	1.43	-0.98	52	0.33
	Treatment	28	34.71	0.81	4.28					
MRP-R Value Subscale	Control	26	33.73	1.30	6.64	-4.20	2.59	-0.48	52	0.64
	Treatment	28	34.54	1.09	5.79					

The posttest scores on the MRP-R were very similar to the pre-test scores. The mean scores for the treatment and control groups in terms of overall scores and subscales scores differed by less than 2 points. Both groups showed slight increases in their mean scores on the overall assessment, as well as on both subscales. Once again on the post-test, the treatment group received a slightly higher mean score on the self-concept subscale than the value subscale. However, the control group actually received a slightly higher score on the value subscale than the self-concept subscale, unlike on the pre-test. On the MRP-R post-test, the lowest score in the control group was again a 36, and there were three students who received a score of 80. In terms of the treatment group, the lowest score increased to 46 and there were also three students who received a score of 80.

Table 3*Comparison of Change in Mean Reading Levels and Motivation Scores From Pre to-Posttest*

Pre-Test to Post-test Change	Group	Obs	Mean	Std. Error	Std. Dev.	95% Conf. Int. for Difference		t	df	p
						Low	High			
Fountas & Pinnell	Control	26	2.00	0.16	0.80	-0.43	0.50	.16	51	0.88
	Treatment	28	1.96	0.17	0.88					
MRP-R Overall	Control	26	2.08	0.95	4.87	-4.20	1.86	-0.78	52	0.44
	Treatment	28	3.25	1.15	6.10					
MRP-R Self-Concept Subscale	Control	26	0.73	0.51	2.62	-2.53	0.99	-0.88	52	0.38
	Treatment	28	1.5	0.70	3.69					
MRP-R Value Subscale	Control	26	2.12	0.78	3.98	-2.04	2.48	0.20	52	0.84
	Treatment	28	1.89	0.81	4.26					

The mean number of levels by which each student increased his independent reading level is displayed above in Table 3 for the experimental and control groups. It should be noted that all students in both groups increased their reading level by at least one level. Overall, students' reading levels increased by a range of one to four reading levels. The mean increase for the control group was 2.00 reading levels, with a median increase of 2 reading levels, as well. The mean increase for the treatment group was 1.96 reading levels with a median increase of 2 reading levels. There were only two students in the study who increased their independent reading levels by four reading levels, and one was in the control group and the other was in the experimental group. At the conclusion of the study, 14 of the 26 students in the control group were reading at or above Level J, which is equivalent to a student at the end of the first grade

year. Similarly, 13 of the 28 students in the experimental group were also reading at or above Level J. The *t*-tests conducted using posttest data for the mean number of reading levels increased by the treatment and control groups had a *p*-value of 0.88, which is significantly greater than the accepted standard of 0.05. Therefore, no statistically significant differences were revealed between the reading achievement gains of the control group and the reading achievement gains of the experimental group.

In terms of reading motivation, the average change in students' scores differed by approximately 1.5 points or less between the treatment and the control groups. The treatment group did demonstrate a greater average change from the pre-test to the posttest in terms of the overall motivation score and the score on the self-concept subtest. However, the control group showed a greater average change from the pre-test to the posttest on the value subscale of the MRP-R. In addition, both groups seemed to show a greater average change in terms of the value subscale than they did on the self-concept subscale. Once again, the *t*-tests conducted using posttest data for the mean increases in motivation by the treatment and control groups had *p*-values ranging from 0.38 to 0.84, all of which were greater than the accepted standard of 0.05. Therefore, no statistically significant differences were revealed between the reading motivation gains of the control group and the reading motivation gains of the experimental group.

All findings related to the study support the null hypotheses that there is no difference in the reading achievement or motivation of first grade students when using digital books or books in print during Sustained Silent Reading.

CHAPTER V

DISCUSSION

This study examined the impact on reading achievement and reading motivation of using digital books versus books in print with first grade students during Sustained Silent Reading (SSR). Data analyses indicated no statistically significant differences between the control group and the experimental group in terms of reading motivation or reading achievement. Therefore, the null hypotheses could not be rejected. The use of digital books during SSR with first grade students had no impact on the students' reading motivation or reading achievement as measured by the Motivation to Read Profile-Revised and the Fountas and Pinnell Benchmark Assessment System.

Implications

Despite the fact that the null hypotheses were retained in this study, the results offer valuable implications for education. Many school districts are currently spending a significant portion of their budgets to purchase one-to-one tablets for their students. The results of this study suggest that first grade students similar to those in the study population will show the same gains in reading achievement and reading motivation, regardless of whether they are reading from a device or reading from a traditional, printed text during SSR. While both the experimental group and the control group showed significant gains in reading achievement and reading motivation, the experimental group did not outperform the control group in terms of either of the focus variables, despite the fact that they were reading from devices. Many educators have speculated that because students are growing up in a digital world, using electronic devices in the classroom will increase students' engagement, which will ultimately increase their motivation to learn and their overall achievement. The results of this study do not

support this idea. Instead, the results of this study suggest that having students read from traditional, printed texts is equally as effective as having students read from digital texts. Perhaps this will change as technology evolves and digital texts become the norm for students, rather than a novelty. It is possible that as students increase their exposure to and familiarity with digital texts, the impact that digital texts have on their achievement and motivation may change. It is also possible that the measures used in this study were not precise enough to detect what could be subtle enhancements using e-books over traditional, printed text. Further research in this field is necessary. However, the results of this study indicate that school districts may want to consider whether or not the investment in one-to-one devices will provide them with the greatest impact on student motivation and achievement.

Theoretical Consequences

The results of this study support previously cited research related to motivation, independent reading, and reading achievement, regardless of the media used to read. Numerous research studies have found that students who are intrinsically motivated to read will spend more time reading independently. In addition, students who spend time reading independently are more likely to demonstrate higher reading achievement. While the results of this study indicated that it was not statistically significant whether students were reading traditional, printed text or digital text during SSR, the results of the study also indicated that all participants made significant gains in reading achievement. On average, students in both the treatment and control groups increased their reading levels by two Fountas and Pinnell levels over the course of the study. All students, whether they were in the treatment or control group, were spending at least thirty minutes each day reading independently. Therefore, while the medium of text may not have had an impact on the achievement growth that students showed, it is possible that students

in both groups demonstrated similar achievement gains because they were both benefitting from time spent engaged in SSR every day. Thus, the study would support a positive relationship between time spent reading independently and reading achievement.

In addition, as previously cited, researchers have found a positive relationship between motivation to read and time spent reading independently. Students who are motivated to read are more likely to spend time on task reading, which in turn makes them more skilled readers. At the beginning of the study, the average score on the Motivation to Read Profile-Revised (MRP-R) was approximately 81% for the control group and 83% for the treatment group. This indicates that before any interventions were introduced, both groups already had a relatively high motivation to read. Because both groups began with a relatively high motivation to read, it is likely that they spent most of their SSR time actively engaged in reading, rather than self-distracting or wasting time. Thus, the high motivation to begin with could have also contributed to the significant gains in reading achievement for both groups. The results of this study support existing theories that time spent reading independently is positively related to reading achievement, and reading motivation is also positively related to time spent actively engaged in independent reading.

Threats to Validity

As a quasi-experimental study, this research had internal and external threats to validity. Internal threats to validity involve threats that influence the outcome of the study, but are not attributable to the independent variable. External threats to validity involve threats that prevent the results from being generalized to other settings and groups.

One threat to internal validity in this study was differential selection of participants. This threat occurs when the research groups have differences before the start of the study that could

potentially account for differences found on the posttest. Because this study used two pre-formed classes to conduct the research, it would have been impossible to find two classes that were perfectly identical. While analyses of the pre-test data showed that the two classes had similar reading achievement and motivation levels, there were demographic differences between the treatment and control groups. Most significantly, the treatment group had equal numbers of male and female students, whereas the control group had twice as many female students as male students. It is possible that the gender demographics of the control group could have impacted the results on the post-test, as girls do not necessarily respond to reading the same way that boys do.

Another threat to the internal validity of the experiment was history. History refers to any events that occur during the study that are not part of the experiment, but may affect the results. Approximately a week and a half after the study began, students had a ten day hiatus from school for winter break. During this time, some students may have engaged in thirty minutes of SSR, while other students did not. Because the researcher could not account for whether or not the students read during this time, this may have had an impact on the results of the post-test.

Pre-test sensitization is another form of internal validity that may have played a role in this experiment. Pre-test sensitization refers to the fact that taking a pre-test may improve students' scores on the posttest, regardless of whether or not they receive treatment. When students were administered the Fountas and Pinnell Benchmark Assessment by the reading specialist as the pre-test, they were able to familiarize themselves with the format of the assessment and the types of comprehension questions that would be asked after reading to determine whether or not they could move to the next reading level. Students seemed to enjoy

the pre-test experience, as many students asked the reading specialist during the course of the study when they would get to go and read with her again. Thus, students seemed generally interested in pleasing the reading specialist when they returned to complete the posttest, and because they had prior experience with the assessment, they may have paid closer attention to details, in order to be prepared to answer comprehension questions at the end. As a result, the posttest results for reading achievement may have been affected.

The final threat to internal validity was the instrumentation threat. This type of threat occurs when there is a lack of consistency in the measuring instrument. The Fountas and Pinnell Benchmark Assessment requires the test administrator to evaluate a student's comprehension of the text he read by asking him or her a series of comprehension questions and rating his or her responses on a scale of zero to three, based on whether or not he or she addressed specified benchmarks in his responses. While the assessment provides benchmarks that students should include in their response, it is somewhat subjective as to the number of points the test administrator assigns to the student's response. It is possible that the reading specialist's subjective judgment of students' responses on the pre-and post-tests could have impacted their scores. Despite the possible threats to internal validity, the fact remains that the experimental and control groups were affected to the same degree.

Perhaps the greatest threat to external validity for this study was selection-treatment interaction. This threat occurs when the participants are not randomly selected for the experiment, and as a result, the results of the experiment are not generalizable. In this study, a convenience sample was used, so participants were not randomly selected. In fact, only first grade students at one school who were reading at or above grade level were selected to participate in the study. This severely limits the generalizability of the study, as it cannot even

be generalized to all first grade students in the school, as the study did not include students who were reading below grade level, and those students are part of the school's first grade population. The study can only be generalized to first grade students who are reading at or above grade level at the participating school. Nevertheless, for this population, there is no evidence that e-books produce higher motivation or achievement.

Another external threat to validity is treatment diffusion. Treatment diffusion occurs when groups adopt pieces of each other's treatment. In terms of the experiment, students in the control group were not allowed to use their devices to read during SSR. However, the study did not account for the fact that students in the control group could have been using their devices at other times during the school day, such as to complete math activities or in their Library classes. Thus, students in the control groups may have engaged in reading activities on their devices at other periods during the school day, outside of the scope of this experiment, which may have contributed to their results on the posttest.

Finally, reactive arrangements may have served as another threat to external validity for this study. Reactive arrangements refers to the fact that being in a study affects participants, so they act differently from their normal behavior. Students in first grade are typically very eager to please their teachers. As a result, when students completed the MRP-R for the pre- and post-tests, they may have indicated more positive feelings about reading, just to please their teachers, not because their responses reflected how they truly felt about reading. Therefore, students' results on the MRP-R may have been somewhat skewed in the positive direction, but results were skewed equally for both e-books and traditional, printed text.

Connections to Existing Literature

With the increasing interest in utilizing electronic texts in the classroom, the field of research available related to electronic texts and different aspects of classroom instruction has gradually expanded over the past decade. However, the research is still limited and is split as far as results, with several studies showing results similar to this and other studies showing completely different results.

Jones and Brown (2011) conducted a research study similar to this one, with the major difference being that they focused on third grade students. For their study, twenty-two third grade students completed satisfaction surveys and reading comprehension tests during three separate reading sessions. During one session they used a traditional, printed text and during the other two sessions they used e-books. The results of the comprehension tests and surveys indicated that the e-book format did not significantly increase comprehension, engagement, or enjoyment. While Jones and Brown's study was conducted by using digital texts during reading instruction, rather than independent reading, the results are very similar to the study at hand. In both this study and their study, the use of digital texts did not have a statistically significant impact on students' reading achievement or their engagement with text.

In a study conducted by De Jong and Bus (2002), similar results were again replicated with kindergarten children. An adult read to twelve children from a traditional, printed book, while twenty four children explored an electronic book. At the conclusion of the study, only those students who read the traditional, printed book had internalized the content of the story. De Jong and Bus found that the features of the digital text diverted children's attention from the text, making the digital format a less efficient means of supporting comprehension. While this study also examined the effects of traditional, printed texts versus digital texts with primary

students, this study actually found digital texts to be harmful to students' reading, rather than generating equivalent results.

A study with results significantly different from the current study being discussed was a study conducted by Shamir, Korat, and Fella (2012). Their study investigated the use of e-books versus having an adult read a printed text on the vocabulary and phonological awareness of children ages 5-7. While the study did not focus on overall reading achievement, phonological awareness and vocabulary certainly contribute to the reading achievement of young children. In addition, the study had a significantly larger participant group, as 110 children participated in the study, and all of the children were identified as having developmental delays. Students were randomly assigned to the e-book group, the adult reader group, or the control group. Their findings indicated that the children who were exposed to the e-book had significantly higher vocabulary and phonological awareness skills. It is possible that the differing results in their study could be attributed to the fact that they had a larger sample size or the fact that their participants were at-risk readers, rather than students reading at or above grade level.

Another study that produced results dissimilar to the current study was a study conducted by Ciampa (2012), which aimed to explore the impact of electronic storybooks on the reading motivation and listening comprehension of first grade students. The results indicated that all students increased their comprehension scores and showed a strong preference for using e-books. Students also reported an increase in reading outside of class, by accessing the website their teacher gave them for electronic books at home. Perhaps the reason that this study produced such different results is because it had an extremely small participant group, consisting of only six students. In addition, the study only reported results for students using electronic storybooks.

It did not account for how students who were not using electronic storybooks may have performed in comparison.

While the research on the use of digital texts in the classroom is still somewhat limited, it is growing, which is necessary considering the varying results from studies that utilize digital texts. Results of the current study suggest that reading digital books during SSR has the same effect on reading achievement and motivation as reading traditional, printed texts. Despite the fact that similar results were generated in a study with third grade students (Jones & Brown, 2011), negative results were generated when digital books were used with kindergarteners (De Jong & Bus, 2002), and positive results were generated when digital books were used with primary students with reading difficulties (Shamir et al., 2012). Therefore, additional research is needed to develop a better understanding of how the use of digital texts impacts students in the classroom. Also, as the number of studies increase, meta analyses should be conducted to estimate the average effects of e-books versus traditional, printed text across a large number of published research.

Implications for Future Research

While the results of this study suggest that the use of digital books with first graders during Sustained Silent Reading does not impact reading achievement or motivation, there are other existing research studies that suggest digital books can impact achievement and motivation. Therefore, it would be interesting to replicate this study using a larger sample size to see if different results could be obtained. Having a small participant group, particularly a convenience sample, limits the generalizability of the results, so a larger representative or randomly drawn participant group would be necessary to gain an understanding of the use of digital books in a wider array of educational settings. In addition, it would be helpful if the study was conducted

over a longer period of time. This study was only conducted over a period of three months. Sometimes it takes a longer period of time to truly understand the impact of a variable. It is possible that a longer study would allow for more statistically significant differences between the treatment group and the control group.

A study that produced notably different results was the study conducted by Shamir et al. (2012). One significant difference with that study was that all of the participants had developmental delays, unlike this study, in which all participants were reading on or above grade level. Thus, further research needs to be conducted to determine the impact of using digital texts, specifically with students who are reading below grade level. Students who are reading on or above grade level typically have an intrinsic desire to read. However, students who are reading below grade level often lack intrinsic motivation to read because reading is such a laborious task for them. As a result, the visually stimulating effects of digital texts may have a completely different effect on students who are reading below grade level than it did on the students in this study.

Additional research should also be conducted with older students. This study focused on first grade students and much of the existing research on digital texts focuses on emergent readers, middle school, high school, and college students. While additional research is needed with all levels of students, there is a particular need to investigate the impact of digital texts on students at the upper elementary level, as research with these students is especially limited. It is possible that the supportive features embedded within digital texts could have a different impact on students' achievement in the upper elementary grades where they are reading more complex texts.

Finally, additional research should be conducted to investigate the impact of using digital books for other aspects of reading instruction beyond SSR. This study limited the use of digital books for the treatment group to their daily thirty minutes of SSR. However, it is possible that digital texts may have had a more significant impact if students were permitted to utilize the digital texts during their whole group and small group reading instruction and even during other subjects, such as Science, Social Studies, and Mathematics. Perhaps, extending the time students are interacting with digital texts on a daily basis could further improve their reading achievement.

It is clear that additional research is necessary to determine the impact that using digital books in the classroom has on students. The research is currently somewhat limited, but it will likely continue to expand as more classrooms are equipped with one-to-one devices. Further research will assist educators in knowing how to most effectively utilize digital texts in their classrooms.

Conclusion

The purpose of this study was to determine the impact on reading achievement and reading motivation of using digital texts versus traditional, printed texts with first grade students during Sustained Silent Reading. The results of the study suggest that digital texts do not have a greater impact on the reading achievement or reading motivation of first grade students than traditional, printed text. Further research should be conducted on larger representative samples over longer periods of time to develop a more thorough understanding of the impact digital texts have on students with reading disabilities and students of various ages, as well as the impact of using digital texts beyond independent reading. Until educators have a better understanding of how using digital texts will impact their students, they should retain a balanced approach to

reading instruction that includes traditional, printed texts and digital texts, if they have them available. The results of this study suggest that school districts should not abandon traditional, printed texts until the effects of using digital texts are more fully explored.

REFERENCES

- Allington, R. L. (2001). *What Really Matters for Struggling Readers: Designing Research-Based Programs*. New York: Longman.
- Cahill, M., & McGill-Franzen, A. (2013). Selecting 'app' ealing and 'app' ropriate book apps for beginning readers. *Reading Teacher*, 67(1), 30-39. doi:10.1002/TRTR.1190
- Cambria, J., & Guthrie, J. T. (2010). Motivating and engaging students in reading. *New England Reading Association Journal*, 46(1), 16-30.
- Capen, R. (2010). The role of the teacher and classroom environment in reading motivation. *Illinois Reading Council Journal*, 38(4), 20-25.
- Chera, P., & Wood, C. (2002). Animated multimedia "talking books" can promote phonological awareness in children beginning to read. *Learning and Instruction*, 13(1), 33-52.
- Ciampa, K. (2012). ICANREAD: The effects of an online reading program on grade 1 students' engagement and comprehension strategy use. *Journal of Research on Technology in Education*, 45(1), 27-59.
- De Jong, M., & Bus, A. (2002). Quality book-reading matters for emergent readers: An experiment with the same book in regular or electronic format. *Journal of Educational Psychology*, 94(1), 145-155.
- De Jong, M., & Bus, A. G. (2003). How well suited are electronic books to supporting literacy? *Journal of Early Childhood Literacy*, 3(2), 147-164.
- De Jong, M., & Bus, A. (2004). The efficacy of electronic books in fostering kindergarten children's emergent story understanding. *Reading Research Quarterly*, 39(4), 378-393.
- Ermitage, J., & Van Sluys, K. (2007). Reading, learning, relaxing, and having fun: Third-grade perspectives on sustained silent reading. *Illinois Reading Council Journal*, 35(2), 11-21.

- Gambrell, L. B. (1996). Creating classroom cultures that foster reading motivation. *The Reading Teacher*, 50(1), 14-25.
- Gambrell, L. B., Palmer, B. M., Codling, R. M., & Mazzone, S. A. (1996). Assessing motivation to read. *The Reading Teacher*, 49(7), 518-533.
- Grimshaw, S., Dungworth, N., McKnight, C., & Morris, A. (2007). Electronic books: Children's reading and comprehension. *British Journal of Educational Technology*, 38(4), 583-599. doi:10.1111/j.1467-8535.2006.00640.x
- Guthrie, J. T., McRae, A., & Klauda, S. L. (2007). Contributions of concept-oriented reading instruction to knowledge about interventions for motivations in reading. *Educational Psychologist*, 42(4), 237-250. doi:10.1080/00461520701621087
- Guthrie, J. T., & Wigfield, A. (2000). Engagement and motivation in reading. In M.L. Kamil, P.B. Mosenthal, P.D. Pearson, & R. Barr (Eds.), *Reading research handbook, Vol. III* (pp. 403-424). Mahwah, NJ: Erlbaum.
- Heinemann. (2011). Fountas and Pinnell Benchmark Assessment System (1 and 2): The research base. Retrieved from <http://www.heinemann.com/fountasandpinnell/research/BASResearchBase.pdf>
- Heinemann. (2012). Benchmark Assessment System Executive Summary. Retrieved from <http://www.heinemann.com/fountasandpinnell/research/BASExecSummary.pdf>
- Higgins, N. C., & Cocks, P. (1999). The effects of animation cues on vocabulary development. *Reading Psychology*, 20(1), 1-10. doi:10.1080/027027199278475
- Johnson, D., & Blair, A. (2003). The importance and use of student self-selected literature to reading engagement in an elementary reading curriculum. *Reading Horizons*, 43(3), 181-202.

- Jones, T., & Brown, C. (2011). Reading engagement: A comparison between e-books and traditional print books in an elementary classroom. *International Journal of Instruction*, 4(2), 5-22.
- Karasakaloglu, N. (2012). The relationship between reading comprehension and learning and study strategies of prospective elementary school teachers. *Educational Sciences: Theory & Practice*, 12(3), 1939-1950.
- Klingbeil, D. A., McComas, J. J., Burns, M. K., & Helman, L. (2015). Comparison of predictive validity and diagnostic accuracy of screening measures of reading skills. *Psychology in the Schools*, 52(5), 500-514. doi:10.1002/pits.21839
- Korat, O., & Shamir, A. (2008). The educational electronic book as a tool for supporting children's emergent literacy in low versus middle SES groups. *Computers & Education*, 50(1), 110-124. doi:10.1016/j.compedu.2006.04.002
- Korat, O. (2010). Reading electronic books as a support for vocabulary, story comprehension and word reading in kindergarten and first grade. *Computers & Education*, 55(1), 24-31. doi:10.1016/j.compedu.2009.11.014
- Larson, L. C. (2012). It's time to turn the digital page: Preservice teachers explore e-book reading. *Journal of Adolescent & Adult Literacy*, 56(4), 280-290. doi:10.1002/JAAL.00141
- Lefever-Davis, S., & Pearman, C. (2005). Early readers and electronic texts: CD-ROM storybook features that influence reading behaviors. *The Reading Teacher*, 58(5), 446-454.
- Luck, S. A. (2010). Accelerated reader: A literature review of the effectiveness of accelerated reader in increasing reading achievement and student motivation. *Illinois Reading Council Journal*, 38(2), 3-9.

- Mahdavi, J. N., & Tensfeldt, L. (2013). Untangling reading comprehension strategy instruction: Assisting struggling readers in the primary grades. *Preventing School Failure, 57*(2), 77-92. doi:10.1080/1045988X.2012.668576
- Malloy, J. A., Marinak, B. A., Gambrell, L. B., & Mazzoni, S. A. (2013). Assessing motivation to read. *Reading Teacher, 67*(4), 273-282. doi:10.1002/trtr.1215
- Margolis, H., & McCabe, P. P. (2004). Self-efficacy: A key to improving the motivation of struggling learners. *The Clearing House, 77*(6), 241-249.
- Marinak, B. A. (2013). Courageous reading instruction: The effects of an elementary motivation intervention. *Journal of Educational Research, 106*(1), 39-48. doi:10.1080/00220671.2012.658455
- Marinak, B. A., & Gambrell, L. B. (2008). Intrinsic motivation and rewards: What sustains young children's engagement with text? *Literacy Research and Instruction, 47*(1), 9-26.
- Matthew, K. (1997). A comparison of influence of interactive CD-ROM storybooks. *Journal of Research on Computing in Education, 29*(3), 263-268.
- McElmeel, S. (2015). What are young learners reading? *Teacher Librarian, 42*(4), 29-33.
- McKenna, M. C. (2014). Literacy instruction in the brave new world of technology. *Phi Delta Kappan, 96*(3), 8-13.
- Medwell, J. (1998). The talking books project: Some further insights into the use of talking books to develop reading. *Reading, 32*(1), 3-8.
- Miller, D. (2012). Creating a classroom where readers flourish. *Reading Teacher, 66*(2), 88-92. doi:10.1002/TRTR.01109
- Monteiro, V. (2013). Promoting reading motivation by reading together. *Reading Psychology, 34*(4), 301-335. doi:10.1080/02702711.2011.635333

- Morgan, H. (2013). Multimodal children's e-books help young learners in reading. *Early Childhood Education Journal*, 41(6), 477-483.
- Neugebauer, S. R. (2013). A daily diary study of reading motivation inside and outside of school: A dynamic approach to motivation to read. *Learning & Individual Differences*, 24(1), 152-159. doi:10.1016/j.lindif.2012.10.011
- Oakley, G., & Jay, J. (2008). "Making time" for reading: Factors that influence the success of multimedia reading in the home. *Reading Teacher*, 62(3), 246-255.
- Pearman, C. J. (2008). Independent reading of CD-ROM storybooks: Measuring comprehension with oral retellings. *Reading Teacher*, 61(8), 594-602. doi:10.1598/RT.61.8.1
- Pearman, C. J., & Lefever-Davis, S. (2006). Supporting the essential elements with CD-ROM storybooks. *Reading Horizons*, 46(4), 301-313.
- Quirk, M. P. (2004). Do supplemental remedial reading programs address the motivational issues of struggling readers? An analysis of five popular programs. *Reading Research and Instruction*, 43(3), 1-19.
- Ricci, C. M., & Beal, C. R. (2002). The effect of interactive media on children's story memory. *Journal of Educational Psychology*, 94(1), 138-144. doi:10.1037/0022-0663.94.1.138
- Schugar, H. R., Smith, C. A., & Schugar, J. T. (2013). Teaching with interactive picture e-books in grades K-6. *Reading Teacher*, 66(8), 615-624. doi:10.1002/trtr.1168
- Seyit, E. (2010). The effect of electronic storybooks on struggling fourth- graders' reading comprehension. *The Turkish Online Journal of Educational Technology*, 9(4), 140-155.
- Shamir, A., & Korat, O. (2006). How to select CD-ROM storybooks for young children: The teacher's role. *The Reading Teacher*, 59(6), 532-543.

- Shamir, A., Korat, O., & Fellah, R. (2012). Promoting vocabulary, phonological awareness and concepts about print among children at risk for learning disability: Can e-books help? *Reading and Writing*, 25(1), 45-69. doi:10.1007/s11145-010-9247-x
- Smith, J. K., Smith, L. F., Gilmore, A., & Jameson, M. (2012). Students' self-perception of reading ability, enjoyment of reading and reading achievement. *Learning & Individual Differences*, 22(2), 202-206. doi:10.1016/j.lindif.2011.04.010
- Stanovich, K. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly*, 21(4), 360-407.
- Topping, K. J., Samuels, J., & Paul, T. (2007). Does practice make perfect? Independent reading quantity, quality and student achievement. *Learning & Instruction*, 17(3), 253-264. doi:10.1016/j.learninstruc.2007.02.002
- Tovli, E. (2014). The joy of reading: An intervention program to increase reading motivation for pupils with learning disabilities. *Journal of Education and Training Studies*, 2(4), 69-84.
- Trudel, H. (2007). Making data-driven decisions: Silent reading. *Reading Teacher*, 61(4), 308-315. doi:10.1598/RT.61.4.3
- Union, C., Union, L., & Green, T. (2015). The use of eReaders in the classroom and at home to help third-grade students improve their reading and English/language arts standardized test scores. *TechTrends: Linking Research & Practice to Improve Learning*, 59(5), 71-84. doi:10.1007/s11528-015-0893-3
- Villiger, C., Niggli, A., Wandeler, C., & Kutzelnann, S. (2012). Does family make a difference? Mid-term effects of a school/home-based intervention program to enhance reading motivation. *Learning & Instruction*, 22(2), 79-91. doi:10.1016/j.learninstruc.2011.07.001

- Wood, C. (2005). Beginning readers' use of talking books software can affect their reading strategies. *Journal of Research in Reading, 28*(2), 170-182. doi:10.1111/j.1467-9817.2005.00261.x
- Wright, S., Fugett, A., & Caputa, F. (2013). Using e-readers and internet resources to support comprehension. *Journal of Educational Technology & Society, 16*(1), 367-379.
- Zentall, S. S., & Lee, J. (2012). A reading motivation intervention with differential outcomes for students at risk for reading disabilities, ADHD, and typical comparisons: Clever is and clever does. *Learning Disability Quarterly, 35*(4), 248-259.
doi:10.1177/0731948712438556
- Zucker, T. A., Moody, A. K., & McKenna, M. C. (2009). The effects of electronic books on pre-kindergarten to grade 5 students' literacy and language outcomes: A research synthesis. *Journal of Educational Computing Research, 40*(1), 47-87.