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Using Electronic Books to Increase Elementary Students' Motivation to Read

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Using Electronic Books to Increase Elementary Students' Motivation to Read

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Abstract

One of the main challenges that elementary teachers face is developing a reading program that adequately meets the need of all students. Given that not all students learn in the same manner, it is imperative that teachers find ways to motivate and excite all students when it comes to reading. Research has shown that motivation for reading predicts reading achievement as it is reflected on standardized tests and in school grades (Sweet, Guthrie, & Ng, 1998). Forms of technology such as digital books, CD-ROM storybooks, and interactive software programs have been successful in both motivating students to read and improving reading fluency skills. This research explores ways in which electronic books can be used to motivate students to read, thereby improving their reading skills. This research also provides information detailing the extensive use of electronic books in one elementary classroom. Results indicate that electronic books are motivating to elementary students.

Chapter 1 Introduction

“If students aren’t learning the way you teach, teach the way they learn.”

-Unknown

The ten o’clock bell rings, signaling the start of our reading center period. Students quickly find their name on the reading centers chart and head to their appropriate stations. Five students join me for a guided reading session using the school adopted Houghton Mifflin basal readers. One of my lowest readers lets out a heavy sigh as he settles into the seat across from me and I watch as he looks longingly at the computer station. When it is his turn to read, the student stumbles over the words and looks to me for help. His expression reveals signs of anxiety, frustration and embarrassment. “I can’t read this,” he declares. “Can I please go to the computer station?” he asks.

His question prompts me to turn my attention to the group working at the computer station. Despite the fact that they are some of the lowest readers in the class, there is an air of excitement that seems to be surrounding these kids; something is motivating them to keep reading. They appear happy, even giddy, yet they remain focused on the reading activity. These students show no signs of anxiety, apathy or frustration as they work at the computers. They help each other out when difficulties arise and cheer for each other’s accomplishments. They are clearly motivated to read at that station.

Reading can be a daunting task for many elementary students. Frustration, anxiety, apathy and even anger are feelings that I have observed amongst my students who are learning to read. When provided with a traditional text-based basal reader (a textbook used to teach reading skills to children), some students are quick to state that

they simply cannot read. These same students, however, will happily march over to the computer to read an electronic book. Why are these students so eager to read the same level of words online that they are hesitant to read in a standard textbook page? Given that the reading material is the same, what is it about technology that seems to motivate many of these students? Is it possible that digital technology is reaching these students in a way that traditional books are not?

Students entering school today are growing up in a technology driven, digital world. They do not know of a world that does not include the Internet. Technology has advanced to the point that there is an ever-increasing use of digital media in leisure time activities. This ever-increasing daily use has changed the way children think, learn, and how they give and receive information (Dresang & McClelland, 1999). In a 2003 study conducted by the Kaiser Foundation, researchers reported that children from birth to six spend an average of two hours per day using screen media (TV, videos, DVD, computers and video games). These same children only spend approximately 39 minutes a day reading or being read to by others (Rideout, Vandewater, & Wartella, 2003). We can no longer separate literacy from technology, because children are exposed to technology from a young age. Given the influence of technology on today's youth, it is not surprising that electronic books and other forms of digital media have demonstrated a positive effect on motivating students to read.

Gardner's theory of multiple intelligences states that in any given classroom, students approach learning in different, but complementary ways (Gardner, 1993). According to Gardner, human beings have eight different kinds of intelligence that reflect different ways of interacting with the world. Each person has a unique combination,

thereby indicating that students learn in their own unique manner. It can be a challenge for teachers to meet these varying needs of all their students. The theory of multiple intelligences suggests that teachers present their lessons in a wide variety of ways using music, cooperative learning, art activities, role play, multimedia, field trips, inner reflection, and much more.

By integrating multiple intelligences into daily reading lessons, student motivation to read will increase (Herbe, Thielenhouse & Wyker, 2002). Electronic books, specifically, can appeal to multiple intelligences. Some electronic books contain text enhancements, such as definitions or background information while others offer illustrations that accompany the story. Hypermedia (links to text, data, graphics, or video) offers students an opportunity to move around the page and click on links to access additional information. Electronic talking books provide embedded speech and support students with additional auditory information such as pronunciations of specific words and digitized reading of general sections. The mixture of visual, tactile, and listening modalities enables many students to learn through their preferred modality (Pogrow, 1990).

According to Allington (2002), one of the best ways for students to become better readers is to read more. In order for this to happen, students need to be motivated to read in the first place. In this project, I explore the potential that electronic books have to motivate students and relate my observations to the motivation theory set forth by Pintrich and DeGroot (1990).

Statement of Problem

In today's digital world, technology saturates our children's lives. The youth of today are growing up surrounded by computers, the Internet, mobile devices and countless other tech products, which seem to capture their attention like nothing else can. The approach to elementary reading curriculum needs to shift into the digital age so that these technology-hungry students will continue to be motivated. To many students, standard reading curriculum appears archaic and uninspiring.

Purpose

We are living in a technologically driven world. Students of today are clearly excited and motivated by the latest tech products. My goal for this directed research project is to illustrate ways in which electronic books motivate students and provide a model for how teachers can use this type of reading technology. Through my research I hope to show that electronic books motivate students to read, thereby helping them to become better readers. Additionally, this project offers educators an example of one second-grade teacher who has successfully incorporated electronic books into a traditional reading curriculum. I believe that this case study will provide a model for teachers aiming to transition their classroom to align with students of today's digital world.

Research Question

The focus of this research project is to explore the use of digital books in an elementary classroom and demonstrate how they can be used to increase student motivation to read. The intent of this research is to examine the following:

- (a) how electronic books are utilized in a reading program

(b) to what extent are students motivated by electronic books

(c) how a second grade teacher views the pedagogical role of electronic books in the reading curriculum. My research aims to answer the question: What is the experience of one second grade classroom using electronic books to learn literacy skills?

Theoretical Rationale

The motivation to learn is defined as a student's tendency to find academic activities significant and worthwhile and to try to get the intended learning benefits from them (Brophy, 1983). Research has shown that motivation for reading among early elementary readers can predict reading achievement on standardized tests and in school grades (Sweet et al. 1998). Unfortunately, it is my experience that given the digital world that we live in today, standard printed books do not always motivate or excite students about the reading process. I discuss the theory of motivation in order to provide a foundation.

The purpose of motivational theory is to explain student behaviors and influence future behavior. It is argued that learners' motivation is largely based on their expectancy beliefs in and task values of the content (Eccles et al., 1983). Eccles and her colleagues (1983) formulated an expectancy-value model in which expectancy refers to learners' belief about success in accomplishing a task, and the value refers to learners' perceptions of the worth of the task, including importance and interest. Recent theories of motivation can be categorized as adaptations of the general expectancy-value model of motivation (Pintrich & DeGroot, 1990). According to the model set forth by Pintrich and DeGroot (1990), motivation depends on three variables: value, expectancy, and emotions.

The value component of student motivation addresses the question of why an individual becomes engaged in an instructional activity. This involves students' beliefs about the importance and interest of the task and essentially answers the question "Why should I spend time and effort on this lesson?" Engagement in the task differs with the value that students place on the task. Students will engage in activities that they think are fun, require a moderate amount of effort, and are reasonably challenging. If students view the activity as boring or too difficult, they will most likely avoid the task. Thus, student perception of both the nature of the activity and the importance of the activity will determine whether or not a student is motivated to participate.

The second motivational component of Pintrich and DeGroot's model (1990) focuses on students' expectancy, or confidence in their own skills. It involves students' answers to the question, "Am I capable of accomplishing this task?" Students who feel capable of completing a task and feel that they will be successful will choose to engage. On the other hand, students who feel that the task is too difficult or those who anticipate failure, will choose not to engage. The learning environment is a key factor in influencing students' sense of competence about their abilities. Positive learning environments provide nurturing experiences for students to build self-confidence in their skills. In such an environment, students are able to develop their skills without the fear of failure.

The final component of Pintrich and DeGroot's motivational model focuses on students' emotional reactions to the task presented. The important issue for students involves the question, "How do I feel about myself and the work required in this lesson?" According to the self worth theory (Covington, 1984), a students' need to protect their sense of self worth or personal value can affect their willingness to perform. The self

worth theory rests upon the perception that students are motivated to establish, maintain, and promote a positive self-image.

Children in their early school years often believe that a strong effort can increase their ability. They recognize that if they fail, there is no reason to feel bad; their feelings of self worth remain strong. As children grow into adolescence, however, social comparisons cause students to develop lower feelings of self-worth. Competition in the classroom magnifies the pride associated with success and the shame associated with failure. This environment can produce a class of students who attempt to reduce the likelihood of failure by performing the minimal amount necessary.

In summary, affecting students' values, expectancy, and emotions can improve their motivation for the tasks at hand. Improved motivation will increase the likelihood that students will commit the time and effort necessary to achieve the learning objectives. Motivation is an important part of the learning process and a necessary component to take into account when planning successful lessons.

Heafner (2004) uses the three factors of the expectancy-value model to show how the implementation of technology positively impacted students' motivation to learn. Qualitative methods were used to provide an in-depth description of technology use in a natural setting. The study, based on twenty-five high school government students, had students work in a computer lab to create PowerPoint slides as a political campaign advertisement for their state's senatorial race. Students were able to search the Internet and be as creative as possible with their slides, incorporating sound bytes, video clips, pictures, text and animation. Students were excited about learning and displayed pride in the PowerPoint slides they created. Due to their familiarity with technology, students

suddenly felt confident in their ability to accomplish the project and enjoyed working on a task that they viewed as challenging and engaging. All students reported enjoyment in the task because technology made their work easier and more fun to do. Based on interviews, observations, field notes and work samples, the study revealed high levels of motivation surrounding this technology project. This was in contrast to a control group in a traditional classroom environment, where students avoided the task because they viewed the task as boring. This study illustrates the way in which technology can change the value of a task, increase student self-efficacy, and improve student worth.

Gardner (1993) states “people are different and have different minds.” To accommodate these differences, teachers must find ways to build on all students’ strengths in order to help increase self-esteem and relevancy to students’ lives. Herbe et al. (2002) found that the integration of multiple intelligences into daily lesson plans can successfully increase students’ motivation to read. The study consisted of one first grade and two fourth grade classrooms located in two suburbs of a major metropolitan city. The study altered reading curriculum by appealing to all eight of the multiple intelligences set forth by Gardner. In order to increase instructional emphasis on multiple intelligences, the following processes were implemented over a four month period:

1. A series of activities that increase student knowledge of multiple intelligences was implemented.
2. Materials that enable the use of multiple intelligences in reading were utilized.
3. A series of learning activities that incorporate multiple intelligences in reading were implemented.

4. Weekly self-assessment, individual goal-setting, and student reflection were incorporated.

Based on the improvements as interpreted from the data on student surveys, reading assessments, observation checklists, and student goals, the study concluded that the broadened curriculum helped students develop an appreciation for reading. The researchers concluded that the focus on various learning styles piqued curiosity and increased students' self esteem as students became more comfortable with the learning process. Addressing the multiple intelligences enabled students to learn in a style that fit their individual needs and resulted in an increased motivation to read.

The expectancy-value model of motivation can be applied here. I infer that the above study shows how incorporating multiple intelligences into the classroom can change the value of a task, increase student self-efficacy, and improve student worth. Teaching to all types of intelligences improves the likelihood that student interest will be peaked by the task at hand. Students who are able to focus on their strengths enjoy the learning process and are not inclined to give up as easily (White, Blythe, Gardner as cited in Herbe et al., 2002).

Assumptions

It is my assumption that many students are not motivated by traditional print based reading programs. I believe that if a student is motivated to read, he or she will improve his or her reading abilities. I also think that the use of technology is motivating to students. Finally, it is my supposition that reading technology can prepare students for the real world in a way that using solely teacher-led instruction cannot. Given the

prominent role that technology plays in today's society, it is important that we incorporate it into the education curriculum in a variety of ways.

Background and Need

It is generally acknowledged that motivation plays a critical role in learning. It often makes the difference between learning that is superficial and shallow and learning that is deep and internalized. Deci and Ryan's (1985) theory of intrinsic motivation suggests that the human being prefers to act in a "competent" manner in order to reach goals and fulfill needs. Intrinsic motivation has long been associated with numerous aspects of academics and teaching methods. Students who are intrinsically motivated are more likely to pursue a task for its inherent pleasure (Naccarato, 1988). They focus on the task rather than the self, and learning is generally a pleasurable experience rather than merely a means to an end. Students who are encouraged to develop intrinsic motivation in their early years continue to be intrinsically motivated in their further education, thus providing the basis for achievement motivation in later years (Gottfried, 1983).

Research has shown that children who are motivated and who spend more time reading are better readers (Anderson, Wilson, & Fielding, 1988). Furthermore, studies have linked intrinsic reading motivation to:

- Greater reading frequency and greater breadth of reading
- Greater reading enjoyment
- Greater retention of key information
- Greater persistence in coping with difficulties, mastering the required skills and

becoming self-determined in reading tasks (Clark & Rumbold, 2006)

Because of the powerful influence that motivation plays in literacy learning, educators are constantly searching for that “perfect book” with which they can motivate students to read. The book has always been one of the main focal points and foundations of modern education. But with the advent of the information age, the concept of a book is in the midst of a technological transformation. As educators integrate new technologies into teaching, the book is undergoing a transformation to include what is known as the electronic book (or e-book), which includes a wide range of technologies, from CD storybooks to audio books to online books. Our paradigm of the book needs to shift to encompass today’s wide variety of book formats, both print and digital. And educators need to recognize the advantages, options and scaffolds that these digital forms present.

Given that digital books are still relatively new to the field of education, there are few studies that investigate the effects these books can have on the teaching and learning process particularly with elementary students. These studies do not focus on the motivational benefits that digital books provide. Furthermore, these studies do not present descriptions of how educators can successfully implement digital books into their classroom in order to provide a more comprehensive reading curriculum. It is my hope that this case study will provide educators, administrators, parents, and anyone else interested in digital books with a starting point for exploring the countless ways that digital books can be applied to reading education.

Chapter 2 Review of the Literature

The purpose of this project is to determine ways in which technology, such as electronic books, can be used to help motivate elementary students to read, thereby improving their reading skills. The goal of this literature review is to compile previous research to show that a) motivation to read leads to improved reading skills, b) in general, technology motivates students, and c) more specifically, the use of electronic books motivates students to read.

Motivation to Read Leads to Improved Reading Skills

The motivation to read is an important contributor to student reading achievement and school success. Research has shown that children who are motivated and who spend more time reading are better readers (Anderson, Wilson, & Fielding, 1988). For students in grades 3-5, motivation for reading predicts reading achievement and school grades (Sweet, Guthrie, & Ng, 1998).

Both McCormick's (1994) and Worthy's (1998) case studies of nonreaders and reluctant readers found that motivation is instrumental to reading achievement. It has also become increasingly apparent that the acquisition of reading skills demands a large amount of effort and motivation (Wang & Guthrie, 2004). Baker and Wigfield indicate that high reading motivation and positive attitudes towards reading are associated with higher reading achievement and frequent reading (1999).

Wigfield and Guthrie (1997) found that reading motivation correlates with amount of reading. They reported that highly motivated children read three times as much outside of school as their less motivated peers. This finding is also important in that students' self-initiated reading has been shown to predict their proficiency in vocabulary

and reading comprehension (Cunningham & Stanovich, 1998; Guthrie, Schafer & Huang, 2001).

Wang and Guthrie (2004) document that reading motivation contributes directly to reading comprehension. Their study examined the extent that motivation plays in the comprehension of texts and the extent of culture's role in children's motivational processes of text comprehension. The relationship between intrinsic and extrinsic motivation, the amount of reading, past reading achievement, and text comprehension were examined. Fourth-grade students (187 U.S. and 197 Chinese) were administered a reading test and two questionnaires to determine reading motivation and reading amount. The data revealed that intrinsic motivation predicted text comprehension for both student groups. Extrinsic motivation negatively predicted text comprehension except when associated with intrinsic motivation.

Students are Motivated by Technology

Over the last decade the rapid infiltration of technology has significantly changed the daily lives of students of all ages (Leu & Kinzer, 2002). The ever-increasing daily use of digital media has impacted the way children think, learn and how they give and receive information (Dresang & McClelland, 1999). Before students enter kindergarten, they are well accustomed to technologies such as CDs, DVDs, and the Internet. Studies have shown that children spend an average of four thousand hours over their teenage years in front of video or computer screens (Prensky, 2001). Due to this increased computer usage, several studies have supported claims that today's teenagers' brains have been rewired by this increased exposure to computerized media.

According to Kenny and Gunter (2004), today's teachers need to realize that children of today speak *digital*, and to them, text-based communication is like learning a second language. They state: "The difficulties we face in motivating students towards the text-based world are similar to those we used to have in motivating students to speak foreign languages." Kenny and Gunter propose that a new way of teaching literacy should be investigated. They argue that today's media-centric youths would benefit from using technology programs to help motivate and talk to them in their own language.

It is widely agreed that the computer has positive motivational influences (Ross, Hogaboam-Gray, & Hannay, 1999; Wright, 1998). In fact, providing students with their own computers can help increase achievement in reading and writing, improve research and analytical skills, and boost attendance, among other gains (McLester, 2001). Rosalia (2002) says, "Technology is a magnet for teens... Today's students are the first digital generation fully comfortable with technology as a way of life." Roth and Beck (1987) found that their computer-based word-recognition programs contributed to improved motivation for struggling students. Instead of less motivating teacher-directed instruction in decoding skills or workbook practice, the game-like format allowed for engagement and set up a challenging environment. Likewise, Smith found that students have positive attitudes toward word processing (1991).

A study of kindergarten students using hypermedia-based software to teach letter recognition found that, although at-risk readers benefited the most from the software, all students were enthusiastic about using the computers and were motivated to explore and learn from the software (Boone, Higgins et al 1996). Mitchell & Fox (2001) found that when students were presented with comparable paper and electronic resources,

kindergarten and first-grade students preferred to wait for an opportunity to use the electronic version, even if a print version was immediately available.

With upper-elementary children, a study of hypermedia use in mainstream fourth- and fifth-grade classrooms found a number of benefits in addition to students' gains in reading abilities and willingness to work collaboratively (Reinking & Watkins 1996). Classroom teachers reported marked increases in several relevant areas: the number of hours spent on recreational reading, the number of students holding library cards, and the number of students ordering summer book club memberships, among others. Parents of the students also reported that their children were more motivated when it came to reading.

As a result of today's trend towards a digital world, literacy educators of all grade levels are recognizing the need to make education more responsive to today's learners (Leu, 2002). In 2006, Greaves and the Hayes Connection released a survey of approximately 1,000 school officials from 400 districts across the country. The research revealed that 80 percent of curriculum directors agreed that print textbooks will be replaced by a new generation of digital curriculum within five years. Less than twenty-five percent believed instructional material would stay the same.

Historical Context for Electronic Books: Benefits and Drawbacks

It is useful to start by providing the historical context behind electronic books. In 1967, Van Dam, a technology professor at Brown University, first coined the term "electronic book" while he was developing hypertext on a computer (Ardito, 2000). In 1971 Michael Heart created Project Gutenberg, which became the first producer of free electronic books through the Internet. Currently Project Gutenberg has nearly 30,000 free

books available in their online book catalog. The Project Gutenberg Philosophy is to make information books and other materials available to the general public in forms a vast majority of the computers, programs and people can easily read, use, quote, and search.

Floppy disk books, an experiment of the early 1980s, were limited by the small capabilities of the disks. They were quickly replaced by the CD-ROM form in the late 1980s. The CD e-book quickly expanded into two main areas, the children's storybook and the digital encyclopedia. Both of these e-book forms added multimedia, hypermedia and other interactive elements. In 1998 electronic books achieved serious recognition when the National Institute of Standards and Technology held the first international e-book conference. One of the main issues discussed was the e-book format, which is still in contention today.

Today there are many different types of electronic books, which can be accessed on a wide variety of devices. No longer limited to computers connected to the Internet, e-books can be stored and read on laptops, cell phones and special reading devices such as the Leapfrog LeapPad. Although e-books have in no way replaced traditional printed books, there does seem to be an ever increasing air of inevitability regarding the move to electronic textbooks. Californian governor, Arnold Schwarzenegger, recently announced that California would start providing free electronic textbooks in August of 2009

Whether available on CD-ROM, the Internet, or special disks, electronic books always provide the text in a visual component. Some electronic books incorporate text enhancements, such as definitions of words or background information on ideas. Others offer illustrations that complement the story. Electronic books are often equipped with

hypermedia, which is comprised of links to text, data graphics, audio or visuals. As students read the text, they are able to click on the links to access definitions of words, additional information on concepts, illustrations, animations, and video, all of which can increase their understanding of the text. The term *electronic talking books* refers to the same type of electronic texts that additionally provide the feature of embedded speech. The speech component in electronic talking books offers a digitized reading of general sections as well as pronunciations of specific words within the text.

It has often been stated that electronic books can be highly motivating to students (Collins, Hammond & Wellington, 1997; Glasgow, 1996; McKenna, 1998). According to McKenna (1998), electronic storybooks hold the potential to help children extend their vocabulary, word knowledge, and concepts about print, and story comprehension. The computerized technology puts the child in control of their environment. In a study of 45 third graders, Adam and Wild (1997) found that electronic books can be motivating, particularly for reluctant readers.

Studies investigating the use of electronic books for instructional purposes have found several benefits to children's literacy development. Lewin (2000) reported that word recognition skills of kindergarteners were improved following activity with e-books. Chera and Wood (2003) found that electronic books contribute to the enhancement of young children's phonological awareness. Many of these electronic texts provide the reader with the ability to self-select assistance, meaning they can make the choice for themselves when and where they need help. When readers come to an unfamiliar word or phrase, they can click on the text to have the computer read it aloud for them. These features reduce the burden of decoding for the reader so more energy and

attention can be applied toward processing meaning for comprehension (McKenna, 1998). This feature provides readers with the scaffolding needed to read materials closer to their listening comprehension level (Reinking, 1997).

Multisensory features such as audio support, animations and video clips add layers of meaning to electronic books that is not found in traditional texts (McNabb, 1998). The inclusion of such features facilitates reader comprehension by reflecting text action and signaling the mood of the story (Labbo, 2000). For example, in the story *The Three Little Pigs*, an animated graphic is seen of the wolf blowing down the house while the pigs inside scream in fright. The context is established from watching this scene unfold via animation prior to children reading the text. Ominous music comes from the computer as children hear the pigs screaming and the wolf yelling – clues to the reader that something is about to happen. This pairing of graphics and audio not only enhances the context but also helps set the mood the author is trying to establish.

According to numerous research studies, the use of electronic books has shown positive results as an aid to help children improve their comprehension of texts (Hastings, 1997; Lewin, 1997, McKenna, 1998). In a study based on 54 students from an elementary school in a large rural district located in the Southern United States, Pearman (2008) found that electronic books facilitated reading comprehension for second grade students who were struggling with developing reading skills and strategies. Students with varying degrees of reading proficiency scored higher on an oral retelling when provided with text at their reading level presented via electronic storybook format rather than a traditional print format. In conclusion, Pearman argues that the use of electronic books in the

classroom as part of a reading instruction program, literacy center, or for independent reading time could be beneficial for young readers.

Mathews (1997) conducted a study that involved 37 matched pairs of students reading either CD-ROM or print versions of books. The major finding of this experiment is that readers' comprehension can be increased with the use of electronic texts and can be enhanced by the multisensory environment of interactive electronic books. Once students finished reading the texts and completing the comprehension assessments, they returned to the electronic texts to reread the stories and explore the illustrations. However, students were not interested in returning to the text and illustrations after completing the assessments on the print texts. When questioned informally about their preferences, the students in this study preferred the CD-ROM book to the print versions.

Grimshaw (2007) found additional benefits to electronic texts in his study. Children's reading and comprehension skills were examined based on print versus electronic text. Children were tested under several different conditions including having them read the electronic text of the storybook with and without narration, animations and sound effects. Although the results showed that children took longer to read from a computer screen compared to a printed book, the children who read from the book took longer to complete the comprehension test. The children who had been placed in the test group that had access to a CD-ROM version of the story with narration turned on generally did the best on the comprehension test. Some additional observations from the test included that the children made very good use of the electronic dictionary that was easily accessible within the CD-ROM version of the text. This far exceeded any use that came from the paper version of the dictionary. Additionally, students mentioned that

narration in the electronic version helped them when they did not know the pronunciations of certain words.

Not all researchers agree that features in electronic books are beneficial, however. Some researchers suggest that the same electronic text features that enhance context may actually be detrimental to student comprehension in the long run by allowing students to use the features without learning to consciously make connections between text and their own prior knowledge (Labbo et al., 2003; Lewin, 1996). Readers may rely on the computer to decode words or to read the story rather than develop their own abilities. Without practicing decoding skills, students may never develop the ability to decode words on their own. In the long run, an over reliance on certain electronic text features may hinder literacy development because the use of reading strategies does not become an integral part of the reading process for beginning readers (McKenna, 1998).

Research surrounding electronic books is in the formative stages, with the available evidence regarding the efficacy of electronic books still inconsistent. Despite mixed results, the vast majority of the research points to the fact that electronic books can provide many benefits, one of the most significant being an element of motivation.

Additional Sources of Information

Statistical Information

Each year the National Center for Education Statistics (NCES) conducts a nationally representative survey of public schools to gauge the changes in computer and Internet availability. Research is based on measures such as student-to-computer ratio and the percentage of schools and classrooms with Internet connections. According to the most recent report, by the year 2005 nearly 100 percent of public schools in the United States had access to the Internet, compared with just 35 percent in 1994 (National Center

for Education Statistics, 2008). A majority of students also use computers at home. In 2003, 68 percent of elementary and secondary school students used computers at home, compared to 43 percent in 1997.

I find this data to be important to my research because it shows the increasing trend and prevalence of technology in today's students' lives. According to the report, with each passing year there is an increase in the percentage of public school instructional rooms with Internet access. Although the increase has slowed down the past few years (2000-2005 showed a 7 % increase compared to a 69% increase from 1995-2000), it seems clear that technology in schools is not a passing trend. Given these statistics, I feel that the obvious next step is for elementary reading programs to embrace technology and find ways to include digital books in the standard curriculum.

Administrative Records: Technology Standards

Each year the International Society for Technology in Education (ISTE) creates National Educational Technology Standards for both students and teachers. The goal of these standards is to improve both teaching and learning by advancing the effective use of technology in education. Furthermore, the standards for students help students prepare to work and live in our emerging global society (International Society for Technology in Education, 2008).

On a state level, the California Department of Education (CDE) provides the below definitions of Technology Literacy and Curriculum Integration proficiency goals.

Technology Literacy is the ability to use appropriate technology responsibly to communicate, to solve problems, and to access, create, integrate, evaluate, and manage

information to improve learning of state content standards in all subject areas and to acquire lifelong knowledge and skills in the 21st century.

Curriculum Integration *involves the infusion of technology as a tool to enhance the learning of state content standards in a content area or multidisciplinary setting.*

Technology integration enables students to learn in ways not previously possible.

Effective integration of technology is achieved when students are able to select technology tools to help them obtain information in a timely manner, analyze and synthesize the information, and present it professionally. The technology should become an integral part of how the classroom functions – as accessible as all other classroom tools.

Despite the existence of national standards as well as the above state proficiency goals, California has not created nor adopted any specific standards for these K-12 Technology Literacy and Curriculum Integration goals. Instead, the CDE allows district flexibility in defining and measuring grade level technology proficiency. I believe that integrating digital books in the classroom not only helps students meet the above goals of technology integration, but also helps to advance their literacy skills.

Chapter 3 Method

The focus of this research project was to explore the use of digital books in an elementary classroom and demonstrate how they can be used to increase student motivation to read. I wanted to examine (a) how electronic books are utilized in a reading program (b) to what extent are students motivated by electronic books (c) how a second grade teacher views the pedagogical role of electronic books in the reading curriculum. My research aimed to answer the question: What is the experience of one second grade classroom using electronic books to learn literacy skills?

A case study approach was useful for this type of research because this type of research can illustrate situations in which electronic books have successfully been implemented in actual classrooms. A case study involves studying an individual, group or event in depth for a defined period of time. A qualitative case design was used to conduct this study in a second grade classroom. This type of study allowed me to capture the experiences of the students as they used electronic books in their natural classroom setting.

Sample and Site

The research consisted of a case study, in which one second grade classroom was observed on several occasions during their reading period. The sample classroom consisted of 23 students, ages 7-8. The site was an elementary school in a suburban area. The teacher has been teaching ten years and has been integrating e-books into the reading program over the past five years. I chose Adam Treewater's class after having observed several schools that were said to be implementing technology into their reading programs. I was impressed not only with the extensive use of electronic books in this

particular class but also with the fluency and ease with which it was implemented.

Additionally, I noticed that there were elements of technology imbedded throughout the classroom.

Access and Permissions

I obtained written permission from the principal of the school as well as the second-grade teacher before proceeding with this case study. I conducted this research during school hours so as not to interfere with the normal routine of the teacher and students. While in the classroom I tried to stay out of the way as much as possible and sat in the back of the room when taking notes.

Data Gathering Strategies

The majority of the data was collected through classroom observations. Informal observations occurred over a series of three visits. Field notes were taken during each observation to capture students' actions and engagement levels throughout the reading period. The teacher of the classroom was interviewed during each classroom visit. The purpose of the observations and interviews was to collect as much information as possible about the use of electronic books during the reading period in one elementary classroom. Information from the manuals of Scholastic Reading Counts, the reading program that is implemented at the school, was also referenced.

Ethical Standards

This study conforms to all ethical standards of research as determined by the American Psychological Association. This project was reviewed by the Dominican University of California Institutional Review Board, approval number 8055.

Chapter 4 Analysis

Description of Site, Individuals, Data

Due to the extensive use of technology in his classroom and his experience with electronic books, Adam Treewater was an ideal candidate for my case study. After explaining my thesis topic to him, he agreed to an interview and said he would be willing to let me observe his classroom. Tucked away in a suburban neighborhood, the elementary school where he works supports eighteen teachers ranging from kindergarten to fifth grade. Adam Treewater's class is one of two second grade classrooms at the school. Adam has been teaching for ten years and has been at this school for the past seven years. There are a total of 23 students in his classroom, 13 boys and 10 girls. The students' ages range from seven to eight years old. Most of the students in the class are Caucasian and come from a middle class background.

Upon entering this second grade classroom, one is greeted with colorful pieces of artwork, writing samples and posters with words of encouragement strewn across the walls. Cubbies for each student's backpacks, books and work are situated right by the door. Student desks are arranged in small clusters in the middle of the room while larger tables that serve as workspaces line the outer perimeter of the room. The teacher's desk is tucked out of the way in the far corner. An extensive classroom library is tucked on one side of the room. Elements of technology are present throughout the classroom. An overhead projector hangs from the ceiling, a television is mounted in one corner, a document camera sits at the front of the room and five computers are situated along one wall.

Class Schedule

A typical day in the classroom is as follows:

8:45-10:45 Language Arts

10:45-11:00 Recess

11:00-11:30 Music or P.E.

11:30-12:15 Reading Centers

12:15-1:00 Lunch

1:00-2:00 Math

2:00-2:15 Recess

2:15-2:30 Read Aloud

2:30-3:00 Silent Reading

3:10 Dismissal

The reading centers, read aloud and silent reading periods are of particular interest for this study because each of these periods utilizes electronic books. Each day of the week the students participate in one of five reading centers where they stay for 30 to 45 minutes. The five reading centers consist of a computer station where electronic books are used, a guided reading lesson with the teacher, a parent-run station, a listening station in which students read along as a book is played on tape, and a thesaurus station where children look up a list of words. During the silent reading period five students are able to use the computers to view electronic books. The teacher's computer is available for taking electronic quizzes on e-books that students have already read. The remaining

students read books of their choice at their seats. The read aloud period often utilizes the document camera; the teacher places the book under the camera so that students may follow along with what the teacher is reading. This form of read aloud also allows students to view enlarged pictures or graphics that might accompany the text.

Scholastic Reading Counts

All of the schools in this district utilize Scholastic Reading Counts as part of their reading program. Scholastic Reading Counts (SRC) is a computer-based reading program that helps to encourage and monitor independent reading. The program features over 50,000 books (all measured by the Lexile Framework¹) and includes features such as quizzes, certificates to reward progress, recommended reading lists and a read-o-meter where students are able to rate books. Scholastic Reading Counts helps get students reading at the appropriate level and then monitors and assesses their reading progress. The Scholastic Reading Counts software program provides teachers with complete reports on reading performance.

In addition to Scholastic Reading Counts, the teacher utilizes various other programs to access electronic books: One More Story, Storyline Online and TumbleBooks. One More Story is an online library of children's classic and contemporary literature. Storyline Online features celebrities reading children's books aloud. As the celebrity begins to read, images corresponding to the story appear. The text

¹ A Lexile measure is a valuable piece of information about either an individual's reading ability or the difficulty of a text. According to the Lexile Framework for Reading, if you know how well a student can read and how hard a specific book is to comprehend, one can predict how well that student will likely understand the book. When a Lexile text measure matches a Lexile reader measure, students have a targeted reading experience. In targeted reading, students encounter some level of difficulty with the text, but not enough to get frustrated; the text is not too hard but not too easy.

of the story is displayed beneath the images. TumbleBooks features animated, talking picture books. TumbleBooks are created by adding animation, sound, music and narration to existing picture books. All of these programs are used in conjunction with Scholastic Reading Counts in that students read a book online and then take a corresponding quiz using the Scholastic Reading Counts program. It is possible that not every book found on these websites has a corresponding SRC quiz, but with over 30,000 quizzes, it is likely that most do. A list of the pre-approved stories from these websites is also posted on the wall directly behind the computers, making it is easy for students to access when they are at the computer station.

It is important to note that the electronic books in each of these programs can be read aloud to the students while they follow along with the highlighted words or they may read the text themselves, without the auditory assistance. Students in this class have the option of listening and following along with the highlighted text or simply reading the text themselves. However, the SRC quizzes are setup so that students have to read the questions and answers themselves, without auditory assistance.

Interview

I first interviewed Adam Treewater on October 25, 2009. We started by talking about the use of technology in general at his school, and he showed me many of the devices that he has at his disposal in the classroom (teacher and student computers, an overhead projector, and a document camera). Although he does not describe himself as a technology guru, he has more experience than most teachers I have observed and it is apparent that he values technology integration. We then discussed the topic of electronic books and he explained how he integrates them into the standard curriculum. I was

excited to find out that he uses them in a variety of ways (during silent reading, reading centers, read aloud and even for assessment). He explained the many benefits he has seen from the implementation of digital books and also went over some of the challenges.

“The benefits are everywhere. Motivation definitely increases with the use of the e-books. Students love the idea of passing a quiz and seeing winning messages, such as ‘You’re Awesome,’ on the computer screen. They are proud of their accomplishments and want to show their friends.” Treewater went on to explain how motivation among struggling readers is of particular importance. “Lower readers get lost with traditional reading programs. They don’t have as many books for these kids to read and the *I Can Read* Books are often too difficult. Technology supplements this area and offers books for those that can’t fully read yet.” With electronic books struggling students are able to gain exposure to books that they otherwise might not be able to read. The audio and guided text in an electronic books allows students to follow along and have the experience of reading a particular book that otherwise would be too difficult.

Additionally, Treewater notes that the technology station makes for easier class management. “Once the technology is up and running, I can have anywhere from 5-10 students working silently on their own. This allows me time to work with a small group on reading lessons and this motivates me! Just having the ability to work with small groups is well worth it.”

With these benefits also come a few challenges. “Sometimes we have technical issues with logging on or students will fight over the use of computers. I have to learn how to manage this ahead of time,” said Treewater. Given that there are only five computers in his room, Treewater can only use technology as one station or center; it can

never be a full-class lesson. He also spends much of his own time researching appropriate electronic books and websites in advance, so that his students do not waste time surfing the Internet. For many classrooms and schools there is also the issue of equipment and money. “Not everyone has the access that we do. We have a very generous foundation which makes this integration that much easier.”

According to Treewater, the benefits far out way any challenges or extra effort that he might have to put in. “I have seen improved reading skills as shown by their SRI scores.” During the last portion of our interview he described how he is also able to integrate technology into other curriculum areas, including Math, History and Science.

Observations

My first visit to the classroom took place on February 3, 2010. I arrived as students were coming back from their technology period and stayed to observe the daily reading centers. I positioned myself directly behind the computer station so that I was able to watch and hear the students who were using e-books. The teacher began by explaining each center and then called off the groups before sending students to their assigned stations. Two girls and three boys run to the computer station. These students needed no direction; they are well trained to find a computer, put on their headphones and start reading. I watched as one student begins to read “Sam the Lucky Monkey” while another chose a book on Chinese New Year, something they were learning about in class. Within just a few minutes all five students had chosen an e-book on one of the bookmarked websites and were reading away.

Upon completion of a story the students immediately knew to open the Scholastic Reading Counts program where they logged on (each student has their own login and

password written on an index card next to the computers) and searched for the SRC quiz that corresponded to their story. Students clicked through a series ten questions that focus on skills such as comprehension, sequencing and vocabulary and, upon completion, immediately received a score. Those that passed (seven or more correct) received personalized flashing messages from the computer congratulating them. Students were eager to show off their accomplishment, pointing to their screen so that classmates and the teacher would take notice. After completing the quiz, students would quickly move onto another book. This pattern of reading a book, then taking a quiz continued for the rest of the reading center period.

My second observational visit took place on February 25, 2010. I arrived at 2:15pm and observed the daily read aloud as well as the silent reading period. The read aloud on this day was typical of many classrooms I have visited. Students sat in their desks and listened to their teacher read the next chapter in their current book selection. The silent reading period, however, was different from any other I have observed. The teacher called a list of five students (the list rotates daily) who were able to read books on a computer, rather than sitting at their desks. Additionally, students took turns using the teacher's computer to complete SRC quizzes on books that they had already read. Judging from the expressions on their faces and the speed with which they raced to the computers, it was clear that the students who were allowed to work on the computers were excited. The students at the computers immediately got situated and began reading a variety of books, everything from an Abraham Lincoln biography to a book on penguins. One student chose a musical book in which the lyrics to the song were highlighted as the words were sung. She tapped her feet and silently mouthed the words as the song played,

seemingly enjoying herself. Another student chose a story from TumbleBooks that mimicked a chapter book with very few pictures and mostly text. Unlike most of the other e-books, this selection did not highlight the individual words as it was read. Instead, a section of four to eight words were highlighted, ensuring that the reader was able to keep up with the auditory version.

During this observation I also witnessed a student pass one of the SRC quizzes for the very first time. It was clear that this was a big deal to not only her, but to other students as well. When the score and congratulatory words appeared on screen, a huge smile spread across her face and she quickly raised her hand to call the teacher over so that he could review her accomplishment. Those classmates who happened to see her passing score pop up were excited and encouraging, offering her words of praise.

Chapter 5 Discussion

Summary of Major Findings or Results

In conclusion, it is clear that electronic books motivate students. Throughout my observations it was apparent that the students viewed working on the computers as a privilege and were always excited when presented with the opportunity to read electronic books. The students indicated that reading on the computer was one of their most favored activities and their actions revealed as much. The simple words of praise that the computer offered upon the passing of a quiz had an impact on students; they were excited and motivated to receive the messages and show them off to their classmates.

Not only did the element of technology motivate them to read more, it also allowed them to target their reading to material that was relevant to what the class was currently studying. With the click of a button students could find books that went along with Chinese New Year celebrations, endangered animals or any other subjects that they were learning about. Furthermore, reading online allowed students to quickly move from one book to the next, eliminating the time that is typically wasted when students are browsing for books.

My interview with Adam Treewater also confirmed that electronic books are beneficial for numerous reasons, one being increased motivation. His students all want to be in the group that gets to use the computers and they all want to find that “cool” new book that they can show to their classmates. He consistently sees that students are motivated to take the accompanying quizzes and are excited when they pass and receive a personalized congratulatory message. Adam Treewater has been implementing electronic books into his reading programs for the past few years and, as a result, has seen higher

reading scores. This benefit alone speaks for the value that electronic books can have amongst elementary readers.

Comparison of Findings/Results with Existing Studies

The findings from my case study were not surprising. Existing studies show that students are motivated by technology. Twenty-first century students are born into a technology-saturated world and embrace computers in ways previous generations may have a hard time understanding. With regards to electronic books, numerous studies have revealed that the implementation of this form of technology positively influences reading skills. Benefits such as increased comprehension and fluency have been linked to the use of electronic books. Adam Treewater's second grade class was no exception. Reading scores and motivation have both improved with the implementation of electronic books.

In my research I did not find any studies that specifically focused on the motivational effects of using electronic books in an elementary classroom. Given that electronic books are still a relatively new phenomenon, this is not surprising. Couple this with the fact that student motivational levels are difficult to measure, and it is not surprising that I did not find any studies with which I could compare my results.

Limitations of the Study

This study is limited in its sample size. The research was done solely on one classroom, containing a sample size of 23 students, primarily Caucasian from a middle class background. This sample was effective for conducting a case study but limits the generalizations that can be made. Additional limitations include the lack of direct interaction with the students, the focus on only a handful of electronic book programs, and a limited amount of time spent in the classroom. Finally, there might be elements of

personal bias in this case study. Given that there is not a measure or test for motivation, the results are based on observations. All of the observations were written from my own experiences and thus represent only one point of view.

Implications for Future Research

Given that electronic books are a fairly new phenomenon, further research evaluating their motivational benefits and effectiveness in literacy development is needed. Similar case studies with students of different backgrounds and age ranges would be beneficial to this research. Additionally, it would be advisable to conduct further experimental studies in which two groups are compared: one that reads an electronic book from the programs previously mentioned and one that reads standard text. Both groups would read the same story and take a quiz to test for reading skills such as comprehension, sequencing and vocabulary. The results from this type of experiment would allow different conclusions to be drawn.

Overall Significance of the Study

Today's elementary students are very different than those of past decades. They are introduced to technology at a very young age and are surrounded by it both in and out of the home. The vast majority of today's youth are excited and motivated by all facets of the digital age, whether it is cell phones, computers or video games. Educators have a responsibility to effectively integrate technology into the current curriculum to prepare students for the real world and to keep them motivated.

Electronic books are one of the key elements to capturing the attention of today's students, yet very few teachers are utilizing them in the classroom. Electronic books not only excite students, but also motivate them to read, help meet various student needs and

target many of Gardner's multiple intelligences. Electronic books can provide educators and students new options, scaffolds, and resources for reading materials at all levels and for all purposes. Educators need to recognize the benefits that electronic books offer and find ways to incorporate them into their reading curriculum.

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