2005

Why are those computers sitting over there gathering dust

Bradford Ralph Austin

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WHY ARE THOSE COMPUTERS SITTING OVER THERE GATHERING DUST

A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Education:
Instructional Technology

by
Bradford Ralph Austin
June 2005
WHY ARE THOSE COMPUTERS SITTING OVER THERE GATHERING DUST

A Project
Presented to the Faculty of California State University, San Bernardino

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Approved by:

[Signatures and dates of approval]

Brian Newberry, Ph.D., First Reader

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ABSTRACT

E-books were created for several purposes. Primarily, E-books were created to help students learn to read. Next, E-books were created to help teachers justify to their principals the resources spend to put computers in their classrooms. Finally, E-books were created to give students access to something that will help them read seven days a week twenty-four hours a day. E-books are electronic books that can be accessed on CDs or a website and kindergarteners can use them to learn how to read. By going to a website, teachers and/or parents can click on the link that sends them to a series of web pages that are similar to a book that the students read in their kindergarten class or at home. The E-books can be used in the classroom as a technology center or at home as a practice/homework for parents and their students. The E-books help teachers to use the resources that the school supplies while teaching the students to get the foundation they need to meet the state standards in the future.
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DEDICATION

This thesis is dedicated to Dianne Austin who without her support could not have been completed. She was and is my inspiration, support and motivator at all times.
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CHAPTER ONE

BACKGROUND

Introduction

Reagan elementary school (a pseudonym) is located in Ontario, California and is part of the Ontario/Montclair School District. Reagan is a medium size elementary school when compared to other elementary schools within the same district. Reagan, a traditional school, has grades kindergarten through sixth grade. There are four kindergarten classes, two AM from 8:00 to 11:30 and two PM from 11:30 to 3:00, Mrs. Lauder (a pseudonym) taught one of the PM classes and Miss Adams (a pseudonym) one of the AM classes. The student body consists primarily of Hispanic students who are English Language Learners (ELL) who speak very little English. Early Language Learners present some unique challenges that require more of Mrs. Lauder’s attention to bring them up to a beginner reading level. This is one reason that Mrs. Lauder gave for not using computers in her classroom. She is computer literate but stated that she was stretched to thin and felt that the students needed more computer help than she was able to provide.
One morning the school's principal came in and asked Miss. Adams; "why are the computers on the table are over there just gathering dust, aren't the students to be using them?" The principal asked this same question of Mrs. Lauder just the day before. There appeared to be problems in the kindergarten classes. Neither teacher had incorporated any technology into their lesson plans. After discussing the principal's comment with the teachers, it was found that Miss Adams did not feel that she had the training or skills required to incorporate technology into her lessons let alone create material that her students could use. When asked if they would like to have some help incorporating technology into their lesson plans they responded with an emphatic "yes." One of the problems Miss Adams brought up was that she did not know what subject would be the best to use with the computers. She explained that she knew her principal was right and the students should be using the computers, however, other than to play games she had no idea what to do.

To help solve the teachers' problem of incorporating and using technology in their classrooms the E-books were developed. After watching how the teachers taught their classes and reading California State Standards for Kindergarteners it was determined it would be best to
start with Reading. The California State Standards have three elements in reading that have to be taught at the Kindergarten level. The following are the three areas taken from the California State Board of Education website:

Kindergarten:
English-language Arts Content Standards Reading

1.0 Word Analysis, Fluency, and Systematic Vocabulary Development
Students know about letters, words, and sounds. They apply this knowledge to read simple sentences.

2.0 Reading Comprehension
Students identify the basic facts and ideas in what they have read, heard, or viewed. They use comprehension strategies (e.g., generating and responding to questions, comparing new information to what is already known). The selections in Recommended Readings in Literature, Kindergarten Through Grade Eight (California Department of Education, 1996) illustrate the quality and complexity of the materials to be read by students.

3.0 Literary Response and Analysis
Students listen and respond to stories based on well-known characters, themes, plots, and settings. The selections in Recommended Readings in Literature, Kindergarten Through Grade Eight illustrate the quality and complexity of the materials to be read by students. (California State Standards http://www.cde.ca.gov/be/st/ss/engkindergarten.asp)

Statement of the Problem
This project addresses the problem of what to do with the unused computers in many classrooms. Throughout the past five years that this author has been substitute
teaching in a number of different districts, schools and grades levels he has seen many computers sitting idle. In a vast majority of classrooms, the computers are just gathering dust and not being used by the students whom they were purchased to help. Usually teachers have a computer on their desk that they use for attendance, grade keeping, communicating with colleagues and lesson planning. With the push of No Child Left Behind (NCLB) legislation to increase test scores, improve literacy and increase the use of technology in the classroom many schools have been allocated monies specifically for providing computers for the students to use in the classroom. Consequently, many classrooms can have a bank of two, three, or even more computers that are seldom used by students.

The problem, which by no means is exclusive to any one-grade level, is how to incorporate technology into the classroom to improve literacy and allow the students to start using these computers. During the last 10 weeks of his student teaching the author of this thesis was assigned to a P. M. kindergarten classroom that had a bank of five computers that were never being used. After questioning the teachers, it was discovered that although they were to be using the computers they stated they did
not have the time or technical expertise, they felt, was necessary to incorporate technology into their lesson plans.

Purpose of the Project

The purpose of the project was to create electronic books (E-books) for kindergartens to read during their center time. The E-books are intended for kindergarten teachers to use to help their students learn to read while utilizing the technology resources in their classroom. Most classrooms have the technology but many teachers lack the resources or skills necessary to adapt their lesson plans to include technology. Yes, there are many commercial software programs on the market. However, some of the problems with the commercial programs are that they are very generic and costly. Since E-books were created using the material that teachers were currently using in their classrooms they lack the generic sense that one gets from a commercially purchase program. The connection that the E-books have to the classroom curriculum provides an additional benefit to the students by reinforcing what is being taught. In addition, the E-books are teacher created so the cost is minimal. Where commercial software can cost
upwards of hundreds of dollars per program, teacher created E-books costs are very minimal, the price of a CD.

Significance of the Project

This project has a strong significance for the teacher who will be using the E-books, the students who will benefit from reading the E-books, the parents of the students who will see a significant improvement in their students reading ability and the administration of the schools who will see their school's technology being used to benefit students. Furthermore, because E-books are teacher created they can be copied and distributed to each student without having to worry about copyright laws, thus affording the students the capability of practicing their reading at home with their parents' supervision.

Another significant benefit for the teachers who use the E-books is that there use will help relieve the pressure of meeting and fulfilling the state standards in reading comprehension while incorporating the use of technology into their lesson plans. By the teachers using this technology in their classrooms, it will give administrations the satisfaction of knowing that the money spent on technology in the classroom is not going to waste.
Finally, E-books are significant because teachers can customize them to fit the current thematic unit they are teaching and to fit individual classroom needs. Once the E-books are created they can be used repeatedly without being damaged like paper books.

Limitations of the Project

During the development of the project, a number of limitations were noted. These limitations are the following:

1. Being able to develop E-books for students other than kindergarteners due to student-teaching requirements and time constraints of completing the project.

2. The inability of some students to be able to access the E-books at home due to lack of computer resources.

3. The success and usefulness of the program is dependant upon the computer literacy of the teachers who would be using the program.

4. Application runs slow on the Internet due to aforementioned memory constraints.

5. Cannot be used by ELL students without continuous teacher monitoring.
6. The computers that were available in the target Kindergarten classrooms have limited capacity, which limits the size of resources that can be used and caused applications to run slowly.

Definition of Terms

The following terms are defined as they apply to the project:

**E-books** - are teacher created electronic books using software such as Microsoft PowerPoint or Flipbook then saved on CD's or uploaded onto the Internet. These E-books should not be confused with commercially sold E-books.

**ELL** - are English Language Learners

**Centers** - Are self-contained activities that allow students to practice important skills that are taught during class. Some common centers include math, reading, writing and art.

**NCLB** or No Child Left Behind is education law passed in 2002 it ensures accountability and flexibility as well as increased federal support for education.
CHAPTER TWO

REVIEW OF THE LITERATURE

Introduction

Kindergarten is the stepping-stone for establishing a solid foundation of reading skills that contributes to lifelong learning. Reading-curriculum and instruction are designed to develop a student’s knowledge, skills, self-esteem, sense of competence and positive feelings toward learning. Different levels of reading ability, development and learning styles are expected and accepted although curriculum is adjusted to meet and close the gap between these differences (Orr, A., Wolock, E., & Buckleitner, W. n. d.).

The substitute teacher scratched onto the blackboard four letters in hard white chalk: a “t,” an “h,” an “i,” and an “s.” She asked if we could read what she had written. Of course we couldn’t! We could “read” our little books with big colorful pictures and three- and four-letter words printed in giant-sized type. But we couldn’t read a bunch of letters, not without helpful pictorial hints and friendly reminders from our teacher that we had just seen the same word on the previous page. As I struggled with those letters, incredibly, they became a word. Somewhere in my young mind, the “th” sound replaced the “t” and the “h,” and slid together with the “is.” The word was “this!” I still remember the moment of discovery: I can read! This was different than memorizing a few common words, and I knew it. I knew that from now on, when I looked at a book, I could start with the words, instead of the pictures. I can read! By
History of Reading

One of the problems encountered when discussing the topic of reading is what does it mean when we say a person can read? Who can say when civilized people began to read? Cave dwellers drew pictures on cave walls depicting the stories of their lives. Fire was discovered and the cave dweller could see their drawings consequently we could say that "civilized" people began reading. At first sight then we could say that reading means that someone can recognize marks and translate them into spoken words. The next generation of writing and reading could have been the pottery that the Chinese made more than 8000 years ago. The oldest known body of pottery dates from the Jomon period (from about 10,500 to 400 BC) in Japan; and even the earliest Jomon ceramics exhibit a unique sophistication of technique and design (Woodhouse, N. D.).

The advent of a writing system, however, seems to coincide with the evolution of societies to more permanent villages when it became necessary to count one's property or to transfer property to another individual. The first evidence for this was the "counting tokens" that emerge about 9,000 years ago. The tokens began to be symbols that
could be impressed or inscribed in clay to represent a record of land and a written language was beginning to develop. One of the earliest examples was found in the excavations of Uruk in Mesopotamia. The pictures began as representing what they were, pictographs and eventually, certain pictures represented an idea or concept, ideographs and finally to represent sounds.

=head foot sun "day" hand

Eventually, the pictographs were stylized, rotated and impressed in clay with a wedge shaped stylus to become the script known as Cuneiform. For the next step toward the development of an alphabet, we must go to Egypt where picture writing had developed. The Egyptian picture writing or hieroglyphs were one of the early forms of writing that have been deciphered and read to unlock the mysteries they held (Ryan, N.D.).

Scholars have said that the alphabet ranks alongside fire and the wheel as a basic tool of civilization, making giant leaps beyond picture writing by expanding the capability to express abstract ideas such as hope and freedom. The alphabet was invented for one primary purpose: to encode the sounds of language. With knowledge of an alphabetic code, a person could be taught to read
virtually any written material. The purposes of reading
than became to gain information, invoke the reader's
feelings and understanding what the author is trying to
convey.

Two hundred years ago, you were fortunate if you
could read and even luckier if you had access to written
material. Newspapers were scarce and books were
leather-bound luxuries owned by the wealthy. In 1910, the
US was at the height of the industrial age and millions of
children lacked reading skills. Along came Edward
Thorndike, a professor who was regarded as an expert on
efficient lesson design. Thorndike's "Laws of Learning"
helped create a system of reading instruction where
children were broken into ability groups and given small
doses of focused reading instruction. This new system of
reading prompted the publishing industry to begin pouring
out reading primers (called basal), "disposable" workbooks
and end-of-the unit tests. Meanwhile, philosophers such as
Jean Piaget (1928-1960s) and John Dewey (1940s) started
raising questions about the meaning of it all. (Orr, A.,
Wolock, E., Buckleitner, W. N. D.)

After 20 years of fine-tuning, in the 1950's Dick and
Jane books taught eight out of 10 American children to
read. Then Rudolf Flesch's Why Johnny Can't Read (1955)
was published and an abundance of high-quality children’s books with authors like Dr. Seuss became available. Each of these events helped to set the stage for 30 years of bickering over phonics vs. whole language between educators. Phonological awareness and its role in beginning reading has the potential to confound supporters at both extremes of the whole language vs. phonics.

Whole language reading instruction (also known as “look-say” or “sight” reading) is the most widely used method of teaching reading in the U.S. and many other countries (http://www.halcyon.org/wholelan.html). Its development dates back to early in this century and its continued use is based on two factors. First, researchers learned that experienced readers grasp the meaning of entire words at a time. Further, when children talk they use complete words without conscious attention to the individual sounds that make up those words. Second, whole language is said to be “literature-based” because students are expected to learn these words by “reading” them as teachers read stories aloud. After they have “read” the words, enough times they will recognize them and be able to read themselves.

This sounds much more compassionate than the drill and repetition necessary to intensive phonics instruction.
Educators are always looking for valid and reliable predictors of educational achievement. One reason why educators are so interested in phonemic awareness is that research indicates that it is the best predictor of the ease of early reading acquisition.

It is true that readers recognize familiar words as a whole but how do we read unfamiliar words? We must deconstruct written words into their component sounds before we reconstruct the way the complete word sounds! Moreover, although children often are not aware of the individual sounds of words, they spent several years imitating and practicing sounds around them before they were able to speak whole words (http://www.halcyon.org/wholelan.html). Regardless of instructional technique, phonological awareness is an essential element for reading progress. It has been found that children with high phonemic awareness outperformed those with low phonemic awareness on all literacy measures, whether they were taught using a whole language approach or traditional basal instruction. (Halcyon House http://www.halcyon.org/wholelan.html)

In the mid 1970’s, the last of the Dick and Jane books were published and federal funds supporting university research to develop new reading programs was
approved. Teachers tired of the bickering over phonics vs. whole language started predominantly teaching students to read using whole language. Unfortunately, despite the changes in reading instruction, test scores showed no dramatic gains.

The falling test scores that were recorded in the 1980's prompted the Reagan Administration's "A Nation at Risk" marking revolutionary changes in education. One of the most contested changes was that teachers were held more accountable for their student’s progress. Harvard’s Jean Chall, leader of the phonics movement started gaining in popularity. Then in 1986, the first "Hooked on Phonics" advertisements began, targeting parents who were worried about their children ability to read. Later in the decade, Apple Computer Company with its Apple II smoothed the way for many reading software programs like "Reading Blaster" for phonics, "Word Munchies" for spelling and "Magic Slate" for writing. (Orr, A., Wolock, E., & Buckleitner, W. n. d.)

As we moved into the 1990’s technology was being recognized as a useful tool in helping children learn to read. Computers and software began to focus on reading instruction while teachers started matching the technique with the student. Educators began to understand that for
some children, whole language was best while others needed structured phonics-based instruction. What is needed is a balanced approach to reading instruction an approach that combines the language and literature-rich activities associated with whole language activities aimed at enhancing meaning, understanding and the love of language with explicit teaching of skills as needed to develop fluency associated with proficient readers.

How Students Learn

Gradually educators have learned that reading does not develop as an isolated skill and that all developmental processes occur at different rates for all students. The actions of reading, writing, spelling and handwriting each play a role in a student’s growth toward becoming literate. In today’s world of e-mail, faxes and the Internet it is not enough that our students learn how to read they must be able to communicate clearly in writing as well. Learning to read and write are developmental processes. Just as a child has to learn to crawl before they can walk, a readiness factor must be in place before students learn to read. Like learning to walk and talk, reading and writing develop in stages marked by certain behaviors. (Ryan, n.d.)
Some of the strategies used by kindergarten teachers to teach literacy are whole group participation in reading big books, partner reading, introduction to various authors and illustrators, community reading, listening to recordings and viewing high quality videos and CD's of children's literature and students sharing of literature with "book buddies". With more emphasis on improving reading scores without a doubt, learning to read and write are the most important academic accomplishments a child can make (Orr, A., Wolock, E., & Buckleitner, W., n.d.).

No Child Left Behind

NCLB legislation was enacted because the President and Congress saw a need for reading proficiently scores of students to increase. Furthermore, it was recognized that the ability to read begin at the most basic level. The following is an excerpt from the introduction and overview of the NCLB legislation on the U. S. Department of Education website. NCLB:

Children who enter school with language skills and pre-reading skills (e.g., understanding that print reads from left to right and top to bottom) are more likely to learn to read well in the early grades and succeed in later years. In fact, research shows that most reading problems faced by adolescents and adults are the result of problems that could have been prevented through good instruction in their early childhood years (Snow, Burns and Griffin 1998).
It is never too early to start building language skills by talking with and reading to children. No Child Left Behind targets resources for early childhood education so that all youngsters get the right start.

The E-book program supports NCLB by helping kindergarten students learn to read at an early age, thereby, helping them to become more proficient and fluent readers in the future. These increases in the students reading ability directly correlates to schools increasing their test scores. The graph (figure 1) from the U.S. Department of Education website shows that the reading proficiency of fourth graders from 1992 – 2000 is approximately 30%. As the graph depicts our students' reading proficiency is very low and shows no improve over a period of eight years.

On January 8, 2002, President Bush signed into law the No Child Left Behind Act of 2001. The legislation, which reauthorizes the Elementary and Secondary Education Act of 1965 (ESEA), provides increased flexibility and local control to states and school districts, emphasizes strong accountability, offers expanded options for parents, and supports teaching methods. The NCLB government website says that;

"The reauthorized ESEA establishes the Enhancing Education Through Technology (Ed Tech) Program, which consolidates the current Technology
Literacy Challenge Fund (TLCF) Program and the Technology Innovative Challenge Grant Program into a single State formula grant program (ESEA Title II, Part D, Subpart 1). The primary goal of the Ed Tech program is to improve student academic achievement through the use of technology in schools. It is also designed to assist every student in crossing the digital divide by ensuring that every student is technologically literate by the end of eighth grade, and to encourage the effective integration of technology with teacher training and curriculum development to establish successful research-based instructional methods.

Figure 1. Percent of Scores Reading Proficiency

No Child Left Behind legislation was ratified due to low reading scores that remained virtually unchanged for over eight years (U.S. Department of Education, 2004). Even though reading scores remained constant for those eight years (as you can see on figure 2) spending by the government had doubled. One of the areas that the government suggests might help to improve reading scores is innovative teaching methods (McMillan, 2001 p. 38).

![Reading Scores and Funding](http://www.ed.gov/nclb/landing.jhtml?src=pb)

Figure 2. Reading Scores and Funding

The following quote found on the No Child Left Behind website (http://www.ed.gov/nclb/landing.jhtml?src=pb) is
On January 8, 2002, when the No Child Left Behind Act became the law of the land, we began a new era of education in our nation’s history. Democrats and Republicans in Congress joined together with President Bush in an historic agreement to improve the educational opportunities for every American child. Accountability, local control and flexibility, new options for parents, and record funding for what works are now the cornerstones of our education system. If your child isn’t learning, you’ll know why. If your school isn’t performing, you’ll have new options and the school will receive additional help. Our commitment to you, and to all Americans, is to see every child in America--regardless of ethnicity, income, or background--achieve high standards.

The No Child Left Behind (NCLB) legislation is considered by some to be one of the most significant items of educational legislation in recent times because the President and Congress have deemed it important that our students (all of our students) obtain an education that achieve certain standards. Whether or not the No Child Left Behind (NCLB) legislation is flawed, it is the law. That fact that it exist means it is the law and we have to by legislation follow the law and make learning a more meaningful event in a child’s life. If ever there was a logical use of technology, it is for helping children learn how to read and write. Good software can break down
the process of reading and writing into small, palatable activities while providing students with the essential practice they need. Using technology to teach students how to read may help motivate the beginner, helping to move them down the road to becoming literate.

This project of developing E-books for kindergarteners to learn to read fulfills that law. By utilizing the E-books, teachers also help administrators to justify the cost of those computers that are sitting there gathering dust.

The following is a timeline of communication tools and technological improvements over the years. This is important because technology does not stand still and computers are the next generation in the long line of communication tools. Teachers everywhere, in order to get the very best in the way of an education for students, must use these tools. However, not until equipment in education becomes as foolproof, teacher proof and childproof as common household appliances will teachers use it everywhere (Cuban, 1986, p. 53).

It is appropriate to consider some of the advancements there have been in technology. Prior to the nineteenth century there was not a lot of technological
advancement, whereas, after the 1800 the advancement has been rapid and progressive (Timelines of History, 2004).

- **1492** Lead pencils were first used.
- **1765** Eberhard put erasers on pencils.
- **1827** Joseph Dixon began manufacturing lead pencils
- **1841** Samuel Slocum patented the stapler.
- **1880** The first ballpoint pen was patented
- **1930** Feb 26, Manhattan, NYC, installed the first red and green traffic lights.
- **1949** Jan 10, RCA introduced the 45 RPM record.
- **1958** Mar 27, CBS Labs announced new stereophonic records.
- **1961** Jun 1, FM multiplex stereo broadcasting was first heard.
- **1964** Oct 14, Philips began experimenting with color TV.
- **1984** Motorola introduced a brick-sized cell phone for $4,000.

**Summary**

In summary, the author has illustrated that the government believes that our children's education is
important. One of the primary goals of the No Child Left Behind legislation is to improve students' reading proficiently. The E-books were created to help teachers to fulfill the government requirement for students to increase their read proficiency and master the California state standards. Technology is constantly changing and teachers along with their students do not want to be passed by as technology moves ahead.
CHAPTER THREE

PROJECT DESIGN PROCESSES

Introduction

Marty Donsky technology marketing manager for Price Waterhouse Coopers LLP in Tampa stated, "I believe there is a mindset in schools that does not embrace information technology as an educational tool" (Meinhardt, 2002). A recent report by the Progressive Policy Institute in Washington, D.C. noted that use of computers and technology in kindergarten-12th grade classrooms is important for promoting a higher level of education. Metropolitan areas with greater computer use in schools are ones where political leaders may "more clearly recognize that the IT revolution is an important key to their future prosperity and that it is essential to properly train the next generation of workers." Donsky went on to say that, "Technology firms are interested in education and are attracted by tech-savvy school systems." Graduates from these schools will not only have the technology education necessary to meet the needs of the future job market but students in all grade levels will possibly be taught using this technology to learn better in innovative ways. Tech-savvy kindergarten teachers can
help their students learn to read more effectively in many creative ways.

The most progressive teachers are those that are using innovative methods to reach today’s children by making school tasks more meaningful by using technology in their classrooms. One creative way that these non-traditional kindergarten teachers can use to integrate technology into the traditional classrooms is by using E-books to help students to learn to read (Meinhardt, 2002, http://www.bizjournals.com/tampabay/stories/2002/01/07/focus4.html).

Mrs. Lauder is just one of these tech-savvy kindergarten teachers who wants to use technology in her classroom. However, some of the reasons she gave for not using technology could be alleviated by her using E-Books in her classroom. E-books are significant tools because they fulfill many of Mrs. Lauder’s needs. Some of those needs include: providing the students with a means to learn how to use technology, giving the students a tool in which to practice what they learned in the classroom, at home, and in centers, to fulfill state standards in reading and technology, and to show administration that the money they spent on technology was not wasted.
Analysis

A short Survey (see appendix B) was created in order to gain some insight and objectivity on the need for technology in the classroom, the E-books that were created and there usefulness to the teachers. When the teachers completed and returned the surveys a quantitative analysis of the information was conducted. Figures 3 to 6 display a small sample of the results of survey questions that teachers were asked to consider. An analysis of the problem illustrated that many teachers were experiencing problems with integrating and using technology in their classroom. This is especially true at the kindergarten level where many computers are just sitting gathering dust. When the teachers were asked why they did not incorporate technology into their lesson plans or use the computers some teachers became indignant stating "you sound like the principal." Other relevant comments dealt with not having grade level appropriate software for the students to use and the stress that teachers felt. The kindergarten teachers commented that the biggest hurdle they faced was not having the enough time to create something that would engage the kindergarteners without frustrating them.
The information that was gained from the survey comments helped with the creation of the E-books. To help ensure that kindergarteners would not become frustrated when using E-book they were taken from reproducible books that their teachers used on a daily basis in the classroom. Some of the advantages E-books have over traditional paper books are:

1. Students can use them alone while they are in centers
2. E-books are used on computers which students find fascinating
3. Teachers are free to focus on independent students' needs.
4. E-books can be used repeatedly without additional teacher prep-time or redundant work.
5. Students' progress can be tracked with certificates of completion
6. Parents can use this resource
7. Teachers will be using technology in the classroom

After evaluating the E-Books, the teachers commented that they would like to have access to this resource for their classes. The teachers were impressed with the ease in which the students could be taught to use them and the
independence that it gave the teachers to work on other tasks such as prepping the next day’s lesson plans. Many of the teachers asked for copies of the E-books so they could start their students reading.

Organizational and Navigational Structure

This program’s organizational structure uses a linear design. The reason for using a linear design is that each sentence builds on the previous sentence that the student has read. The rationale behind limiting the student’s options on how they can navigate through the E-book to two selections “GO” and “HELP” was twofold. First, it helps to ensure that the students will proceed through the book on a predetermined path, to eliminate the possibility of the student getting off task. In addition, it helps to prevent overwhelming kindergarten students with too many selections. If students become overwhelmed with too many selections to make it could limit their chances for successfully navigating through the program. This simplistic way of organizing the site with the simple navigation is what McCracken and Wolfe call “effective navigation” (McCracken, 2004).

The questions provided after each sentence help the students to track their understanding of the material they
are reading. Using the same sequencing, reading a sentence and the answering the question, provides the student with a familiar pattern that they are comfortable with using. This helps to make tracking the students reading progress a simple task of seeing that the student finishes reading his/her E-book and then receives their certificate-of-completion.

The simplistic designed of the E-book may help relieve potential feelings of being frustration while providing kindergarten students with practice reading. An additional benefit is that the program provides the reader with immediate feedback that can help to motivate young reads to continue reading. The E-book’s text is presented on a single screen with as much white space as possible to reduce distraction, keeping the design simple and uncluttered. This pattern of simple screen text and uncluttered space is consistently applied throughout the E-book so readers can begin to recognize and even anticipate this pattern.

In order to maintain the young readers’ attention, primary colors were used with the background colors reaming constant to offer a contrast between screen elements and the background. The website was modified to change the colors of the “GO” and “HELP” buttons. Changing
the color of these navigational buttons may help relieve
any confusion students may have had in selecting a red
button to continue on to the next screen. The large size
of the navigation buttons was intentional so young
students with poor hand-eye coordination can be able to
point and click using the mouse to make navigation
comfortable for all students. The informal font was
selected to soften the text and to provide a more playful
typeset that is common in young children’s written
materials. Moreover, by using this playful font younger
students can identify more closely with the material.
Aligning the screen elements with the center of the screen
eliminates the need for students to search for material.

Finally, after the student finishes reading the
E-book there is a certificate-of-completion they can print
out and give to their teacher to sign. These certificates
can be use by the teacher to monitor the students’
progress or as recognition for homework and in-class
assignment that have been completed.

The E-books were developed using PowerPoint and put
on a CD for Mrs. Lauder to use in her classroom as an
educational center that her students could cycle through
during their centers time. The CD was given to Mrs. Lauder
and installed onto her desktop so that the students could
access them after a minimal amount of instruction. A web page has been designed with E-books that are similar to but not the same as the E-books that were developed for Mrs. Lauder. These E-books will be individual pages instead of the MS PowerPoint presentations because PowerPoint is too slow to access a website.

Since there is, a trend in schools toward using technology in the classroom the E-books will be published on the Internet, using this author’s website (http://mraustin.myteacher.info), for access by all teachers. In this way, other teachers can use the website as a resource for their students. This technology in the classroom has really been a new concept and revolutionary in vision.

There was a task oriented design scheme used in the creation of the E-books, which involves three main tasks for the reader to accomplish. The reader first reads a simple sentence. Next, in order to continue with the book they need to click on a “GO” button. This allows the student to check their understanding of what they have read by answering a very fundamental question. Finally, if they are unable to read or understand the sentence they can click on a “HELP” button, which takes them to the help screen.
This screen provides them with two different types of help. First, they see a picture depicting the sentence’s subject and secondly an audio button can be selected that allows the student to hear the sentence read to them. The help screen provides the student with a picture of the subject and the object for each sentence so that the student can try to recall the information from previous readings of the books during class. If the student selects the wrong answer on the test screen, the program returns them to the same help screen. This task-oriented pattern of the user reading the sentences and then making a selection repeats for twelve sentences in each book. The only change being the object of each of the twelve sentences while the sentence’s subject remains constant. At this point, the student can continue to the test or if they need additional help, they can ask their teacher, or, if at home ask their parent or guardian. At the end of the E-book, there is a certificate-of-completion that can be printed providing the student with a sense of accomplishment and allowing the teacher/parent to track the students’ progress.
Evaluation

Purpose of Alpha Test

The purpose of this field test (alpha test) is to ask the targeted audience to evaluate the program to see that it meets their needs. The targeted audience in this case is twofold; first, it is the kindergarten teachers who will need to utilize the tool in order for the students to obtain a foundation in their reading program and secondly, it is the kindergarten students, who will be using the program on a weekly or daily basis. The plan is to ask kindergarten teachers, using a survey form, (see appendix B) what concerns they have regarding their students' use of technology in their classrooms.

Also, to help them make use of their computers while they are in learning centers. Learning centers are teacher designed and created activities that center around a particular skill students are being taught. The students then rotate through the different learning centers to improve their skills in reading, writing and social interactions.

Process of Alpha Test

To help select the right participants for completing the survey, the question was asked about how comfortable the teachers were with their students using selected
computers in their classroom during centers. The author also wanted to know if the teachers would be willing to participate in the testing process. Once the selection process was completed and the participants chosen the author contacted them at school to get their agreement for using the proposed survey form. The survey forms were distributed and teachers asked to fill them out as soon as possible. Given a proper amount of time, the survey forms were collected.

Results of Alpha Test

The feedback received from the surveys was very positive. The comments that were received indicated that the teachers liked the concept of E-books and would use it during their centers time with their students. Figure 3

![CLASSROOM TECHNOLOGY READY](image)

Figure 3. Percent of Classrooms Technology Ready
shows that 78% of the classrooms surveyed were technology ready. Some of the teachers without computers would like to have them and would be willing to use the E-books.

The teachers with classrooms that were technology ready said they would use the E-books. Another interesting result of the survey was that of the 78% of the classrooms that were technology not all of them are using their computers. As can be seen in figure 4 only 75% of the teachers surveyed are using their computers. Not all of the teachers surveyed believe that using computers is beneficial. Some teachers believe that the technology is a waste of money and would rather not have to learn to use the computers. Most of these teachers are the more traditional teachers. The teachers that do want to use

![WANT/DO YOU USE TECHNOLOGY IN THE CLASSROOM](image)

Figure 4. Percent of Teachers Technology Ready
computers are the more contemporary teachers especially the ones just coming out of their credentialing programs.

Figure 5 shows the result of these statistics for teachers that do not feel that technology is beneficial. Another interesting fact that was revealed by the survey, see figure 6, was that only 69% of the teachers surveyed would use the software. However, considering that only 75% of the teachers think that technology is beneficial 69% that would use the software is a high percentage.

Figure 5. Percent of Teachers Believing Technology is Beneficial
Purpose of Beta Test

There was a second survey form (see appendix C) distributed for testing, beta test, the reaction to the final product. This test was to find out how the teachers liked the E-books and if the thought that the E-books would be beneficial to their lesson plans. There was room for suggestions by teachers for improvement to the design and use of the E-books.

Process of Beta Test

The survey forms were distributed to the teachers that were used to evaluate the E-books. Not all of the teachers surveyed were kindergarten teachers but all participants could still make suggestions for improvements. The author wanted to know if the teachers...
liked the E-books and thought they would be useful in classroom instruction.

Results of Beta Test

The teachers liked the E-books and did not find much wrong with how the program ran. However, the teachers did provide some preferences for changes in the color and layout schemes. Other suggestions that were made were of a personal nature such as preferring blue to red. Some of the teachers suggested using another word like "GO" instead of "CONT" for a button; this is the same suggestion received from classmates during an evening class. Another suggestion received during the same evening class that correlates with the teachers' evaluation was that the red color for the "CONT" or "GO" button might be confusing for the students. The word was changed from "CONT" TO "GO" and the color for the "GO" button was changed from red to green.

Implementation

Implementation for this project will be in three steps: first will be the pre-topic implementation. In this phase, the teacher/students will have to be taught how to use the E-books and any Internet basics that are lacking. Second will be the topic implementation. Here the students
have several lessons that have to be competed in a sequential order for them to learn all of the requirements. Third will be the post-topic implementation. This step checks for understanding.

The pre-topic implementation is necessary because not all of the teacher/students will have access to or knowledge of the Internet. The teacher/students will have to be shown that they can use the labs at school or the library to access the Internet if they do not have access at home. Some of the students may not have the basic knowledge required to use a computer, so they will have in-class instruction on how to turn a computer on, how to use the keyboard and mouse in order to access the Internet. Next will be the topic phase of implementation. This is where the students see how to use the website and the requirements that they have to fulfill during the course of instruction to learn the information they are expected to learn. This phase will be supplemented with in-class direct teaching so that questions can be answered that might arise and make sure that students are staying on track and engaged. Finally, there will be a post-topic implementation where the check for understanding will take place. In this, phase a check to see if the students have
completed each E-book by completing an assessment page and completion certificate.
CHAPTER FOUR

CONCLUSIONS AND RECOMMENDATIONS

Introduction

In summary, this project was developed to help kindergarteners learn to read by using computer technology. Other benefits of this project are; helping teachers to utilize the computer technology in their classroom, help administrators to justify the resources they spend on computer technology, give students a variety of means to access teacher created learning tools at home and in technology centers, and to fulfill No Child Left Behind legislation.

History has shown that communication started with the very basic of tools. The tools have evolved through the years from rudimentary lead pencils in 1492 to the present day computers, but no tool is of value unless it is used. Computers sitting in the corner gathering dust are of no value to anyone and a waste of resources. This project was developed in order to help teachers to make use of modern day tools and put value back into resources expended by administrators. In addition, this project will meet the NCLB requirements by helping children read at an appropriate level and learn to use computer technology.
This was accomplished by developing a program that can be burned onto a CD or uploaded onto a web page. The development of this program started out by taking teacher created reproducible reading books and coloring the graphics. Then scan these pages into a computer and insert them into a MS PowerPoint program. This PowerPoint program was designed in order for the student to read the pages and take a small test in order to check for understanding before they can progress. Each E-book has its own theme. Once the student completes reading the E-book, they will be able to print out a certificate of completion, which can be used by the teachers for various purposes.

Conclusions

In conclusion, the author believes there needs to be a better way to utilize the program on the Internet. Use of the E-book program will be limited to the teachers, their acquaintances, colleagues and their students who will benefit from using the program providing the teachers have the technology and training.

If kindergarten teachers do not have computers in their classroom, they will only be able to use the program on the Internet. If the teachers do not have training in the use of the program, they will not be able to have
their students use it. Because this is not a commercial product, no distribution will be made, therefore only friends and acquaintances of the developer will have access to the program. While uploading the PowerPoint program to a website it was discovered that, the program occupied more space on the server than economical and it was too slow to use.

Plans for Revision

Recommendations include making individual pages from the PowerPoint program into individual web pages. This will allow the program to run faster on the Internet and will take up less space on the server. The buttons were revised from "CONT" to "GO" which makes more sense since kindergarteners learn "GO" and it is one of their high frequency words. Furthermore, it is very likely that the students have not been taught the "CONT" abbreviation or the word "continue" at this level. In addition, the button's color was changed to green because kindergarteners are taught that the color red indicates stop, which could be confused with earlier teachings. The PowerPoint E-books will be changed to a Web quest type of E-book because of the lag time it takes to open the
PowerPoint and the amount of memory it uses storing the file.
APPENDIX A

CD OF PROJECT
APPENDIX B

ANALYSIS SURVEY FORM
As many of you know the No Child Left Behind (NCLB) legislation has caused quite a stir among educators. Some opinions formed from NCLB about teachers are favorable, but some are not. I am trying to develop software that will help advance our students and change some of the negative comments to positive comments. Could you please fill out the following survey in order to help me help all of us change the negative to a positive. Thank you. Please circle yes or no for each question.

1. Are you aware of NCLB?
   Yes  
   No

2. Do you have a positive opinion of NCLB?
   Yes  
   No

3. Do you perceive that people around you have a positive or negative opinion of NCLB?
   Yes  
   No

4. Is your classroom technology ready?
   Yes  
   No

5. Would you or do you use technology in the classroom?
   Yes  
   No

6. Can you see where technology in the classroom would be a benefit?
   Yes  
   No

7. If your classroom had/has technology available would you feel comfortable using the software for teaching students?
   Yes  
   No

8. Are you aware of software that would enhance your teaching?
   Yes  
   No

9. If software were available would you use it?
   Yes  
   No

10. Would you buy software to use on your computer?
    Yes  
    No

11. Do you feel that technology in the classroom would help NCLB?
    Yes  
    No

12. Do you feel that technology in the classroom would save money?
    Yes  
    No

13. Do you feel that students using technology in the classroom would help NCLB statistics become a positive influence on administration?
    Yes  
    No
APPENDIX C

FIELD TESTING SURVEY FORM
A sample of the survey that was sent to the targeted teachers follow:

<table>
<thead>
<tr>
<th>Question</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Was the website easy to access?</td>
<td>5  4  3  2  1</td>
</tr>
<tr>
<td>2. Were the instructions provided clear and helpful in using the website?</td>
<td>5  4  3  2  1</td>
</tr>
<tr>
<td>3. Was the Website well organized and informative?</td>
<td>5  4  3  2  1</td>
</tr>
<tr>
<td>4. Were the links to the different pages working properly?</td>
<td>5  4  3  2  1</td>
</tr>
<tr>
<td>5. Do you think your students would find the color scheme appealing?</td>
<td>5  4  3  2  1</td>
</tr>
<tr>
<td>6. Do you think your students would be able to navigate through the website?</td>
<td>5  4  3  2  1</td>
</tr>
</tbody>
</table>

Comments or suggestion: ________________________________
REFERENCES


