5-2002

# Sight Vocabulary and Computers: the Effect of Stories Written in the Program PowerPoint on the Acquisition of Sight Vocabulary in First Grade Students

Christopher J. Pratt
*The College at Brockport*

SUNY COLLEGE AT BROCKPORT

# SIGHT VOCABULARY AND COMPUTERS: THE EFFECT OF STORIES WRITTEN IN THE PROGRAM POWERPOINT ON THE ACQUISITION OF SIGHT VOCABULARY IN FIRST GRADE STUDENTS

By

Christopher J. Pratt

A Thesis submitted to the
Department of Education and Human Development
in partial fulfillment of the requirements for the degree of
Master of Science in Education

Degree Awarded:

May 2002

SUBMITTED BY:

Candidate 4/18/02
Date

APPROVED BY:

Thesis Advisor 4/18/02
Date

Second Faculty Reader 4/18/02
Date

Director of Graduate Studies 4/22/02
Date

Acknowledgements

I would like to express my gratitude to my wife, Diana Pratt, for her support, guidance and inspiration. I would also like to express my gratitude to my fifth grade students at Klem Road North Elementary School and Mrs. Ralg and her first grade students for their participation in the following study.

## Abstract

The purpose of this study was to investigate the effectiveness of using fifth grade students' stories presented in a PowerPoint format as a tool for developing sight vocabulary for first graders.

The subjects were two heterogeneously grouped classes, a first grade and fifth grade class, from a suburban upstate school district in New York. There were twenty first graders who served as both treatment group A and treatment group B. The fifth grade students served as the cross-aged tutors that helped the first graders as they read.

Pretests of sight words were administered before the first grade students read the stories in printed format or PowerPoint format. The class was divided so that ten read one form of the story and ten read the other. After three readings of the story a posttest was administered. The groups then switched and the study was repeated. The mean scores were then compared.

The statistical analysis indicated that there was not a statistically significant difference between the mean scores of the two treatments. The analysis also indicated that there was not a statistically significant difference between the pretest and the posttest scores for both treatments.

Table of Contents

Table of Contents (continued)

List of Tables

# CHAPTER I

## Statement of the Problem

### Purpose

The purpose of this study was to investigate the effectiveness of using fifth grade students' stories presented in a PowerPoint format as a tool for developing sight vocabulary for first graders.

### Need for the study

"Whole-word presentation was superior to single-phoneme and no better than decoding by syllables or subsyllables making whole- or sight-word learning the recommended choice for short-term learning when assisted by the computer" (Wise, 1992). In other words, using computers to present sight vocabulary words to students is more effective than using computers to teach individual parts of words.

The support exists for how individuals with special needs gain skills from the use of computers in school. Computers can offer a wide variety of supportive activities for students. The possibility is there for students to be engaged in learning tasks and exposure to print through simple activities.

Reading books can be a wonderfully engaging task for many children. Unfortunately for too many, reading can be difficult, frustrating and not enjoyable. Computers offer a new and different realm to the world of reading. Combining the two could be a way to meet the needs of the students that struggle with acquiring the skills to read fluently.

PowerPoint is a software package that allows the user to create presentations in a slide by slide fashion. Pictures and words are integrated into the slides to create a visually stimulating presentation of ideas and information. Children's own stories can be created into a PowerPoint presentation, including illustrations and eye-catching features. The stories can be played over and over, order can be changed and information can be added easily.

Stories that are written into a PowerPoint presentation offer opportunities for sight vocabulary words to be flashed to the students before they read a story, highlighted within the text and flashed after the story. The opportunity exists to have the children reading literature and also being exposed to sight vocabulary words, all within the engaging format of a computer. Exploring the influence of computers and their engaging qualities on sight vocabulary is the focus of this study.

## Null Hypotheses

1. There is no statistically significant difference between the mean pretest sight vocabulary scores for the Powerpoint method and the posttest mean sight vocabulary scores for the hard copy stories.
2. There is no statistically significant difference between the mean pretest sight vocabulary scores for trail 1 and the posttest mean sight vocabulary scores.
3. There is no statistically significant difference between the mean pretest sight vocabulary scores for trail 2 and the posttest mean vocabulary scores.

## Summary

Sight word acquisition takes place in a variety of ways. The use of PowerPoint software to introduce sight words in a story context might well be a way to develop the sight word vocabulary for first grader students.

This study took a closer look at the impact of technology on first graders acquisition of sight word vocabulary with fifth grader students as the cross-aged tutors. The students were given a pretest to test their

knowledge of the sight words before the story. Fifth grade students were then paired up with first grade students to read a paper version of the story or the same story presented in PowerPoint. The fifth grade students helped the first grade students to decode words and understand the story. After three readings a posttest was administered to determine the first grade students acquisition of sight words.

# CHAPTER II

## Review of the Literature

### Purpose

The purpose of this study was to investigate the effectiveness of using fifth grade students' stories presented in a PowerPoint format as a tool for developing sight vocabulary for first graders.

### Computers in Education

Computers have made their way into society and schools in an increasingly rapid fashion. The software and programs available for use on these computers should be powerful resources in assisting teachers in teaching and reinforcing reading skills. Sight vocabulary is one aspect of reading that can be greatly affected by the use of computers.

While computers will not replace traditional instruction, they can serve to enhance it. "Traditional instructional approaches to literature teaching rely heavily on the teacher to open doors to what is perceived as some singular, hidden meaning residing in the literary text" (Meskill & Swan, 1995, p.5). In comparison, Meskill and Swan (1995) also offer that

"multimedia technology can serve response-based practices as a vehicle that facilitates and makes more powerful the sharing of experiences and understandings gained through them" (p. 5).

Through her analysis of numerous research studies on computers in teaching, McCullough (1995) is of the opinion that, "Technology can help teachers to be significantly better at monitoring student progress and thereby significantly improve student achievement ( p. 436). She added, "Using a computer to supplement reading instruction or remediation usually improves performance" (McCullough, 1995, p. 436). Computers are tools to be used to enhance what teachers already do. To sit a child in front of a computer to "drill and kill" at a skill is setting up the child with a skill that is not integrated or added into his/her repertoire of skills to be used elsewhere. Sawyer (1999), in her analysis of computer software programs, added:

> Computers add to the education of a student when the technology is added in a manner that can be a productive learning experience. If students have the opportunity to use technology in a meaningful way rather than just using technology for fun and games the benefits of using technology in education can have great effects. One aspect that computer software offers is its interactivity. (p. 26)

Interactivity on the computer can offer both visual and/or auditory feedback. Either way can be helpful to students' acquisition and

enhancement of reading skills. A group of researchers who evaluated various reading software programs concluded that, "Computer programs with and without speech feedback have been found to be effective in increasing word decoding and word recognition skills" (Farmer, 1992; Frederiksen; Goldman & Pelegrino 1987; Warren & Rosebery, 1985a, 1985b; Warren & Rosebery, 1988, (cited in McCullough)). The interaction can range from simple to complex. An interactive form of an electronic book can be developed in the program PowerPoint that introduces the visual clues one at a time with each mouse click. Also the reader can move back and forth in the story or see the entire story at once. The interactivity adds another dimension to reading and can engage a student differently than traditional text. Greenlee-Moore and Smith (1996) observed in a study of different software programs that "typically, children were overheard laughing out loud as they read from the computer screen or making such comments as, "I've been waiting to read this one" (p. 12). Enjoyment and eagerness for reading should be at the heart of an instructional program that develops good readers. Higgins (1998) noted, in a study of electronic books where the child was exposed with no support from a teacher that, "perhaps if there were a greater degree of

interaction between the child and an adult the meanings of the target words might be better learned and retained" (p. 7).

The range of programs and software on the market offers unique possibilities to find ways in which children can acquire the tools that help them to read better. Of the great variety of programs there are many programs that are geared towards the discipline of reading and many that lend themselves directly to the teaching and reinforcing of reading skills.

Electronic books are a form of computer software that are designed to improve children's ability to read. Essentially electronic books are storybooks on a CD-ROM. They contain interactive elements such as: words that can be clicked on and the computer speaks the words; the story can be read to the reader; and the illustrations can be clicked on for informational clues. Greenlee-Moore and Smith (1996) compared the differences between electronic books and printed books on fourth-grade children's performance on story comprehension tests. They reported significant interaction between the book format and the difficulty level of the story indicating that they CD-ROM format was more effective when stories were long and difficult. Engaging students in a reading activity is a positive effect of electronic books. Children were more likely to read an

animated book over and over and were more engaged with high animation clues reading an electronic book (Okolo & Hayes, 1996).

In addition to electronic books that focus mainly on reading comprehension, there are other software programs that specifically target other areas of reading. Due to the fact that computers offer a multi-sensory medium for exposure to information, they are conducive to creating interactive activities that build sight words and word parts. Sands and Buchholz (1997) concluded that providing repeated practice exercises which integrate visual, auditory and motoric elements to assist children with dyslexia in learning how to read is a useful strategy.

Young children today are growing up in a technological world. Using technology seems to be a natural bridge between tweaking their interest in learning and teaching them new skills. "Computer intervention may be most beneficial and preventative of reading problems if used early, thus we begin by addressing the need for primary-school diagnosis and remediation of children with potential reading problems" (Sands & Buchholz, 1997, p. 5). The addition of some form of electronic book to the reading instruction can be effective at teaching new skills and sight vocabulary. "There is much to be learned about how electronic books can

be effectively used in classroom settings to improve reading achievement" (Higgins & Hess, 1999, p.431).

Computer programs and electronic books can target areas of reading such as letter recognition, letter sound relationship, sight words and comprehension. These can range from simple to complex programs. Earobics is a program designed to teach phonemic awareness through patterning. This program is simple to use. The Hunt and Hint program is designed to increase decoding fluency. In their evaluation of the program, Jones, Torgesen and Sexton (2001) concluded that it is not easy for teachers to use, but children enjoyed it. In addition they believe that an effective way to administer it would be in a cross-aged tutoring situation.

Computer programs such as PowerPoint can also be used, in effect, to create simple electronic books. Computers also make for an enjoyable and fun learning environment for a student. Hamilton (1995) states that "it is hoped that computer use will inspire children turned off by traditional paper and pencil methods achieve at levels beyond those currently demonstrated" (Hamilton, 1995, p.2). Wise (cited in McCullough, 1995) determined that whole-word presentation was superior to single-phoneme and no better or worse than decoding by syllables or subsyllables making

whole or sight-word learning the recommended choice for short-term word learning when assisted by computer.

An integral part of the impact that computers can have on student acquisition of skill is how the teacher uses technology. An educator who is knowledgeable about computers can integrate the computers and a traditional program in order to create a positive effect on students' acquisition of skill. Middleton and Murray (1999) determined through a study on levels of technology, "that student academic achievement (in math and reading) was affected by the level of technology used by the classroom teacher" (p.113). McCullough (1995) came to a similar conclusion in her evaluation of computer-assisted instruction using a computer to supplement reading instruction. However, many factors mediate outcomes including time on task, integration into the curriculum and teacher support and training.

At the heart of technology usage in the classroom is how it is integrated, what the children take away and how they feel. Computer software is available for use and has potential for improving student achievement as well as other aspects of student learning. Through her review of the impact of computers on students' learning

McCullough (1995) concluded that computer applications do have a positive effect on students' academic achievement from the elementary school to college.

## Sight Vocabulary

> Word recognition is the process of linking the written form of a word with a representation in the mental lexicon. Two components can be distinguished: forming a visual or phonemic code and activating the syntactic and semantic information connected with the word. (Aarnoutse and Leeuwe, 2000, p. 252)

Sight vocabulary words are words the brain encodes as a chunk or one unit and automatically recognizes in reading by first sight and do not need to be decoded. Learning sight vocabulary words can come in a variety of ways. Routman (1988) discovered in her observations of students that "children were learning these words naturally through repeated readings of favorite books and through their own daily writing" (p. 48). Routman (1991) later describe that "while some children will learn to read naturally through immersion in daily reading and writing activities, most children benefit from some guided instruction" (p. 142). Even at the

beginning of first grade, literature can be used to teach sight vocabulary, promote fluency, and develop reading strategies.

Research on sight word instruction is especially important because it can provide a comprehensive foundation for functional academics. Most functional academics involve some discrimination of words or symbols. (Browder & Xin). Johnston (1998) identified the three critical factors in regards to word learning: the reader, the text and the task. The interaction of the three determines the acquisition of new words into their vocabulary. The reader is a dynamic component due to the experience, schema and skill s/he brings to adding new words into his/her vocabulary.

Rasinski (2000) observed, in his role as director of a reading clinic, that "improving students' word recognition efficiency and helping readers develop greater sensitivity to the syntactic nature of the text will result in more efficient reading and improved reading rate or fluency" (p. 151). The text and the task can be controlled, but the reader develops his/her own way and at his/her own speed. Recognition of words by sight allows a reader to spend more time reflecting on what is read. Ediger (2000) states that "students need to become proficient in recognizing words in order to become fluent readers" (p. 1).

Sight words are learned in phases. The five phases are: pre-alphabetic, characterized by little working knowledge of the alphabetic system; partial alphabetic, characterized by kindergartners and first graders alphabetic knowledge; full alphabetic, characterized by students with working knowledge of major grapheme units; consolidated-alphabetic, characterized by students who have used the previous phases to build a sizeable vocabulary; and the automatic-alphabetic phases, characterized by mature readers who recognized most words. (Ehri & McCormick, 1998) Students move through these phases as they gain more knowledge of the alphabet, letter sound relationships and eventually words as combinations of sounds. Memory is a key component to the development of a large sight word vocabulary. In addition to memory other factors might include how much time is spent on a task, repetition and also visual aids. After an extensive study on improving sight vocabulary Henning and Pickett (2000) determined that consistent practice combined with a variety of research-based strategies was effective but more visual aids should have been combined with direction instruction.

There are many different strategies to teaching sight vocabulary such as word walls, flashcards, repeated readings and the use of

technology. Dennis (2001) raises the issue that technology development in reading is likely to alter our notions of literacy and literacy instruction in the areas of word recognition and comprehension. Technology is one way in which sight words can be taught.

## Cross-aged Tutoring

How technology is used and integrated is one of the most critical factors in the effectiveness of computer software. Through the use of technology, students have different experiences with language and sight vocabulary. Technology offers additional aspects of exposure and elements that go beyond what a printed book can offer. Tutoring is another dimension that can used to affect the acquisition of sight vocabulary.

Tutoring can come in different formats. Peer tutoring and cross-aged tutoring are two models that are used in schools. Fasko (1996) studied the effectiveness of peer tutoring for sight-word acquisition and concluded, "the results offer some promising preliminary information about the effectiveness of peer tutoring flashcard drill for improving sight-word acquisition. It appears that oral reading fluency may also be

strengthen by improving word recognition" (p. 8). Fourth grade students paired up with struggling second grade students to work on vocabulary words on flash cards. Rewards and positive praise were two elements that contributed to the success in three out of the four students in the study.

Cross-aged tutoring offers a way to have one student that has acquired the skill instructing the other on the skill. The tutee learns the new skill, while the tutor is reinforcing his/her knowledge.

Newell (1996) examined the effects of a cross-aged tutoring program involving second and fourth grade students and concluded that "cross-age tutoring programs that utilize experienced students as resources to teach computer skills to less experienced students should be considered" (p. 352).

Barretta and Miller (1991) concluded from a study of cross-aged tutoring in sight vocabulary that "all students acquired and maintained a substantial number of new sight vocabulary words after tutoring and mastery was accomplished in only a few days" ( p. 28). This dimension, combined with technology, demonstrates the need for techniques in reading to be multidimensional and varied.

Enthusiasm is one dimension that can be part of a cross-aged program. Enthusiasm generates interest and interest allows the student to

be exposed in a way that learning will be positive. Leland and Fitzpatrick (1994) stated, after a study of a cross-aged tutoring project, that "it is time to take the castor oil out of reading programs" (p. 70). Educators need to find ways to encourage students to choose literacy on their own, for only then will they become lifelong learners.

## Summary

Computers have made their way into the elementary school classroom. How and what they are used for depends on the knowledge and comfort with using technology. The inherent nature of computers offers a new approach with which to expose children to the written words. Therefore impacting their acquisition of sight words. Combining computer usage with a cross-aged tutoring program can offer another dimension to reading that guides children in a comforting way to add to their reading skills.

# CHAPTER III

## Design of the Study

### Purpose

The purpose of this study was to investigate the effectiveness of using fifth grade students' stories presented in a PowerPoint format as a tool for developing sight vocabulary for first graders.

### The Null Hypotheses

1. There is no statistically significant difference between the mean pretest sight vocabulary scores for the Powerpoint method and the posttest mean sight vocabulary scores for the hard copy stories.
2. There is no statistically significant difference between the mean pretest sight vocabulary scores for trail 1 and the posttest mean sight vocabulary scores.
3. There is no statistically significant difference between the mean pretest sight vocabulary scores for trail 2 and the posttest mean vocabulary scores.

# Methodology

## Subjects

Two heterogeneously grouped classes, a first grade and fifth grade class, from a suburban upstate school district in New York participated in the study. There were twenty first graders who served as both treatment group A and treatment group B. The fifth grade students served as the cross-aged tutors who helped the first graders as they read. The first grade subjects ranged greatly in their reading ability, from preprimer to third grade reading levels.

## Materials

Four computers loaded with PowerPoint software were used for the reading of the electronic books. Printed copies of the stories were used for the both treatments. Flashcards were used to determine which of the sight words were known prior to and after the treatments were administered.

Procedures

A class of fifth grade students typed and illustrated a set of stories they wrote about animals for the first grade class using PowerPoint. A few sentences from the stories became a page of the story that filled a slide in the presentation. Two stories were selected for this study. The students' first grade teacher selected the stories based on the reading level and words that were in the stories. The stories were printed out and formed into bound storybooks. For the purposes of this study thirteen words from each story were selected as the sight words to be analyzed to determine the effect of each treatment.

Half of the class read a story generated by a fifth-grader in print form. The other half read the same story in a PowerPoint format. After the first graders read the story three times, a sight word posttest was administered. The groups switched and the process was repeated.

Prior to reading a story a pretest of sight words contained in the story was administered. Words known by at least 30% of the students were eliminated.

The reading aspect consisted of a fifth grade student reading with a reading buddy from a first grade class. The students in fifth grade received training prior to the reading in how to help the first grader

students decode unknown words and also how to help them comprehend the stories. The first time through the story the fifth grade students read the story to the students. Each succeeding time they read together and the fifth grade students guided the first grade students.

## Analysis of Data

The data were analyzed using both dependent and independent t-tests that measured the difference between two means.

## Summary

This study was designed to investigate the effectiveness of students reading stories written in a Powerpoint format in learning sight vocabulary. Pretests were administered prior to reading stories. First grade students read stories written in a Powerpoint format or printed copies. Posttests were administered after three readings.

# CHAPTER IV

## Analysis of Data

### Purpose

The purpose of this study was to investigate the effectiveness of using fifth grade students' stories presented in a PowerPoint format as a tool for developing sight vocabulary for first graders.

### Findings and Interpretations

The following null hypotheses were investigated:

1. There is no statistically significant difference between the mean pretest sight vocabulary scores for the Powerpoint method and the posttest mean sight vocabulary scores for the hard copy stories.
2. There is no statistically significant difference between the mean pretest sight vocabulary scores for trail 1 and the posttest mean sight vocabulary scores.
3. There is no statistically significant difference between the mean pretest sight vocabulary scores for trail 2 and the posttest mean vocabulary scores.

The first null hypothesis stated that there would be no significant difference in the identification of flashed sight words between the two treatments. The calculated t value between the pretest scores and posttest scores for the first null hypothesis was .97. For a t test of independent measures at a .05 level of confidence, the critical value for 19 degrees of freedom is 2.09. Since the calculated t value was less than the critical t value, the probability was more than a 5% chance that the difference of means occurred by chance. Therefore the null hypothesis was not rejected (Table 1).

Table 1

A t test for Independent Measures of

Significant Difference Between Two Treatments

| Group | d.f. | $\bar{x}$ | t |
|---|---|---|---|
| Treatment A | 19 | 7.70 | |
| Treatment B | 19 | 8.70 | .97 |

The second null hypothesis stated that there would be no statistically significant difference between the two treatments in trial 1 in

their recognition of sight words on the posttest. The calculated t value between the pretest and posttest scores was .23. The critical value was 2.10. Therefore the null hypothesis was not rejected (Table 2).

Table 2

A t test for Dependent Measures of

Significant Difference Between Two Treatments

| Group | d.f. | $\bar{x}$ | t |
|---|---|---|---|
| Treatment A | 9 | 6.5 | |
| Treatment B | 9 | 6.2 | .23 |

The third null hypothesis stated that there would be no statistically significant difference between the two treatments in trial 2 in their recognition of sight words on the posttest. The calculated t value between the pretest and posttest scores was 1.13. The critical value was 2.10. Therefore the null hypothesis was not rejected (Table 3).

Table 3

A t test for Dependent Measures of

Significant Difference Between Two Treatments

| Group | d.f. | $\bar{x}$ | t |
|---|---|---|---|
| Treatment A | 9 | 9 | |
| Treatment B | 9 | 11.2 | 1.13 |

The analysis of the data indicate that there was not a statistically significant difference in the acquisition of sight vocabulary between the two treatments.

## Summary

The findings of this study indicated there was not a statistically significant difference between using a story presented in a PowerPoint format and a story presented in traditional book format. Both methods proved to be successful at teaching sight vocabulary words to first grade students.

# CHAPTER V

## Conclusions and Implications

### Purpose

The purpose of this study was to investigate the effectiveness of using fifth grade students' stories presented in a PowerPoint format as a tool for developing sight vocabulary for first graders.

### Conclusions

The results of this study indicate that there was not a statistically significant difference between the two methods of using cross-aged tutors to teach first grade students sight vocabulary words. Both methods appeared to be effective in teaching sight vocabulary.

The analysis of the data indicate that the use of stories written in Powerpoint had an equivalent impact on first grade students' sight vocabularies as compared to using a traditionally presented story.

## Implications for Classroom Use

This study supports the use of student published stories in PowerPoint in the classroom in combination with cross-aged tutoring to teach sight vocabulary to first grader students. Teachers should consider implementing a cross-aged tutoring computer program in their classroom.

The data suggest that this is an effective program. In addition, the students would benefit from the use of technology and the relationships in the program. Older students are eager to assist younger children and also enjoy having his/her writing pieces published. Together these elements would foster growth in many areas of development in both age groups.

School districts continue to spend money on computers and software that is currently in many classrooms. Students will be expected to understand how to use programs such as PowerPoint. Allowing students to publish stories on the computer and share them with younger students would build in a purpose for writing as well as new method for writing. The use of such a program would benefit the school community as a whole and the reading skills of those students involved.

I observed the joy that this program brought to the first and fifth grade students. The first grade students enjoyed the experience in

working with fifth grade reading buddies. They also enjoyed the growth that they made from pretest to posttest after reading the stories. Many students made comments such as, "I know these words now", "this word was in the story", and "can I go read now". I also observed the how this program benefit the fifth grade students. The fifth grade students made comments that indicated their reflection on the difficulties of the reading process and the recognition of their own skills. One student commented that, "I never realized all the work that went into reading when I was that age." Other comments reflected the fact that the fifth grade students enjoyed the experience and had created bonds with their younger friends. Each afternoon the fifth grade students begged to go read with the first grade students. Overall the fifth grade students were amazed at how quickly the first grade students learned the stories they read and recognized the words they did not know initially. I heard many comments of encouragement. One fifth grade student's comment of "reading with the first graders helps me too" confirmed the benefits for both groups in a cross-aged tutoring situation.

## Implications for Further Research

In future research, a larger or different testing population could be utilized to determine the effectiveness on various types of students.

A longitudinal study could determine if the sight words were integrated into their memory or if they were only a short-term gain. Administering a posttest a few months later would allow for this information to be obtained.

The types of stories used in a cross-aged tutoring situation is an area of further research. Targeting stories to students' reading levels in a future study could offer more opportunity for the first grade students to acquire more sight words.

## Summary

The goal of this study was to determine the effect a cross-aged tutoring program had on the sight word acquisition in first grade students. The analysis of the data indicated that there was no statistically significant difference between the two methods used to instruct the students. However, both methods used showed a measured increase in the students' sight vocabulary.

# References

Aarnoutse, C. & Leeuwe, J. (2000). Development of poor and better readers during the elementary school. Educational Research and Evaluation, 6 (3), 251-278.

Barretta, P., & Miller, A. (1991). A cross-age tutoring program to teach sight vocabulary. Education & Treatment of Children, 14 (1), 19-38.

Browder, D.M., & Xin, Y.P. (1998). A meta-analysis and review of sight word research and its implications for teaching functional reading to individuals with moderate and severe disabilities. Journal of Special Education, 32 (3), 130-154.

Dennis, M.G. (2001). Computer mediated word recognition: Poised to make a difference? Reading and Writing Quarterly 17(1), 99-103.

Ediger, M. (2000). Assessing student word recognition skills. Opinion Paper. (ERIC Document Reproduction Service No. 447 447)

Ehri, L.C., & McCormick, S. (1998). Phases of word learning: Implications for instruction with delayed and disabled readers. Reading and Writing Quarterly, 14(2), 135-164.

Fasko, S.N. (1996). A peer tutoring intervention for sight-word recognition. National Association of School Psychologists Annual Conference, Atlanta, Georgia. (ERIC Document Reproduction Service No. 396 243)

Greenlee - Moore, M., & Smith, L. (1994). Interactive computer software: The effect on young children's reading achievement. Conference paper. (ERIC Document Reproduction Service No. 384 019)

Hamilton, V. (1995). Computers and reading achievement. Chicago. (ERIC Document Reproduction Service No. 382 923)

Henning, D., & Pickett, A. (2000). A study of improving sight and functional vocabulary develoment and comprehension. Master's Thesis. (ERIC Document Reproduction Service No. 442141)

Higgins, N. & Cox, P. (1998). The effects of animation cues on third grade children's ability to learn the meanings of unfamiliar words. Faculty Released Time Project Final Report. Dowling College, Oakdale, NY. (ERIC Document Reproduction Service No.418 686)

Higgins, N., & Hess, L. (1999). Using electronic books to promote vocabulary development. Journal of Research on Computing in Education, 31 (4), 425-431.

Johnston, F.R., (1998). The reader, the text, and the task: Learning. Reading Teacher, 51(8), 666-677.

Jones, K.M., Torgesen, J.K., & Sexton, M.A. (2001). Using computer guided practice to increase decoding fluency in learning disabled children: A study using the hint and hunt I program. Journal of Learning Disabilities, 20 (2), 122-128.

Leland, C., & Fitzpatrick, R. (1994). Cross-age interaction builds reading/writing enthusiasm. Education Digest, 59(7), 66-70.

McCullough, C. S. (1995). Computer-assisted instruction. School Psychology Review, 24 (3), 426-440.

Meskill, C., & Swan, K. (1995). Roles for mulitmedia in the response-based literature classroom. National Research Center on Literature Teaching and Learning. (ERIC Document Reproduction Service No.387 803). Washington, D.C. Office of Educational Research and Improvement.

Middleton, B., & Murray, R. (1999). The impact of instructional technology on students academic achievement in reading and mathematics. International Journal of Instructional Media, 26(1), 109-117.

Newell, F.M. (1996). Effects of a cross-aged tutoring program on computer literacy learning of second-grade students. Journal of Research on Computers in Education, 28(3), 346-359.

Okolo, C. & Hayes, R. (1996). The impact of animation in CD-ROM books on students' reading behaviors and comprehension. Conference Paper. Orlando, FL, 1996. (ERIC Document Reproduction Service No.395 434)

Rasinski, T.V. (2000). Speed does matter in reading. Reading Teacher, 54(2), 146-152.

Routman, R. (1988). Transitions: From literature to literacy. Melbourne, Australia: Rigby.

Routman, R. (1991). Invitations: Changing as teachers and learners K-12. Portsmouth: Heinemann.

Sands, S., & Buchholz, E. (1997). The underutilization of computers to assist in the remediation of dyslexia. International Journal of Instructional Media, 24 (2), 153-176.

Sawyer, T.L. (1999). A study of the use of reading software in the classroom. Master's Action Research Project. Johnson Bible College. (ERIC Document Reproduction Service No.432 736)

Wise, B. (1992). Whole words and decoding for short-term learning: Comparisons on a "talking-computer" system. Journal of Experimental Child Psychology, 54, 147-167.

# Appendices

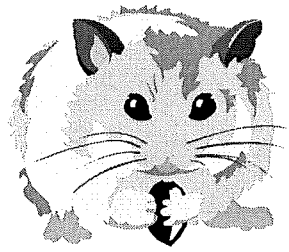
Appendix A

The Funny Hamster Story

# The Funny Hamster

One day a hamster got into Klem Road North Elementary School.

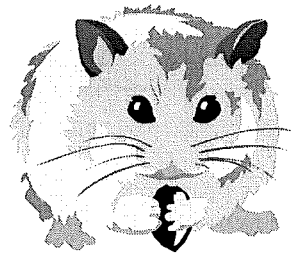
1



He wandered into Mr. Pratt's classroom and decided he was tired.

2

- He took some tissues to make a little bed in Mr. Pratt's desk. After that he lay down and took a nap.

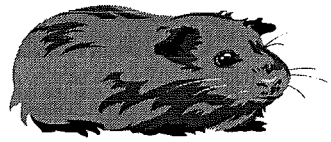


3

- Then Mr. Pratt came in the room, opened his desk and saw the hamster.

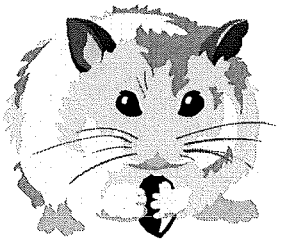
4

The class liked the hamster but he did not.



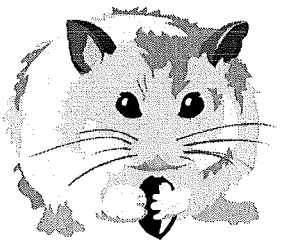
5

- The hamster woke up and started to run away. Mr. Pratt started to chase him.



6

- The hamster ran from him but he continued to chase it.

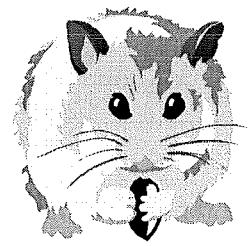


7

- The hamster screamed, "You can keep me as a class pet!"

8

- Mr. Pratt thought this was a good idea, so they kept the hamster as a class pet.



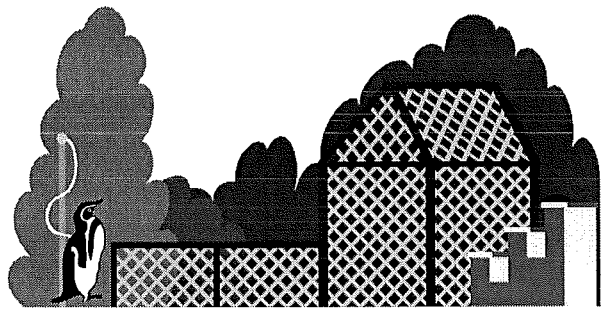
9

Appendix B

Eddie the Elephant Story


One summer day Eddie the
Elephant walked out of school.

1



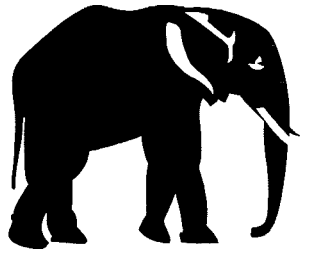
It was the last day of school,
so he jumped into the air.

2

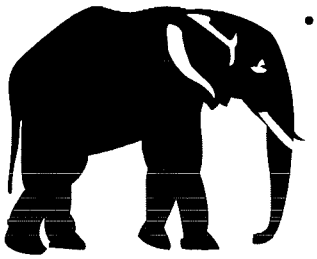
When he got home all of
his friend's were on
vacation. He had nothing to do.

3

He moped all around the house.



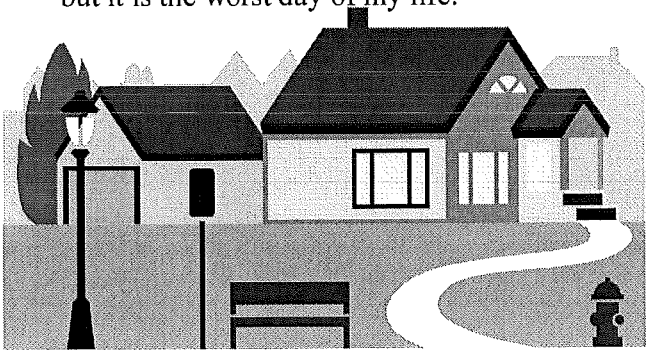
4



- While he was walking down the hall to his bedroom he tripped on a peanut shell.

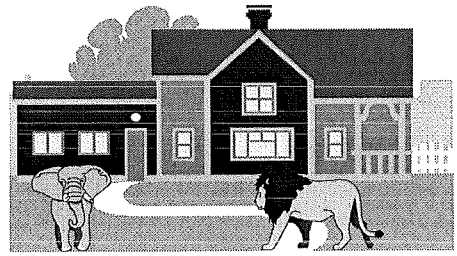
5

He landed with a plop. He said to himself, "it might be the last day of school but it is the worst day of my life."



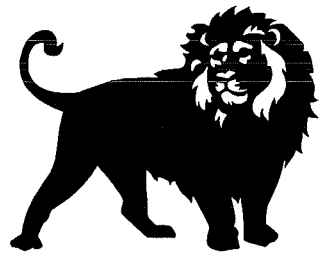
6

- Eddie went outside and he saw a lion moving in next-door.



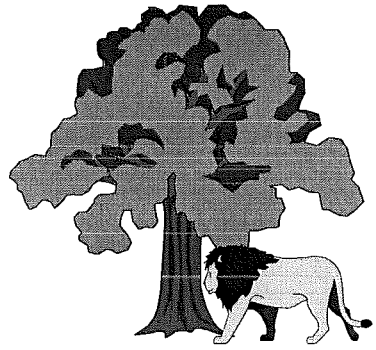
7

Eddie thought he was going to be the lion's friend. He went over and said, "Welcome to the block."

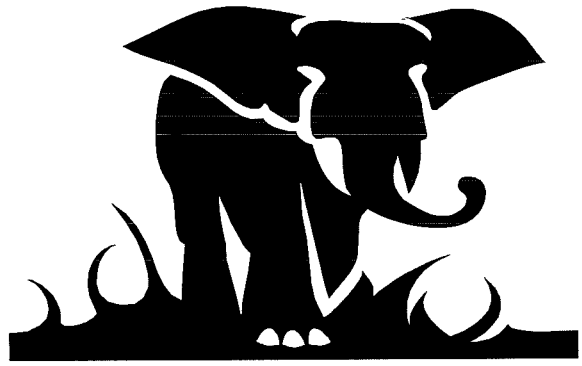


8

The next day the lion and Eddie were best friends.
Leo the lion and Eddie played by the big tree.



9



Eddie said, "now this is the best day
of my life!"

10