

EFFECT OF INDEPENDENT READING ON FOURTH GRADERS' VOCABULARY,
FLUENCY AND COMPREHENSION

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EFFECT OF INDEPENDENT READING ON FOURTH GRADERS' VOCABULARY,
FLUENCY, AND COMPREHENSION

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Cathy Mechelle (Harris) Williams, daughter of Bobby Joe and Sue (Boone) Harris, was born January 30, 1961, in Alexander City, Alabama. She graduated from Tallapoosa Academy in 1979. She attended Central Alabama Community College for two years, and then entered Auburn University in 1981. She graduated in 1982 with a Bachelor of Science Degree in Elementary Education and entered the classroom as an elementary teacher. She has since returned to Auburn University and earned her Master's Degree and AA Certification in Elementary Education and both the Master's Level Reading Specialist and Administrative Certification in Educational Leadership. She is the mother of two children; Bethany Suzanne (Ragsdale) Smith and Jantzen Harris Ragsdale, and the wife of Jimmy Williams.

DISSERTATION ABSTRACT
EFFECT OF INDEPENDENT READING ON FOURTH GRADERS' VOCABULARY,
FLUENCY AND COMPREHENSION

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Acquiring an extensive vocabulary can have an enormous effect on one's comprehension, fluency, and the ability to speak effectively to others. One way to acquire this widespread vocabulary is through reading a wide array of texts. Words are encountered and meshed into one's internal word bank through independent reading. Likewise, lifelong love of reading promotes one's vocabulary acquisition because repeated exposure to vocabulary in various contexts helps students learn words (National Reading Panel, 2000).

The purpose of this study was to measure the effectiveness of independent reading on fourth-grade students' vocabulary acquisition, fluency rate, and overall comprehension. It was conducted with two groups of fourth-grade students. The control group had regular study hall classes each day. The treatment group had twenty minutes of independent reading time built into their school day during the study hall period.

Data were collected through the use of the Accelerated Reader program, which not only tracks the books read and measures comprehension but also cumulatively counts the numbers of words in the readings. The Peabody Picture Vocabulary Test, which measures vocabulary acquisition from birth to 99 years of age, was given as a pretest (August) and posttest (December) to both groups. Pre- and posttest scores from Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency (ORF) were used to measure students' reading accuracy and speed as indicated by the number of words read correctly in one minute. The Degrees of Reading Power (DRP), which is a criterion-referenced test, was used to measure students' gains in reading comprehension from pre- to posttest, and the DRP provided holistic measures of how well students understood the meanings of leveled passages.

The results of this study indicated that independent reading time can significantly improve fluency as well as the total number of words read for fourth graders in books for which they took and passed Accelerated Reader tests. No significant differences were found between the treatment and control groups for vocabulary acquisition or comprehension as individual components of reading achievement.

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TABLE OF CONTENTS

LIST OF TABLES	xi
I. INTRODUCTION	1
Theoretical Basis.....	2
Statement of Research Problem	4
Purpose of Study.....	6
Research Questions.....	6
Statement of the Hypothesis	7
Definition of Terms.....	8
Scope and Limitations.....	9
Assumptions of the Study	10
Significance of the Study	11
II. REVIEW OF RELATED LITERATURE	13
Introduction.....	13
Matthew Effect.....	14
Incidental versus Intentional Vocabulary Learning.....	17
Combating the Dreaded Fourth Grade Slump	20
Correlational Research.....	24
Experimental Research	26
Overview of the Study	29
III. METHODOLOGY	31
Research and Hypothesis	31
Research Design.....	33
Description of Setting and Sample	38
Setting	38
Sample.....	38
Instruments.....	38
Degrees of Reading Power.....	38
DIBELS – Oral Reading Fluency	39
Peabody Picture Vocabulary.....	40
Accelerated Reader	41
Data Collection	41

IV. RESULTS	44
Introduction	44
Table 1	45
V. DISCUSSION	49
Introduction	49
Discussion of Findings and Recommendations	51
Limitations of Study	52
Need for Further Research.....	53
Educational Implications	54
REFERENCES	55
APPENDIX A. Letter from Superintendent Granting Permission To Conduct Research	64
APPENDIX B. Letter of Consent to Parents and Guardians	66
APPENDIX C. Degrees of Reading Power	68
APPENDIX D. Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency	70
APPENDIX E. Peabody Picture Vocabulary Test	72
APPENDIX F. Accelerated Reader Word Summary Report.....	74

LIST OF TABLES

Table 1. Pre- and Posttest Scores for Treatment (N=30) and Control (N=20) Groups.....	43
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CHAPTER I.

INTRODUCTION

“What is written without effort is in general read without pleasure.”

Samuel Johnson (Ekwall, 2002, p. 9)

According to *Put Reading First*, the term vocabulary refers to the words we must know to communicate effectively, and falls into four categories: listening vocabulary, speaking vocabulary, reading vocabulary and writing vocabulary (Armbruster, Lehr, & Osborne, 2001). Building a large vocabulary is an essential component of learning to read. To comprehend most children’s books, a reader must have a large vocabulary because these texts contain language that is ten times more complex than the conversational language of college students (Cunningham & Stanovich, 1998). People with large vocabularies are more proficient readers, writers, and speakers than those with limited word knowledge (Meara, 1995). Having an extensive vocabulary, according to Parry (1991), contributes to reading fluency as well as comprehension. Likewise, people who can and do read widely encounter and learn many more words than they would be exposed to in conversations and through the media (Cunningham & Stanovich, 1998). Vocabulary learning is a lifelong process in which people, especially those who read a lot, continue to incorporate new words into their lives and to accrue their own highly individualized vocabularies (Craik, 1972).

Theoretical Basis

There are varying opinions about the most effective ways to expand vocabulary (Helgesen, 1997). According to Saragi (1978), research and professional literature on vocabulary acquisition reveals a spectrum of theoretical positions ranging from highly cognitive approaches that stress the direct instruction of decontextualized lists of words to highly naturalistic approaches that stress incidental, indirect, and contextualized learning.

Advocates of direct vocabulary instruction use behavioral theory to support teaching that builds paired associations of words and their definitions and provides positive or negative reinforcement for the number of words and meanings that students master (Manzo & Manzo, 1995). Behavioral theorists as far back as Pavlov, Thorndike, Watson, and Skinner believed that learning takes place optimally through classical conditioning based on paired associations or operant conditioning with reinforcement. Using a behavioral approach to vocabulary learning educators emphasize direct instruction with drill and practice on words and meanings following exercises in which students are recipients of reinforcements in the form of scores that measure their responses. Emphasis is on measuring behaviors that demonstrate students learning and measurable changes in behaviors such as correctly reciting or marking the definition with which words have been paired can confirm that learning has taken place. Drill and practice is thought to strengthen learning habits. Giving something or taking something away, even if only in the form of a high or low score on a vocabulary test, also maintains and build learning habits or allows unwanted habits to be broken quickly and extinguished. Behavioral theory is the cornerstone of the direct instruction approach to teaching vocabulary through association and memorization of words and meanings and drill and practice in

which students often recite or identify definitions for words that are taken out of their written context or that are taught in isolation on lists with little or no contextual support (Manzo & Manzo, 1998).

Conversely, advocates of Psycholinguistic theory and Whole Language hypothesize that a larger pool of words can be acquired by increasing students' volume of reading and indirect vocabulary learning (Davis, 1995). Psycholinguistic theorists states that written language and vocabulary are acquired in the same was as oral language and spoken vocabulary and suggest that students are prewired to acquire and process words incidentally due to the neurological workings of the brain and the language acquisition device that is innate for human beings. Whole language approaches to oral and written language acquisition are based on the tenets of Psycholinguistic theory and form the philosophical underpinnings for indirect, incidental vocabulary learning of words in natural, meaningful contexts.

Whole language has several strands from Psycholinguistic theory running through its iterations. These strands focus on making meaning in reading and expressing that meaning in writing or creative knowledge, emphasizing various and frequent word exposures in multiple contexts, and level-appropriate book selection for instructional and independent reading.

For proponents of Psycholinguistic Theory and Whole Language approaches to teaching, vocabulary as well as other skills are taught incidentally in meaningful, authentic contexts and are not linked directly to developing definitional meaning, drill and practice exercises, or response-and-reinforcement models of learning (Goodman, 1967). Similarly, proponents of indirect and contextualized vocabulary learning draw

from Psycholinguistic theory and the premise that students sift through the myriad of words they encounter incidentally to fix their personal vocabularies (Manzo & Manzo, 1998). Larger volumes of reading allow readers to see words repeated across texts and to develop more accurate understanding about the degrees and shades of word meanings, both of which foster both depth and breadth of vocabulary acquisition (Manzo & Manzo, 1998).

Naturalistic, incidental vocabulary acquisition occurs through conversation with adults, hearing books read aloud, and extensive reading on one's own (National Reading Panel, 2001). Studies of incidental vocabulary acquisition have shown that learning through extensive reading is not only possible, but it is almost certainly the means by which individuals acquire the majority of the words in their vocabularies (Saragi, Nation, & Meister, 1978). Nagy and Herman (1987) suggested that the process of learning words incidentally from context accounts for most of the vocabulary growth they observed in school-aged children after the third grade.

The study reported in this dissertation was conducted to see if merely increasing the volume of independent reading done by students each day might have an indirect but substantial effect on increasing their vocabulary and a positive impact on their fluency and comprehension. Over the course of the school year, one group of students spent twenty minutes per day of study hall doing independent reading while another group used the whole period for study hall to complete daily assignments or homework.

Statement of the Research Problem

Some students, especially those who are socioeconomically disadvantaged, may read adequately from kindergarten through third grade but suddenly begin to struggle when

they reach fourth grade. This phenomenon has been referred to as the fourth grade slump (Chall, Jacobs, & Baldwin, 1990). Nearly twenty-five years ago, Jeanne Chall identified two major stages of reading development. The first stage, typically encompassing first, second, and third grades is the period when children are learning to read and the second stage, typically including fourth grade and beyond, is the period when children are reading to learn. Learning to read is a time when students learn to decode words contained in simple texts that use familiar language. In fourth grade, texts are more complex and abstract and contain language and concepts that are more challenging; therefore, many fourth grade students' reading scores decline. In subsequent grades, as texts become more and more difficult and supply less and less contextual support, students who experience the slump in the fourth grade also face what Chall and colleagues (1998) referred to as the eighth grade cliff. In 2007, the most recent results of the National Assessment of Educational Progress (NAEP) confirmed that even now sixty-nine percent of fourth grade students and seventy-one percent of eighth grade readers are not grade level proficient readers and that the achievement gap persists between minority and disadvantaged students and majority and more advantaged students who are their counterparts (NCES, 2007).

It is important to note that Chall (1983) found vocabulary scores were the first to drop among fourth graders and that comprehension scores followed. She contended that contextual support in texts read before and at the beginning of fourth grade was sufficient to compensate for word-meaning weaknesses but, as the text concepts and language became more complex, contextual support was no longer sufficient to sustain comprehension for many fourth graders. So what can schools do to combat the dreaded

fourth-grade slump and help students avoid the eighth grade cliff? Chall and Jacobs (2003) recommended a focus on vocabulary learning to expand students' word knowledge and a continued emphasis on fluency instruction. By sharpening these skills, students can learn to identify words and their meanings instantly so their cognitive capacity can be used solely for comprehension of connected text. The aim of this study was to see if more time for immersion in text might improve fluency and comprehension for fourth graders and decrease the likelihood that they may experience the fourth grade slump.

Purpose of the Study

The purpose of the study was to determine whether there would be a measurable increase in vocabulary, fluency, and comprehension scores of those fourth grade students who had twenty minutes of independent reading time each day as compared to those fourth grade students who did not have the twenty minutes of independent reading time. Specifically, the study addressed the following research questions:

Research Questions:

1. To what extent is there a difference in pre-to-posttest gain scores of comprehension as measured by Degrees of Reading Power for fourth grade students who had twenty minutes of daily independent reading time and those students who did not have this amount of independent reading time each day?
2. To what extent is there a difference in pre-to-posttest gain scores for fluency as measured by the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency scores for fourth grade students who had twenty minutes of independent

reading time and those students who did not have this amount of independent reading time daily?

3. To what extent is there a difference in Peabody Picture Vocabulary pre-to-posttest gain scores for fourth grade students who had twenty minutes of independent reading time and those students who did not have independent reading time each day?
4. To what extent is there a difference in Accelerated Reader Word Count *t*-test scores for fourth grade students who had twenty minutes of independent reading time and those students who do not had twenty minutes of independent reading time daily?

Statement of the Hypotheses

H_{O1}: There is statistically no significant difference in pre-to-posttest gain scores of comprehension as measured by Degrees of Reading Power for fourth grade students who had twenty minutes of daily independent reading time and those students who did not have this amount of independent reading time each day.

H_{O2}: There is statistically no significant difference in pre-to-posttest gain scores for fluency as measured by the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency scores for fourth grade students who had twenty minutes of independent reading time and those students who did not have this amount of independent reading time daily.

H₀₃: There is statistically no significant difference in Peabody Picture Vocabulary pre-to-posttest gain scores for fourth grade students who had twenty minutes of independent reading time and those students who did not have independent reading time each day.

H₀₄: There is statistically no significant difference in Accelerated Reader Word Count *t*-test scores for fourth grade students who had twenty minutes of independent reading time and those students who do not had twenty minutes of independent reading time daily.

Definition of Terms

- *Independent Reading*: Students self select books and then read silently at school or at home. Students can select from the sets of books on the student's independent reading level as determined by the Standardized Test of Assessment of Reading (STAR) assessment that is part of Accelerated Reader. This time is also known as Drop Everything and Read (DEAR) and Sustained Silent Reading (SSR) in other schools.
- *Independent Reading Level*: Books on the level at which the student can read with 85-100% accuracy. In this study students read Accelerated Reader (AR) books independently.
- *Study Hall*: A period of time during the school day that is set aside for study. In this study, the experimental group had twenty-five minutes of study hall, and twenty minutes of independent reading, and the control group had forty-five minutes of study hall.

- *Vocabulary*: All the words a person understands and is able to use (Beck, McKeown, & Kucan, 2002). Vocabulary development was measured by administering the Peabody Picture Vocabulary Test.
- *Reading Fluency*: Fluency was measured by administering Oral Reading Fluency (ORF) which was a words read correctly per minute score.
- *Comprehension*: The process of constructing meaning from reading. Comprehension was measured by DIBELS Retelling scores and Degrees of Reading Power (DRP).
- *Prosody*: Reading effortlessly with expression and intonation, like natural speaking; greatly fluent.

Scope and Limitations

Although the existing study was restricted to fourth graders from one participating school positioned in a rural Alabama neighborhood, its scope includes outcomes and implications that could benefit students in grades including and other than fourth grade in this school district and in other similar populations. The research questions may also be pertinent in guiding further educational research. This study attempted to determine if the incorporation of independent reading time in the instructional day had an effect on students' vocabulary, fluency, and comprehension. Students who participated in the study were fourth graders of all levels. Outcomes obtained certainly broaden the knowledge about effects of independent reading for the field of reading education.

For this study, there were a few limitations that necessitate consideration and caution. This study took place in a small rural community. Students were of similar

economic and social background. The teachers volunteered to be in either the treatment or control group; therefore, differences in motivation as well as in inconsistency for instructional delivery could have occurred. Random assignment of students to treatment and control conditions was not possible. Therefore, this study was not a true experimental design, and any results indicating possible causal relationships between the treatment (independent reading time) and the outcome measures (vocabulary, fluency, and comprehension) must be interpreted cautiously and may not be generalized to other students in other schools and circumstances. The students who were in the control group had access to textbooks and Accelerated Reader books and were able to read independently if they desired. The researcher was not in control of this factor and had no method for accurately measuring the total amount of reading actually done by the students in either the treatment or control group.

Measures used in this study may not have been the most effective to measure vocabulary and comprehension of texts read by the participants. The PPVT and DRP do not measure words and comprehension of the text from which students interacted in AR. Results could have been more supportive of the research questions and null hypothesis had they measured what was being read by the participants.

Assumptions of the Study

The study is grounded in the following assumptions:

- There was accurate administration, scoring and reporting for all instruments used as outcome (DRP, PPVT, ORF) measures and independent variables for statistical analyses.

- The data obtained represented each student's best effort on the measures given.
- The participants in the study were a representative sample of students in rural Alabama schools.
- The instruction related to reading for the students in both the treatment and control groups was delivered in the same manner.

Significance of the Study

The purpose of this study was to see if there is, in fact, any increase in fluency, vocabulary acquisition and comprehension for a group of students who were given twenty minutes per day of independent in-school reading time as compared to those who did not have independent reading time. Twenty minutes of independent reading is a substantial increase in the amount of time which typically was provided in previous studies examining this question. Studies by Nagy, Herman, and Anderson, (1985), Ozburn, (1995), and Coley (1983) incorporated only ten and fifteen minutes of independent reading each day. These and other studies examining relationships between independent reading in class and aspects of reading such as fluency and comprehension have been correlational in nature, and the few experimental studies on this topic have yielded mixed results (NRP, 2000) and no conclusive evidence of a causal relationship between independent reading and reading achievement.

This quasi-experimental study was undertaken to determine if its results could provide evidence that does or does not correspond to results of correlational studies showing positive relationships between studies reading volume and reading achievement. In addition, this study was conducted for practical reasons: i.e., to see

if its results may be used to support or rebuff the common practice of incorporating independent reading time such as Sustained Silent Reading (SSR) or Drop Everything and Read (DEAR) into the school day.

CHAPTER II.

REVIEW OF RELATED LITERATURE

“A room without books is like a body without a soul.”

Cicero (Ekwall, 2002, p. 57)

The first chapter provided a theoretical framework for this study and stated the purpose of the study, the research questions, the hypothesis, definition of terms, limitations and assumptions of the study, and an explanation of the purpose and significance of the study. Chapter two contains a review of relevant literature and research that addresses independent reading as it relates to vocabulary, fluency and comprehension.

A large vocabulary is essential to both learning to read and reading to learn (Chall, 1983). People with large vocabularies are more proficient readers and speakers than those with limited vocabularies (Meara, 1995), and an extensive vocabulary contributes to one's speed and expression in reading and the ability to understanding what has been read (Parry, 1991). A person's vocabulary is constantly updated with new words, consists almost exclusively of content words (nouns, verbs, adverbs and adjectives), and has a low degree of commonality across users (Craik, 1972).

The Matthew Effect

A student's vocabulary knowledge correlates highly to his or her ability to fluently read and comprehend text and achieve in school (Baumann, Kame'enui, & Ash, 2003). Vocabulary has been described as the bridge between the word-level processes of phonics and the cognitive processes of comprehension (Kamil & Hiebert, 2005). Keith Stanovich (1986) has adapted Walberg and Tsai's (1983) term Matthew Effect, the idea that the rich get richer and the poor get poorer, to the field of reading. Stanovich contends that the rich readers, those students with well-developed vocabularies have an advantage in reading due to their vocabulary abilities and are able to easily read more and, as a consequence learn more words. Meanwhile, the poor readers, those with limited vocabularies, have disadvantages in comprehending text because of their lack of word knowledge. In addition, they have more reading difficulties, read less often, and learn fewer words. Young students at risk of reading failure usually have weaker oral vocabularies than their peers and are more likely to have difficulty developing reading skills (Biemiller, 2003).

There are controversies about the most effective ways to expand vocabulary (Helgesen, 1997) and a variety of theoretical positions ranging from approaches based on Behavioral Theory that stress the direct instruction of decontextualized lists to naturalistic approaches grounded in Psycholinguistic Theory and Whole Language that stress implicit, indirect, and contextualized learning (Saragi, 1978).

Proponents of naturalistic approaches contend that it is not practical to consult lists of thousands of words in an attempt to select meaningful vocabulary to teach an individual directly. Instead, they insist that language users select from the spoken and written words

they encounter to discover and indirectly learn new words to derive their own unique vocabularies. One way to establish a large pool of language from which students can discover words and meanings is to increase their volume of reading (Davis, 1995). One of the strongest predictors of reading comprehension and vocabulary development is the amount of time students spend reading to themselves (Anderson, Wilson, & Fielding, 1988). A major reason for this powerful relationship is that books are much more likely to contain the vocabulary, text structures, and complex sentence structures that are characteristic of decontextualized language than spoken language (Cunningham & Stanovich, 1998).

For comprehension and learning to occur, a reader must understand approximately 85% of the words in the text (Nagy & Herman, 1987). Wide reading of texts in which students are challenged by some but not too many new words allows them to figure out word meanings from the contexts in which they occur (Nagy & Herman, 1987). Volume of reading affects the development of reading rate, fluency, vocabulary, general knowledge of the world, overall verbal ability, and general academic achievement (Cunningham & Stanovich, 1998). There are dramatic differences in the amount of voluntary reading that students do outside of the school setting. Estimates by Anderson, Wilson and Fielding (1988) suggest that fifth graders range from reading over two million words a year to fewer than eight thousand words a year, which can have a dramatic impact on their acquisition of vocabulary.

A large volume of reading allows the reader to see many words in authentic texts and provide many opportunities to develop understandings of word meanings and multiple meaning for many words. Texts, however, must be carefully selected to find the best

match to the student's reading ability or level. Students should read text that is not too hard and not too easy. Chall, Jacobs and Baldwin (1990) emphasize that challenging but comprehensible reading materials need to be part of students' daily reading routines. High interest, easy reading books with few, if any, unfamiliar words that are appropriate for building fluency are not likely to result in growth of academic language. Text factors such as the degree of contextual support (Beck, McKeown, & McCaslin, 1983), the number of repetitions of new words in the text, and the importance of the sentence containing the word to the story as a whole (Stahl, 1991) also influence how well a word is learned.

Nagy and Herman (1987) and Beck and McKeown (2001) pointed out that the amount of information that surrounds a word in text determines whether that word's meaning will be correctly deduced. Every time a word is repeated in the text, it usually appears in a slightly different context. This helps the learner develop a deeper and more accurate understanding of word meaning and fosters vocabulary acquisition (Ellis, 1995). The more the word is repeated, the more knowledge is gained about that word. Similarly, if the word is essential to the construction of major ideas from the passage, then the reader might exert more effort in determining the meaning of the word.

Importance of the sentence in which the new word appears may also affect learning from context in at least two ways (Stahl, 1991). First, readers may devote more attention to deriving a word whose meaning is important for understanding the important concepts in a story. Second, readers may get more elaborate information about a word located relatively high in the text structure. According to the Text Processing Models explained by Kintsch and Van Dijk, (1978), a word located in an idea relatively high in the text

structure part of an important idea will have more information from the passage that elaborates on that idea and thus on the word. Therefore, a person may learn more about words located in more important ideas, leading to more word learning.

Incidental versus Intentional Vocabulary Learning

Vocabulary learning can occur both intentionally and incidentally. Teachers should provide an environment in which students are exposed to rich language and explicit vocabulary instruction. Teachers play a big part in ensuring their students are learning not only enough words but also the most relevant types of words. Although many approaches to teaching and learning vocabulary have produced positive results, Beck and McKeown (1991) concluded that a single best technique of vocabulary practice has not been found.

Direct Instruction and Intentional Vocabulary Learning

Students learn many word meanings intentionally. Classroom teachers may require students to be able to learn a number of word meanings weekly. Direct instruction of vocabulary skills for students includes using teaching students to use dictionaries and reference sources, context clues, synonyms, antonyms, homophones, homographs, figurative language, and morphemic analysis.

Bos and Anders (1990) studied 61 junior high students learning science text using semantic mapping, feature analysis, and direct instruction of words as intentional learning procedure. Students in the interactive interventions scored higher than the definition learning group on reading comprehension tests.

While Sinatra, Berg and Dunn (1985), found that the use of two types of semantic maps resulted in enhanced reading comprehension scores, Bauman and Kame'enui (1991), found that students skilled on words for ten minutes were able to distinguish things as words or nonwords quicker than students trained for 3.3 minutes.

Baumann and Kame'enui, (1991), used what is called the keyword method of intentional vocabulary learning with effective results. In this method, students are taught to construct a visual image that connects with the definition of a word. This image enables the student to retrieve the definition easier because of its acoustic similarity. Mastropieri, Scruggs, and Fulk (1990) found that the keyword method was just as successful with abstract word meanings as concrete word meanings.

Incidental Learning

While direct instruction of vocabulary is an important element of instruction, incidental learning of vocabulary should not be neglected. Studies of incidental vocabulary acquisition have shown that learning through extensive reading is not only possible, but is almost certainly the means by which individuals acquire the majority of their vocabulary (Saragi, Nation, & Meister, 1978). Nagy and Herman (1987) suggested that the process of learning words from reading them in context may account for the majority of observed vocabulary growth children beyond the primary grades. Most of a person's word growth comes from incidental exposure to words in written and oral context, not through direct instruction of some sort. However, most individual incidental encounters with words in natural contexts are not likely to yield much useful information about word meaning. In a series of studies, Nagy and colleagues (1985 & 1987) found that children learn between 5% and 20% of previously unknown words from a single

exposure in context. In the course of everyday experiences with spoken and printed language, students are capable of learning more or less seven words each day.

Teachers should arrange to provide incidental word learning opportunities in the areas of listening, reading, discussing, and writing as often as possible. Teachers may be the most important factor in influencing a child's indirect word learning. Because teachers can and should play such an important role in advancing incidental word learning, it is important that they are familiar with ways in which they can promote it.

What are some strategies for promoting incidental word learning? In his book *The Vocabulary Book: Learning & Instruction*, Michael Graves offers four means by which vocabulary can be learned:

1. Listening – A teacher can greatly influence his or her students' vocabulary simply by paying attention to the vocabulary he or she uses in the classroom. Try speaking to a group of students about *illegible* rather than *sloppy* handwriting, or ask them to work *collaboratively* rather than *together*. The point is not teaching these words and their meanings but simply exposing students repeatedly to words that might be outside of their established vocabulary. Additionally, read-alouds with discussion, audio books, and story telling are effective practices.
2. Reading – Promoting wide reading is another powerful method of promoting incidental word learning. Hayes and Ahrens (1988) found that children's books contain about one third more rare words than even adult prime-time television shows. A well-stocked classroom library is critical to supporting students' independent reading both in school and at home. Additionally, children should be

enticed to read outside of class time. Teacher guidance during reading and student discussion of texts will also promote vocabulary growth.

3. Discussing- Talking with others can improve vocabulary. Not just any conversation will do, however. Hayes and Ahrens (1988) found that even college graduates do not use many sophisticated words. To be more effective, conversations should center on academic topics that students know something about and should contain the specialized vocabulary typical of those topics. Students should be provided opportunities to discuss the forces of motion during a science lesson using such words as *reciprocal* or to discuss how they will display the numerical data of an experiment they have conducted using words like *matrix*.
4. Writing – As students’ writing skills expand, they begin to center on the purpose of their audience. As a result, a more focused view of word choice emerges. Students should be encouraged to choose just the right word to convey the meaning they hope to communicate. The process of choosing and using words judiciously will help expand students’ vocabulary.

Combating the Dreaded Fourth Grade Slump

Some students may read adequately from kindergarten through third grade but suddenly begin to struggle when they reach fourth grade. This phenomenon has been referred to previously as the fourth grade slump and is a risk for socioeconomically disadvantaged students, with limited exposure to decontextualized language in text and trade books used at school. Jeanne Chall (1983) first coined the term and explained the factors behind the fourth grade slump.

According to Chall, (1983), there are two major stages of reading development. The first stage is characterized as a period where children are learning to read and the second stage as a period where the children are reading to learn. The first stage typically encompasses grades one, two and three, and the second stage encompasses grades four and beyond. Learning to read is a time when students are decoding words contained in simple texts that use familiar language. In fourth grade, texts become more complex and abstract language and concepts that are more challenging. Consequently, students' reading scores on standardized tests may take a big dip. In subsequent grades, as texts become more and more difficult and supply less and less contextual support, students may face what Chall and others have referred to as the eighth grade cliff and have even more difficulties reading texts at their grade levels.

According to Stanford University professor Michael Kamil as reported by Grosso de Leon, (2002), difficulty in text comprehension seems to be compounded by the fact that many upper-elementary grade teachers do not have substantial knowledge of how to teach reading in a way that helps students avoid falling into the fourth grade slump and confronting the eighth grade cliff. Evidence to support Kamil's statement came from the most recent results of the National Assessment of Educational Progress (NAEP) which confirmed that the majority of students in fourth grade struggle with reading and that the achievement gap between minority and disadvantaged students and their counterparts is still very prominent (NCES, 2007). In the state of Alabama, seventy-one percent of fourth graders and seventy-nine percent of eighth graders are not proficient readers (NCES, 2007). These statistics suggest that the fourth grade slump and the eighth grade

cliff identified by Chall in 1983 may still be realities to be reckoned with across the nation and in the state of Alabama.

In her investigation of the fourth grade slump, Chall (1983) found that vocabulary scores for students during the time they were in the fourth grade were the first to drop and that comprehension scores followed. She contended that contextual support for vocabulary within the fourth-grade level text was sufficient to compensate for word-meaning weaknesses in the beginning of the school year, but, as the text concepts and language became more complex, contextual support was no longer sufficient to sustain comprehension by the end of the school year. Chall and Jacobs (2003) pointed out that students in the early grades who seem proficient in narrative reading comprehension often have deficits in word meaning and word recognition skills that will likely suffer become apparent only later. Because of the developmental nature of reading, the later one waits to strengthen weaknesses, the more difficult it is for the children to cope with the increasing literacy demands in the upper elementary and middle grades (Chall & Jacobs, 2003).

So what can schools do to combat the dreaded fourth-grade slump? Chall and Jacobs (2003) suggested a focus on vocabulary to expand students' word knowledge along with emphasis on building fluency with automaticity instruction. By honing these skills, students can learn to identify words and their meanings instantly so their cognitive capacity can be used solely for comprehension of connected text. In addition, efforts to build background knowledge help students understand texts that may contain less familiar and less cohesive material (Pressley, Johnson, Symons, McGoldrick, & Kurita, 1989).

Reading teachers have a critical responsibility to ensure that their students leave the third grade prepared for the reading demands of the upper elementary grades. To help them achieve this goal, teachers must provide a steady application of explicit instruction in the five skill areas of phonemic awareness, phonics, fluency, vocabulary, and comprehension as outlined in the National Reading Panel Report (2000). The fourth-grade slump and the eighth-grade cliff can be avoided with a strong foundation of skills that support fluency, comprehension and vocabulary development in the primary grades and continued maintenance and development of these abilities throughout a child's school career.

Scientifically-based research reviews (Chard, Vaughn, & Tyler, 2002; Kuhn & Stahl, 2000; National Reading Panel, 2000) have established that reading fluency is a critical component of learning to read and that an effective reading program needs to include instruction in fluency. The National Assessment of Educational Progress (NAEP), for example, found that nearly half of American fourth graders had not achieved a minimal level of fluency in their reading, which was associated with significant difficulties in comprehension while reading silently (Pinnell, 1995).

Achieving the minimal level of fluency contributes to vocabulary growth in students. When students read with prosody and expression or are fluent, they do not have to labor over decoding words and are therefore able to focus on contextual clues that are significant in understanding word meanings. From the beginning we teach letters, phonics skills, etc. Eventually, that goes away and we quickly begin to work on word meanings, working with vocabulary, and building background knowledge. Therefore, when fluency is built, students can string words together so that they sound like spoken

language and, in turn, increase vocabulary through context. The next component is improving comprehension by teaching students to think about and engage in text. When students can engage in intellectual conversations about the text, incorporating the newly acquired vocabulary, then all of the pieces have fit together properly.

The ultimate goal of reading is comprehension. Scaffolding instruction and gradually releasing responsibility in ways of how to think about, interact with and engage in intellectual conversations about text is the aspiration of teachers of reading. According to Harvey and Goudvis (2000) in *Strategies That Work*, “teachers must be the chief learners in the classroom, spending a significant of time modeling their own learning showing students how they are thinking.” This support system is also known as scaffolded instruction because support or scaffolds are gradually removed as students demonstrate greater degrees of proficiency (Gambrell & Mazzoni, 1999) and are able to increase their volume of independent reading which then promotes higher levels of reading performance. Examples of research evidence supporting the link between higher volumes of reading and students higher reading achievement comes from Anderson, Wilson and Fielding (1988) who found that the number of books students read was the best predictor of reading comprehension, vocabulary, and fluency for second grades students.

Correlational Research

There are many other correlational studies in addition to the one conducted by Wilson and Fielding (1988) that have examined relationships between independent reading and students’ reading performance. Most of these correlational studies examined amounts of reading done in silent reading programs such as Sustained Silent Reading and found that

the students who read the most are the best readers and the students who read the least are the poor readers. In a correlational study done by Donahue, Voelkl, Campbell and Mazzeo (1999), for example, the researchers concluded that the more you read, the better your vocabulary, your knowledge of the world, and your ability to read.

Taylor, Frye, and Maruyuma (1990) found high correlations between the amount of independent reading time and student's reading achievement scores. Krashen (2002) indicated that several correlational studies he reviewed controlled for prior reading ability and they provided strong evidence that recreational reading is a cause for literacy development. Nagy, Herman, and Anderson, (1985), and Ozburn, (1995), on the other hand, incorporated only ten and fifteen minutes of independent reading each day and found no significant correlation between increase in independent reading time and reading achievement scores.

The results of these correlational studies are difficult to interpret because the directionality can go both ways. Researchers want to believe that the amount of reading in which a student engages makes those better readers, although they may already have this benefit. The problem with correlational studies is that they are correlational and they do not imply causation. That is, it could be if you read more, you will become a better reader, but it could also be that better readers just choose to read more. It is impossible to know from correlational studies. Experimental, empirical studies are needed to examine the effects that increased independent reading has on improving students' reading achievement.

Experimental Research

In one experimental study by Samuels and Wu (2003) third grade students who had limited vocabulary knowledge performed better on reading fluency passages after practicing the passages independently. Students also benefited better from shorter fifteen-minute sessions rather than longer forty-minute sessions. However, the older fifth grade students in the study, who had a more extensive vocabulary than the younger students, performed better on transfer passages where new words appeared, but not on the same passage where no new words appeared. The longer forty-minute session was more beneficial for the older students. Implications from this study include that the amount of time devoted to reading has a positive impact on reading achievement and that the amount of time assigned to independent reading should match the student's reading ability.

One study of Sustained Silent Reading (SSR) by Evans and Towner, (1975) compared the effect of SSR on reading achievement with that of having students complete various reading skills with worksheets. Reading gains were the same for both groups of second graders at the end of ten weeks. In a larger but similar study by Reutzel and Hollingsworth (1991), sixty-one fourth graders and fifty-three sixth graders were compared using similar worksheets for one month. Again there were no reading differences in the two groups.

Collins conducted an analysis in 1980 that studied the impact of SSR on the reading achievement of 220 students from ten classrooms in grades two through six. Students were randomly assigned to the experimental and control groups. The evaluation of the program took place after fifteen weeks. The second graders had ten to thirty minutes per

day; third graders had fifteen minutes per day, fourth graders, thirty minutes, and fifth and sixth graders, fifteen to twenty minutes each day. The control group worked on spelling during this time. The SSR led to no significant differences in vocabulary or comprehension as measured by various standardized tests. The SSR groups did appear to move slightly faster through their basal readers.

Langford and Allen (1983) analyzed the effect of SSR on reading attitudes of eleven fifth and sixth grade classrooms. The classrooms were randomly assigned to groups and resulted in 131 students in the SSR (treatment) group and one hundred nineteen in the control group. The control group had health class while the treatment group had SSR. The authors did not report the length of the intervention. There was an improvement in word reading for the SSR group, but no differences in reading attitude as a result of the intervention.

In a well-known study, Holt and O'Tuel (1989) assigned 211 seventh and eighth graders and their teachers to either the SSR group (treatment) or a regular reading instruction condition (control). Students in the SSR group read self-selected books and materials for twenty minutes each day three days per week and they included sustained silent writing for two additional twenty-minute periods each week. During this time, the control group worked on their regular reading instruction. After ten weeks, the students in the SSR groups had significantly greater growth in vocabulary knowledge than the control group. Reading comprehension did not improve for either group.

In a study conducted by Manning and Manning (1984), three varieties of SSR were included in the analysis. There were 415 students from 24 classrooms. They were assigned to four groups. Intact classes were randomly assigned. The treatment lasted for

an entire school year. Two of the interventions led to higher reading achievement and one did not. The pure SSR, matching recommended procedures, where students read an extra thirty-five minutes each day lead to no more reading growth than the control group. SSR paired with teacher conference or peer discussion had a significant improvement in reading.

The studies by Peak and Dewalt (1994) and Volland, Topping and Evans (1999) made attempts to prove that using Accelerated Reader (AR) would contribute to students' reading abilities. Both studies had serious problem in organization, one having no control group and the neither had well-matched groups. Both studies failed to find any improvements in reading gain scores among students at all.

None of the experimental studies reviewed measured the impact on students' fluency. Outcome measures in most of the studies were vocabulary and comprehension scores as indicators of reading achievement on standardized and informal tests. The results were not clear confirmations that SSR or AR promotes students reading achievement. The Langford and Allen study (1983) reported gains in word reading but they were so small they were questionable as to the educational significance. The Holt and O'Tuel (1989) study found significantly greater improvement in vocabulary for the SSR group, but did not transfer into gains in comprehension. According to the National Reading Report (2000), there is too little evidence to know whether or not SSR, AR, and other programs promoting independent reading work to improve students' vocabulary, fluency or comprehension. For the most part, these experimental studies found few if any gains in reading that could be attributed to encouraging students to do more reading.

The National Reading Panel (2000) states that there is just belief that teachers should strive to engage students in a variety of literacy activities that encourage voluntary reading. Even though the Panel found no studies showing relationships between independent reading and fluency, they acknowledged the commonly held belief that if students increase their voluntary reading, their reading achievement scores will increase as well. However, Panel members pointed out that, to the contrary, the research on independent reading has produced results that have made educators seriously question this well regarded belief.

Overview of the Study

The guiding purpose of this study was to determine if there is, in fact, any increase in fluency, vocabulary acquisition and comprehension for a group of students who are given a twenty-minute-per-day independent reading time as compared to those who do not have independent reading time. Twenty minutes of independent reading is a substantial increase in the amount of time which typically was provided in previous studies examining this question. Correlational studies by Nagy, Herman, and Anderson, (1985), and Ozburn, (1995), incorporated only ten and fifteen minutes of independent reading each day. These and other studies examining relationships between independent reading in class and aspects of reading such as fluency and comprehension have been correlational in nature and were reviewed above, and the few experimental studies on this topic have yielded mixed results (NRP, 2000) and no conclusive evidence of a causal relationship between independent reading and reading achievement. Therefore, this quasi-experimental study was undertaken to explore the possibility of causal links

between these two factors and to determine if twenty minutes of independent reading time per day may have an effect on students' reading achievement.

CHAPTER III.
METHODOLOGY

“A room without books is like a body without a soul.”

Cicero (Ekwall, 2002, p. 30)

Chapter one introduced the research problem and explained the purpose, the hypothesis, possible limitations, and assumptions of this study. Chapter two presented a review of relevant literature and research that addressed independent reading as it relates to vocabulary, fluency and comprehension. This chapter restates the research questions and null hypothesis, describes the experimental design, and explains the methods and procedures used in the study. Chapter three also includes a description of the measures used to collect and analyze the data.

Restatement of Research Questions and Hypotheses

The following research questions guided the study and are restated here:

1. To what extent is there a difference in pre-to-posttest gain scores of comprehension as measured by Degrees of Reading Power for fourth grade students who had twenty minutes of daily independent reading time and those students who did not have this amount of independent reading time each day?
2. To what extent is there a difference in pre-to-posttest gain scores for fluency as measured by the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency (DIBELS ORF) scores for fourth grade students who had twenty minutes

of independent reading time and those students who did not have this amount of independent reading time daily?

3. To what extent is there a difference in Peabody Picture Vocabulary pre-to-posttest gain scores for fourth grade students who had twenty minutes of independent reading time each day and those students who did not have independent reading time?
4. To what extent is there a difference in Accelerated Reader Word Count gain scores for fourth grade students who had twenty minutes of independent reading time daily and those students who did not have twenty minutes of independent reading time?

Null Hypotheses Restated

The following null hypotheses provided the foundation for statistical tests used to analyze the data resulting from this study:

H₀₁: There is no statistically significant difference in pre-to-posttest gain scores of comprehension as measured by Degrees of Reading Power for fourth grade students who had twenty minutes of daily independent reading time and those students who did not have this amount of independent reading time each day.

H₀₂: There is no statistically significant difference in pre-to-posttest gain scores for fluency as measured by the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency scores for fourth grade students who had twenty minutes of independent reading time and those students who did not have this amount of independent reading time daily.

H₀₃: There is no statistically significant difference in pretest scores for

fluency as measured by the Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency scores for fourth grade students who had twenty minutes of independent reading time and those students who did not have this amount of independent reading time daily.

H₀₄: There is no statistically significant difference in Peabody Picture Vocabulary pre-to-posttest gain scores for fourth grade students who had twenty minutes of independent reading time and those students who did not have independent reading time each day.

H₀₅: There is no statistically significant difference in Accelerated Reader Word Count gain scores for fourth grade students who had twenty minutes of independent reading time and those students who do not had twenty minutes of independent reading time daily.

Research Design

This was a quasi-experimental study with two groups where subjects were assigned to classes prior to the conducting of the study. The control group received forty-five minutes of daily study hall and the treatment group received twenty-five minutes of study hall and twenty minutes of structured daily independent reading time. The cumulative number of words and books read by students was tracked by Accelerated Reader's data base for books on which students take Accelerated Reader tests, and this data was used to estimate numbers of AR books and words read. Working with Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency (ORF), Peabody Picture Vocabulary Test (PPVT), and Degrees of Reading Power (DRP), the researcher used pretest data to establish baseline scores for fluency, vocabulary and comprehension.

Previously set-up, intact fourth grade classrooms were used in the study. The two groups were assumed to be heterogeneously set-up. The treatment group consisted of sixteen males, fourteen females, twenty-two white, and eight black students. Fifteen students came from each of two classrooms making a total of thirty treatment participants. The control group consisted of ten male, ten female, eleven white and nine black students. All twenty participants came from the same classroom. The poverty level ranges from 52% to 55% in these classrooms according to the school's free and reduced lunch report.

Both groups had a regular 90-minute reading class in the mornings with similar vocabulary, fluency and comprehension instruction supervised by the school reading specialist. The treatment group was supervised and focused on reading books with Accelerated Reader (AR) tests while the control groups' activities were very flexible and loosely monitored. During this twenty-minute time for independent reading, students in the treatment group read books of their choice and on their independent reading level silently and then took Accelerated Reader quizzes on the computer to check comprehension. This program kept a cumulative total of the amount of vocabulary words the student had been exposed to in the readings.

At the beginning of the school year, students whose data were used in the study took the Peabody Picture Vocabulary Test (PPVT), an individually administered assessment which measures vocabulary development from birth to ninety-nine years of age. In addition, the Dynamic Indicators of Early Basic Literacy Skills (DIBELS) Oral Reading Fluency (ORF) tests measured the number of words individual students read accurately per minute, and Degrees of Reading Power (DRP), a group-administered assessment

measured the ability to comprehend text and to use words correctly in context. DIBELS ORF and DRP were part of the school's normal, routine educational test battery, and the principal initiated administration of the PPVT with fourth graders at the beginning and end of the school year. Assessments were administered by the school reading coach. The researcher requested access to results from these instruments. Pretest data were collected in August and the end-of-year posttest was administered in May with alternate forms of these instruments. Pre-and posttests provided scores for both treatment and control groups to see if there were differences in their growth for vocabulary, fluency and comprehension.

The design was quasi-experimental because an independent variable was manipulated and its effect on measures was analyzed in the resultant data. The independent variable was in-school independent reading time and the dependent variables were scores on the measures of vocabulary, fluency, and comprehension described above. After forming the null hypothesis and setting up a research design with SPSS procedures for analysis, the researcher established a level of significance of 0.05 in order to eliminate the possibility of making Type I and/or Type II errors. A Type I error occurs when the null hypothesis is rejected and the null hypothesis is actually true. A Type II error occurs when the null hypothesis is not rejected and the null hypothesis is actually false.

The researcher was striving to achieve high internal and external validity for the design and statistical analysis of the quasi-experimental study. Internal and external validity should not to be confused with validity of assessment measures, which were standardized or criterion referenced measures with validity and reliability established and reported by developers and publishers. For the study as a whole, external validity refers

to the applicability of the findings, whereas internal validity refers to the strength and credibility of the quasi-experimental design. Some threats to internal validity include: maturation, regression, selection, mortality, instrumentation, and testing. Some threats to external validity include: unrepresentative sample, sensitization, Hawthorne effect, and multiple treatment effect.

Internal validity could be challenged by maturation due to changes in time. The standardized tests take into consideration the chronological age of the students and calculate the scores accordingly. There was a threat due to mortality rate. No students moved out of the school system. Since the same assessor gave all assessments, the instrumentation threat was not a problem. There were alternate forms of tests given as to eliminate the problem of a pretest effect and the possibility that students' performance might improve because they remembered the test items.

External validity is sometimes very hard to control when dealing with educational settings where the classrooms are already in existence. The samples were as representative as possible because students of all achievement levels were included in the sampling since all fourth graders were invited to participate in the study. Sensitization was controlled because alternate forms of the same standardized test were used in both pretest and posttest. Hawthorne Effect was controlled because the classes were unaware that an observation was taking place. Students had study hall in both the treatment and control groups as part of their instructional day, and they were not informed of differences between both groups. Assessments being used were part of their regular of tests administered in the school. There were no multiple treatments to guard against so that was not a threat to external validity.

The cumulative number of words and books read by students was tracked by Accelerated Reader (AR) data base for books on which students took AR tests, and these data were used to examine effects of numbers of books and words read. Working with DIBELS ORF, PPVT, and DRP, the researcher used pretest data to establish baseline scores for fluency, vocabulary and comprehension. By using SPSS, a computer program that calculates quantitative statistics, comparisons of pretest and post-test scores were made to determine if there were statistically significant differences in the control and treatment groups' performance on outcome measures. An independent samples *t*-test procedure was performed on the mean gain scores to test the null hypothesis in all the measures of vocabulary, fluency and comprehension.

The control group differed from the experimental group in only one factor, the independent variable, which was the twenty-minute independent reading time during the 45-minute study hall. There were four dependent variables. The four measures of the independent variable were pre-to post-test differences in DRP, DIBELS, PPVT, AR Word Count totals for the students in both groups from beginning to the end of the school year. There were 20 students and data points in the control group and 30 students and data points in the treatment group so there were sufficient points in each cell to satisfy assumptions for the analysis and detect moderate to high effect sizes that might be produced by the independent variable. Descriptive statistics for the mean, standard deviation, and standard error of the mean for the treatment group were calculated and Levene's Homogeneity of variance was used to determine if the treatment and control groups' data satisfied the requirement for equal variances.

Description of Setting and Sample

Setting

The participating school district was located in a rural area in east central Alabama. The school was located in a rural farming community. The school had an enrollment of approximately 812 students in grades K-12. The student population was approximately 92% Caucasian and 8% other ethnic backgrounds. Poverty level in the school ranged from 46% to 48% as indicated by the percentages of students who were eligible for food service at free or reduced fees. The sample of possible participants for this study was comprised of fifty nine students in fourth grade.

Sample

The sample of actual participants for this study consisted of 50 fourth graders who returned consent forms signed by parents or guardians to give permission for their test scores to be used as data in this study. The gender composition of the sample was 26 males and 24 females. Ethnicity for the study was 33 Caucasian students and 17 African-American students. No other ethnic groups were involved in the study. Participants were ten and eleven years old and were from homes in rural surroundings. Students' ability levels varied within each class. Classes were pre-assigned by the administration prior to the beginning of the school year.

Description of Instruments

Degrees of Reading Power (See Appendix C for Example)

The Degrees of Reading Power (DRP) Program is a series of standardized, criterion-referenced reading comprehension measures for first through twelfth grades. It has a reliability of $r=.95$ (Koslin, Zeno, & Koslin, 1987). Characteristic correlations of the

assessment with various reading comprehension tests are between .75 and .80 (TASA, 2000). The test is given in a multiple-choice, cloze format with a wide range of topics in expository passages. Parallel forms (K9 and J8) were available for this assessment and were used in this study as pretests and posttests.

Dynamic Indicators of Basic Early Literacy Skills Oral Reading Fluency (See Appendix D for example)

The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) are a series of standardized individual assessments that are designed to evaluate emergent and early readers' progress in phonemic awareness, phonics, vocabulary, fluency, and comprehension, (DIBELS, 2000-2007). DIBELS are administered to every public school students in Kindergarten through grade two in the state of Alabama. The DIBELS oral reading fluency (ORF) measure is a standardized set of reading passages with scripted administration procedures. Students are given one minute to read a passage. The administrator scores hesitations of more than three seconds, omitted words and word substitutions as errors. The number of correctly read words is calculated as the student's oral reading rate score. The minimal goal for reading success for spring of fourth grade is one hundred eighteen words per minute. The cut-off scores used to identify students needing intensive support in spring of fourth grade is below ninety-two words per minute. Correlation coefficients for the concurrent validity of the DIBELS ORF range from .91 to .96 (DIBELS, 2002). Correlation coefficients for the alternate form reliability of DIBELS ORF ranged from .89 to .96 (DIBELS, 2002).

Peabody Picture Vocabulary Test (See Appendix E for example)

The PPVT III is given to measure receptive vocabulary for Standard English and verbal ability. It is individually administered, norm-referenced, and available in two forms, IIIA and IIIB which were given as the pretest and posttest. There was no reading or writing required of students in taking the test. After the stimulus word was given, the subject simply pointed to the picture that corresponded to that word. The response was scored as either correct or incorrect. The Peabody Picture Vocabulary (PPVT) can be administered to individuals from ages two through ninety plus. Administration time was between ten and fifteen minutes depending on the student's abilities. There are two hundred four items in each form. Items are arranged in seventeen sets of twelve items each for more efficient and accurate determination of a basal level, the lowest set of items containing one or no errors, and ceiling level, the highest set of items administered containing eight or more errors sets as indicators of the individual's range in levels of performance.

The PPVT offers percentile, NCE, stanine, and age equivalent scores. It is a reliable measure with internal consistency rates of alpha from 0.92 to 0.95 (median) and split-half from 0.86 to 0.97 (median 0.94). The alternate form had an alpha of 0.88 to 0.96 (median 0.94) and a test-retest reliability of 0.91 to 0.94 (median 0.92). The PPVT is also valid with an average correlation of 0.69 with the OWLS Listening Comprehension scale and 0.74 with the OWLS Oral Expression scale. Its correlations with measures of verbal ability are 0.91 with WISC-III, 0.89 with KAIT Crystallized IQ, and 0.81 with K-BIT Vocabulary.

Accelerated Reader Word Summary Report (See Appendix F for example)

Accelerated Reader is a computer-based program that allows students and teachers to keep records of students' independent reading. Students, at the beginning of the school year, take the Standardized Test of Assessment of Reading (STAR). The STAR results are used to establish each student's Zone of Proximal Development (ZPD), which is the grade level range of books at the student's independent reading level. The STAR's correlation with Iowa Test of Basic Skills (ITBS) was 0.60 to 0.89. The ZPD range of levels coincides with the Accelerated Reading Levels listed on the books in the classrooms and in the school library. Students choose books at their appropriate reading levels and read them at their own pace. They then take a quiz on the computer that monitors their reading comprehension for the book. Students and teachers get immediate feedback on reading progress of each student. As soon as the test is finished, the student gets the correct answers for the questions missed. The program also keeps a cumulative record of vocabulary word count of words encountered in books on all tests passed.

Data Collection

The researcher obtained written permission from the Tallapoosa County School System in Dadeville, Alabama to collect data for this study. After finding teachers willing to have their classrooms included in the study, the researcher held a meeting with fifty-nine fourth graders at the school's open house, explained that their test scores were needed for a study of reading, and handed out consent forms to be taken home and signed by parents. The researcher secured permission for participation from parents or guardians of fifty students. Each signed form was assigned a number from one to thirty and one to twenty and entered into a random number generator and the list of randomly

generated numbers was printed for the treatment ($n=30$) and control ($n=20$) groups to get random numbers as identifiers for data in each group.

Pretest/Posttest

The school reading coach administered the DRP, DIBELS ORF, and PPVT in August beginning the school year and in May ending the school year as part of the usual battery of fourth grade assessments. Placement tests were also given in August for appropriate reading levels for Accelerated Reader books.

Each group consisted of an intact class in the selected school. The study examined results that were part of the everyday reading program. The treatment was not an intervention by the researcher. The treatment group came from two classes, each containing fifteen students, in which teachers opted to have twenty minutes of independent reading time each day during the 45-minute study hall period. The control students came from one classroom, containing twenty students, in which the teacher had a study hall with no independent reading time each day.

Teachers in all of three fourth grade classrooms used Accelerated Reader, a computer delivered software program that tracked the cumulative number of vocabulary words to which readers were exposed in self-selected children's books for which they took computer-administered tests that measured comprehension. Accelerated Reader tests were used to monitor the number of books read and how much information readers comprehended and remembered about the selection. Two fourth grade teachers incorporated twenty minutes of independent reading time into the study hall time each school day. During these twenty minutes, students self-selected AR books on their independent reading level and took AR test for those books. The independent reading

level was determined at the beginning of the year by using the STAR test to determine each student's ZPD. If time allowed, another book was selected and tested. The class was very structured and quiet. Only independent reading of AR books was allowed during this time. Classes in which the teachers used Accelerated Reader with twenty minutes of independent reading time were in the treatment group. The class in which the teacher used Accelerated Reader without the twenty minutes of independent reading constituted the control group. In the control group class, the teacher had study hall in which students completed homework and/or had tutoring on homework assignments each day without the independent reading time.

CHAPTER IV.

RESULTS

“Our process as nation can be no swifter than our progress in education.”

John F. Kennedy (Ekwall, 2002, p. 23)

The previous three chapters of this research report offered an overview of the research problem, an explanation of the purpose and significance of the study, a review of research and literature related to independent reading and its relevance to vocabulary, fluency, and comprehension, a description of the methodology and research design, and the results tests of the null hypothesis related to the research questions in this study. This chapter reports the analysis of the data.

Pre- and posttest data for the treatment and control groups are displayed in Table 1. The null hypothesis for outcomes on dependent variables was tested at the .05 level of significance using independent sample *t*-test as well as an Analysis of Covariance. Results addressing each of the five research questions for this study are reported below.

Table 1.

Pre- and Posttest Scores for Treatment (N=30) and Control (N=20) Groups

	<i>Mean</i>		<i>SD</i>		<i>Minimum</i>		<i>Maximum</i>		<i>Gains</i>
	<i>Pretest</i>	<i>Posttest</i>	<i>Pretest</i>	<i>Posttest</i>	<i>Pretest</i>	<i>Posttest</i>	<i>Pretest</i>	<i>Posttest</i>	
<i>Degrees of Reading Power:</i>									
Treatment	54.27	67.63	19.45	22.44	18.00	26.00	96.00	100.00	13.36
Control	44.15	62.05	15.25	18.87	18.00	30.00	75.00	88.00	17.9
<i>Oral Reading Fluency:</i>									
Treatment	98.37	130.90	38.85	41.66	27.00	49.00	214.00	227.00	32.53
Control	142.80	146.85	42.25	34.75	52.00	63.00	211.00	188.00	4.05
<i>PPVT:</i>									
Treatment	43.59	57.93	19.72	20.62	2.00	23.00	89.00	99.00	14.34
Control	33.65	45.05	14.65	16.97	9.00	25.00	61.00	96.00	11.4

1. The measure used for comprehension was Degrees of Reading Power (DRP). In answering the question: To what extent is there a difference in pre-and posttest gain scores of comprehension as measured by Degrees of Reading Power for fourth grade students who had twenty minutes of daily independent reading time and those students who did not have this amount of independent time each day? The Levene's Test for homogeneity of variance indicated that the group variances were equal ($p=.11$).

Therefore, the null hypothesis of equal variances was retained. The mean gain scores for

the treatment group were 13.37 and 16.42 for the control group. The Standard Deviation for the treatment group was 14.05, while the control group was 16.42. The *t*-test indicated no statistically significant differences between Group 1 (treatment group) and Group 2 (control group) $t_{(48)} = -1.045, p = .30$; consequently, the null hypothesis of no difference between the two groups on Degrees of Reading Power was retained.

2. The instrument used for measuring fluency was Dynamic Indicators of Early Literacy Skills Oral Reading Fluency (DIBELS ORF). A *t*-test was used to answer the research question: To what extent is there a difference a difference in pre-to posttest gain scores for fluency as measured by the DIBELS ORF scores for fourth grade students who had twenty minutes of independent reading time and those students who did not have this amount of independent reading time daily? The Levene's Test for homogeneity of variance indicated that the group variances were not equal. Therefore, the null hypothesis of equal variances was rejected. The mean gain score for the treatment group was 32.53 and for the control it was 4.05. The Standard Deviation for the treatment group was 14.18, while the control group was 27.11. The *t*-test indicated statistically significant differences between the treatment group and the control group, $t_{(26)} = 4.32, p < .0001$ on ORF gain scores; consequently the null hypothesis of no difference between the two groups was rejected.

3. The instrument used to measure vocabulary was the Peabody Picture Vocabulary Test (PPVT). A *t*-test was also used to answer the research question: To what extent is there a difference in Peabody Picture Vocabulary pre-to-posttest gain scores for fourth grade students who had twenty minutes of independent reading time and those students who did not have independent reading time each day? The mean gain score for the

treatment group was 13.83 and for the control group it was 11.40. The standard deviation for the treatment group was 14.75 while the control group's standard deviation was 13.48. The Levene's Test for homogeneity of variance indicated that the group variances were equal ($p=.49$). Therefore, the null hypothesis of equal variances was retained. The t -test indicated no statistically significant difference between the treatment group and the control group, $t_{(48)}=.59$, $p=.56$; consequently, the null hypothesis of no difference between the two groups on the PPVT was retained.

4. The instrument used to measure exposure to words read was the Accelerated Reader Word Count. A t -test was used to answer the research question: To what extent is there a difference in Accelerated Reader Word Count gain scores for fourth grade students who had twenty minutes of independent reading time and those students who did not have twenty minutes of independent reading time daily? The mean gain score for the treatment group was 145,358.93 and for the control group it was 6,212.40. The standard deviation for the treatment group was 254,224.03 and for the control group it was 5,596.83. The Levene's test for homogeneity of variance indicated that the group variances were not equal. Therefore the null hypothesis for equal variances was rejected. The gain scores were robust to violations of assumptions such as normality. Therefore the t -test was run for analysis even though the variances were not equal. The t -test indicated statistically significant differences between the treatment group and the control group ($t_{(48)}=2.44$, $p<.0001$). Consequently, the null hypothesis of no difference between the two groups was rejected.

The analyses of data addressing each of the research questions above indicated that statistically significant differences in results for the treatment and control groups were

found only for the DIBELS ORF scores. This outcome prompted a closer examination of the ORF scores which revealed statistically significant differences between the treatment and control groups on the pretests as well as the posttests. A *t*-test was used as a post-hoc analysis to answer the following question: To what extent is there a difference in DIBELS ORF pretest scores for fourth grade students who had twenty minutes of independent reading time and those students who did not have twenty minutes of independent reading time daily? The mean score for the treatment group was 98.37 and for the control group was 142.80. The standard deviation for the treatment group was 38.85 and for the control group it was 42.25. The Levene's Test for homogeneity of variance indicated that the group variances were equal ($p=.49$). Therefore, the null hypothesis of equal variances was retained. The *t*-test indicated a significant difference between the two groups ($t_{(48)} = -3.83$) hypothesis of no difference between the two groups on ORF was rejected.

CHAPTER V.

DISCUSSION

“To read without reflecting is like eating without digesting.”

Edmund Burke (Ekwall, 2002, p. 18)

The first four chapters of this dissertation presented the research problem, purpose and significance of the study, reviewed the professional and research literature on the relationship between independent reading and vocabulary, fluency and comprehension, and described the experimental design, methodology and results. This chapter is devoted to a discussion of the results and what they do and do not contribute to the research and knowledge base related to effects of independent reading on vocabulary acquisition, fluency, and comprehension. This chapter also includes practical discussions of educational implications based on results and how they may be used to inform decisions about making independent reading part of the school day.

In the areas of comprehension and vocabulary the *t*-tests indicated no statistically significant differences between the treatment and control groups. Consequently, the null hypothesis was not rejected in either of the cases. Results indicated that the incorporation of twenty minutes of independent reading made no difference in fourth grade students' comprehension or vocabulary acquisition. In the areas of fluency, however, analysis of data produced results showing very large and statistically significant differences between the treatment and control groups. These results indicated that fourth graders who

received twenty minutes of independent reading daily made significantly greater gains in the number of words per minute read accurately than their peers who did not have twenty minutes of independent reading time.

On average, the Accelerated Reader Word Count difference was statistically significant between the treatment and control group. The AR Word Count was greater for the treatment group than the control group. Results of this finding indicate that fourth graders receiving twenty minutes of independent reading daily read significantly more AR books and encountered significantly more vocabulary words. These results seem to indicate that twenty minutes devoted to independent reading gives students a greater opportunity for incidental learning and perhaps for building fluency as compared to those not receiving the independent reading time.

Further analysis of the DIBELS ORF data for fluency, however, showed that there were statistically significant differences between the treatment and control groups on the pretest as well as the posttest. The control group was already at or above the end-of-year benchmark score of 118 at the beginning of the study. Their mean score on the pretest was 142.80. These scores indicate that the control group was performing at very high levels and had little or no room for growth in oral reading fluency during the study. This is known as the ceiling effect. The reason for these exceptionally high pretest scores for DIBELS ORF on the part of the control group is unknown. The researcher's assumption was that the classes were heterogeneously grouped before school began, but this is not the case for oral reading fluency as measured by DIBELS ORF. Comprehension and vocabulary gain scores do not reflect the same performance which may suggest that the students in the control group were reading primarily for speed. The students in the

control group may have been acting on the premise that the goal of reading is to accurately read as many words as possible in one minute instead of being able to comprehend text and ponder unfamiliar vocabulary in order to learn new words. For whatever reason, the control group read significantly faster and produced more words per minute than the treatment group both when the study began and as it was being conducted.

Discussion of Findings and Recommendations

The results of this study do not support the existence of causal relationships between 20 minutes of independent reading and gains in learning outcomes such as comprehension, fluency, and vocabulary. These findings, however, do provide evidence that including independent reading time in a study hall setting exposed students to significantly more vocabulary words in Accelerated Reader books than having study hall alone. Although the study did not yield statistically significant findings in the areas of vocabulary and comprehension, students who had the twenty minutes for independent reading at school became more fluent readers. In addition, they had exposure to a much larger quantity of words, which may give them many opportunities for establishing words and meanings in their reading vocabulary and, therefore, a jumpstart for comprehending what they read. These results are encouraging and suggest that teachers should consider incorporating independent reading into their instructional day and assess the effects on students' reading comprehension, fluency, and vocabulary.

There were several misalignments between materials and instruments used in this study that may explain why the outcomes did not produce statistically significant results between the treatment and control groups in the areas of vocabulary and comprehension.

The measures chosen to demonstrate the relationship between independent reading and vocabulary and comprehension may not have been sensitive enough to assess these skills. The PPVT and the DRP measured vocabulary and comprehension of various words and ideas that did not pertain to the words and ideas that the students were exposed to in the AR books they read in their twenty minutes of independent reading. The DRP measures expository texts whereas the AR measures both expository and narrative texts. The vocabulary in the PPVT is not commonly encountered in AR books. Results may have been different had the measures actually been indicative of the words and concepts students were exposed to in the AR books they read.

Limitations of Study

In addition to the problems with alignment for materials and instruments and statistically significant differences between the treatment and control groups' performance on oral reading fluency on the pretest as well as the posttest, other factors such as those in the bulleted items below also limited the scope of the study and the potential to generalize its results to other students, classes, and schools.

- Students were of similar economic and social background so results may not be generalized to other students with different economic status and background.
- The teachers volunteered to be in either the treatment or control group; therefore, differences in motivation as well as in inconsistency for instructional delivery could have occurred.

- Random assignment of students to treatment and control conditions was not possible. Therefore, this study was not a true experimental design, and any results indicating possible causal relationships between the treatment (independent reading time) and the outcome measures (vocabulary, fluency, and comprehension) must be interpreted cautiously and may not be generalized to other students in other schools and circumstances.
- The students who were in the control group had access to textbooks and Accelerated Reader books and were able to read independently if they desired. The researcher was not in control of this factor and had no method for accurately measuring the total amount of reading actually done by the students in either the treatment or control group.
- Samuels (2006) argued that DIBELS ORF does not measure fluency accurately because it (fluency) involves decoding and comprehending text at the same time. DIBELS focuses only on speed and those students who are reading at a slower more careful rate for meaning may produce a lower fluency score and be misinterpreted as having poor fluency. Likewise, readers get misidentified as good readers when, in fact, they are not.

Need for Further Research

Participants in this study were limited to fourth graders. It is possible that students in other grades may have different results and outcomes for independent reading. Further studies encompassing more grades will add to the current knowledge base in the field of reading education.

This study also used quantitative measures only. Further studies could include the incorporation of a daily writing in response to reading element that would extend the results and provide deeper understandings of the reading and thinking skills and strategies acquired.

Further studies with more sensitive measures and more similar performance on all pretests could also have greater potential for producing statistically significant results. Measures with questions and/or words that relate specifically to what was actually read would be a more accurate measure of vocabulary and comprehension.

Educational Implications and Recommendations

In spite of the limitations of this study and the additional research questions that need to be addressed about effects of independent reading, the results of this study indicated that independent reading had a positive influence on the treatment group students' oral reading fluency as measured from pre- to posttest and the amount of AR books read and number of words encountered. The findings of this study provide evidence that supports the incorporation of daily independent reading as a productive alternative to having only a traditional study hall, especially if the teacher's goal is to increase students' oral reading speed and accuracy and perhaps other aspects of oral and silent reading fluency such as prosody and expression.

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APPENDIX A

LETTER FROM SUPERINTENDENT OF TALLAPOOSA COUNTY SCHOOL

SYSTEM GRANTING PERMISSION TO

CONDUCT RESEARCH

Tallapoosa County Board of Education
125 North Broadnax Street
Room 113
Dadeville, AL 36953
256-825-1020
geast@tallapoosak12.org

August 8, 2006

After reviewing the proposed study, "Effects of Independent Reading on Fourth Graders' Vocabulary, Fluency, and Comprehension", presented by Cathy Harris Williams, a doctoral student at Auburn University, I have granted permission for the study to be conducted at Horseshoe Bend School, Tallapoosa County, Alabama.

The purpose of the study is to determine if increasing the amount of independent reading among fourth graders has an impact on students' vocabulary, fluency and/or comprehension abilities. Only the students in the fourth grade are eligible to participate in the study.

I understand that the 45 minutes of independent reading time will occur during the end of the day study hall period each day for the length of the study. I expect this project will end in May of 2007. Mrs. Williams will recruit our students and will collect and use existing data at Horseshoe Bend School, Tallapoosa County, Alabama.

I understand that Mrs. Williams will receive parental/guardian consent for all participants and have confirmed that she has the cooperation of the classroom teachers and principal at the school. Mrs. Williams has agreed to provide my office a copy of all consent documents and agrees that all gathered information will be kept confidential and will be *stored in a locked filing cabinet* until the completion of the study, when it will be destroyed. Mrs. Williams has also agreed to provide us a copy of the results from the study.

Sincerely,



Ginger Moran East,
Superintendent,
Tallapoosa County Schools

APPENDIX B
INFORMED CONSENT LETTER TO PARTICIPATE IN
RESEARCH TO PARENTS/GUARDIANS OF
PROSPECTIVE STUDENT
PARTICIPANTS

AUBURN UNIVERSITY

Auburn University, Alabama 36849-5212

Curriculum and Teaching
College of Education
5040 Haley Center

Telephone: (334) 844-4434
FAX: (334) 844-6789

Informed Consent Form

"Effects of Independent Reading on Vocabulary, Fluency and Comprehension."

Your child is invited to participate in a study conducted by Cathy Ragsdale, doctoral student at Auburn University who is working under the supervision of Dr. Edna Brabham, associate professor of Reading Education. Your child's classroom was selected as one of three that will be in the study because his/her teacher and principal are interested in helping researchers investigate effects of independent reading on students' growth in vocabulary, speed and accuracy of reading (fluency), and understanding of what they read (comprehension).

Your child's teacher gives him/her 45 minutes of study hall time each day. In some classes, the study hall time includes 20 minutes of independent reading time. During this time, students read books silently, listen to books being read by the teacher, and take Accelerated Reader exams on the computer. If your child is allowed to participate in this study, his/her scores for fluency, vocabulary and comprehension that the school collected in the fall and will collect at the end of the year will be recorded anonymously and used to see if the 20 minutes of independent reading during study hall produces significant differences in beginning-to-end-of-year performance on tests of vocabulary, fluency, and comprehension in reading.

The activities involved in this study are normal educational practices that require no out-of-the-ordinary risks to your child's health or safety. If you or your child refuses to participate for any reason, we simply will not include information collected by the school about your child in our study. Your decision about participation will not affect the normal school activities already experienced by your child or influence their instruction or grades in any way.

You may contact Cathy Ragsdale at (256) 825-8182 or Dr. Edna Brabham at (334) 844-6793 to ask questions about the project or request a summary of results. You may also call Auburn University's Office of Human Subjects, (334) 844-5966, for information regarding rights of participants in the study. Please sign and return the bottom of this sheet to your child's classroom teacher if you consent to your child's participation in this study and keep the information above for your records.

I freely and voluntarily give consent for my child, _____, to participate in the research project on "Effects of Independent Reading on Vocabulary, Fluency and Comprehension." I understand that I have the right to answers for any questions or concerns I have about the study and that I may contact Cathy Ragsdale at (256) 825-8182 for information. I understand that this consent may be withdrawn at any time and that my child may refuse to participate in any and we will simply not include information collected by the school about your child in our study.

Signature of Parent of Guardian _____ Date: _____

Signature of Student _____ Date: _____

HUMAN SUBJECTS
OFFICE OF RESEARCH
PROJECT # 07-001EP 0703
APPROVED 3/24/07 TO 3/30/08

APPENDIX C
EXAMPLE OF DEGREES OF READING POWER
ASSESSMENT



Many trucks move on the roads of America. They carry things people need. They carry things people want. Trucks carry food. They carry flowers. They carry logs. Trucks even carry houses. The _____ **1** _____ is a long one. There are many kinds of trucks. Each one carries certain kinds of things.

- 1** a) street b) list
c) bridge d) climb
e) border

Some trucks look like boxes. They are closed on all sides. Rain cannot get in. The freight is _____ **2** _____. These trucks carry clothes. They carry paper. They carry goods that must stay dry.

- 2** a) sold b) weighed
c) delayed d) scattered
e) protected

Some trucks carry animals. The sides are made of boards. There are spaces between the boards. Air can get in. The animals can _____ **3** _____. These trucks carry cows. They carry pigs. They carry chickens too.

- 3** a) wait b) breathe
c) work d) perform
e) stretch

Some trucks are just platforms on wheels. They haul heavy loads. Some carry steel. Others carry logs. The load is held down by chains. Logging trucks also have posts on the sides. The logs do not _____ **4** _____. They stay in place.

- 4** a) roll b) burn
c) show d) float
e) matter

Other trucks are giant tanks. They carry things that pour. Some carry milk. Others carry water. Still others carry oil.

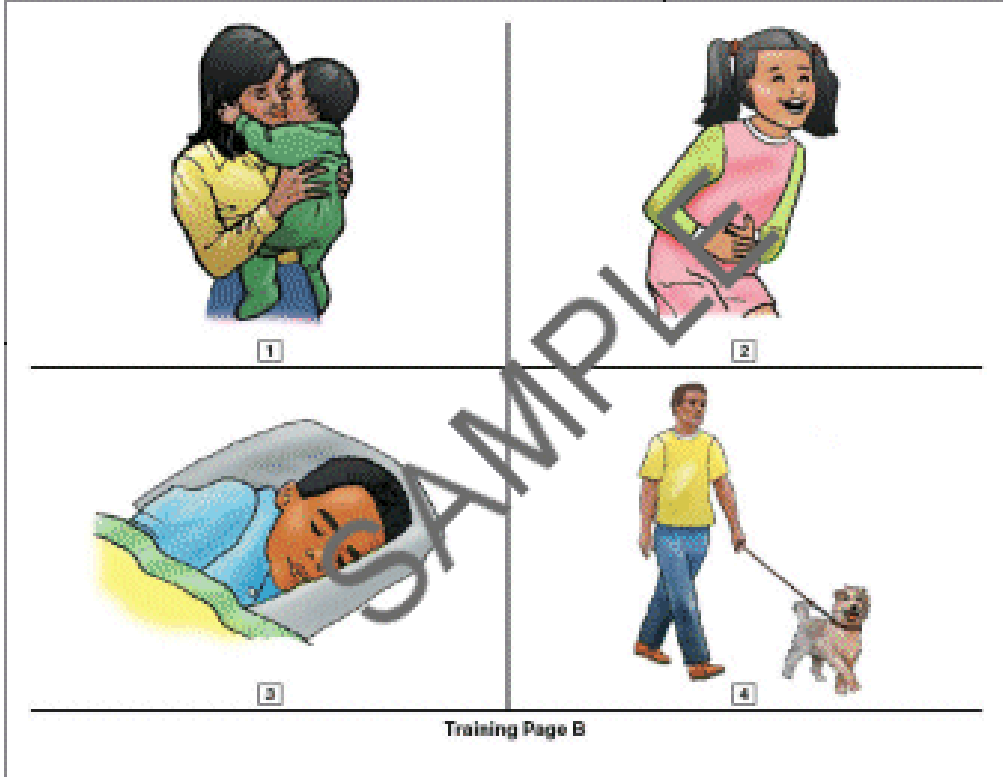
APPENDIX D
EXAMPLE OF FOURTH GRADE DYNAMIC INDICATORS
OF BASIC EARLY LITERACY SKILLS ORAL
READING FLUENCY
PASSAGE

4th Grade DIBELS Oral Reading Fluency

Hurricanes

What is big and dangerous and has only one eye? The answer	12
is a hurricane! Hurricanes are large, strong storms. They form over warm	24
ocean waters. Hurricanes usually begin as a small cluster of	34
storms. Heat and moisture from ocean water fuel the storms and	45
cause them to grow. As they grow, the storms begin to spin. This	58
spinning mass is called a tropical storm. When winds reach a	69
constant speed of seventy-four miles per hour, the storm	79
becomes a hurricane. At the center of a hurricane is an area called the eye. It	95
usually measures twenty to thirty miles in diameter. The eye is	106
relatively calm and free of clouds. The area around the eye is	118
called the eye wall. That is where the most violent weather	129
occurs. Wind speeds in the eye wall can be over one hundred	141
miles per hour or more!	146
In the United States, hurricane season lasts from June	155
through November. During this time, scientists keep a close eye	165
on the tropics. They watch for a building storm. Then they track	177
its movement on weather maps. This helps them figure out	187
where the storm might go next. People living in coastal areas	198
need plenty of warning if a hurricane is approaching. Scientists	208
issue a hurricane watch when there is a chance a hurricane will	220
reach land. They issue a hurricane warning when the threat	230
becomes real.	232

APPENDIX E
EXAMPLE OF PEABODY PICTURE
VOCABULARY TEST



Say, "Touch the picture that shows - asleep."

APPENDIX F
EXAMPLE OF ACCELERATED READER
WORD COUNT
LIST

Word Count Report

Accelerated Reader®: Thursday, 05/03/07, 07:43 AM

Report Period: 8/7/2006 - 5/3/2007 School year start date to today

Class: [REDACTED]

Teacher: Ms. [REDACTED]

Name	RP Quizzes Passed/Taken	RP Passed Word Count	Other Quizzes Passed/Taken	Other Passed Word Count	Total Word Count
Allen, Antoni	2/2	1,003	0/0	0	1,003
Dallas, Jonathan	6/6	16,892	0/0	0	16,892
Black, Isadorion	4/9	3,928	0/0	0	3,928
Caldwell, Jannous	0/0	0	0/0	0	0
Cross, Thomas	9/13	4,218	0/0	0	4,218
Fennell, Bonny	2/2	1,068	0/0	0	1,068
Gialotto, Chetonia	3/3	2,149	0/0	0	2,149
Greathouse, DeAnna	2/5	969	0/0	0	969
Harris, Izomine	7/10	3,209	0/0	0	3,209
Hart, Tyrell	1/1	1,592	0/0	0	1,592
Hayden, DeMida	8/8	27,415	0/0	0	27,415
Hicks, Roger	8/8	7,115	0/0	0	7,115
Holloman, Ellic	0/2	0	0/0	0	0
Hutcherson, Erin	3/4	3,614	0/0	0	3,614
Johnson, Shania	2/2	3,891	0/0	0	3,891
Lewis, Donnel	0/0	0	0/0	0	0
Murphy, Kaitia	1/1	234	0/0	0	234
Nelson, Dennis	3/5	1,639	0/0	0	1,639
Pawa, Jarion	1/2	1,190	0/0	0	1,190
Taylor, Tatiola	0/0	0	0/0	0	0
Thomas, Kevonta	0/0	0	0/0	0	0
Webb, InQuishous	5/7	4,637	0/0	0	4,637
Willerson, Loniah	0/0	0	0/0	0	0
Class Totals	67/90	84,763	0/0	0	84,763