DEVELOPING ORAL READING FLUENCY:

EFFECTS OF DAILY USE OF WORD WALLS AND DAILY INDEPENDENT

SILENT READING ON ORAL READING FLUENCY DEVELOPMENT

OF SECOND GRADE STUDENTS

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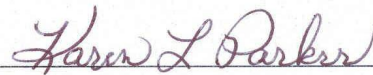
by

Douglas F. Osborn

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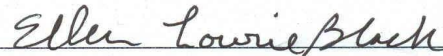
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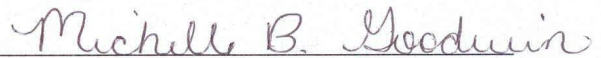Douglas F. Osborn

APPROVED:

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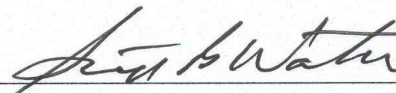
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(Mount Saint Vincent University)

ASSOCIATE DEAN, GRADUATE STUDIES

Scott B. Watson, Ph.D.

ABSTRACT

The researcher measured the effectiveness of two popular supplemental reading instruction strategies, word walls and independent silent reading, in 6 second-grade classes over 12 weeks. The study involved the comparison of eight oral reading fluency growth measures (Rate, Accuracy, Fluency, Comprehension, Oral Reading Quotient-- overall oral reading ability, Sight Word Efficiency, Phonemic Decoding Efficiency, and Total Word Reading Efficiency). The researcher used the individually administered Gray Oral Reading Tests (fourth edition) and the Test of Word Reading Efficiency in a pretest-intervention-posttest experimental design to obtain these measures. Although pretest and posttest comparisons of the standard scores and percentile ranks revealed no statistically significant effects for either intervention group when compared to the Control group, actual gain score grade equivalency comparisons to the anticipated gains of 3 months were statistically significant for all three groups for almost every measure. The researcher concluded that although the daily use of Word Walls and the daily use of Independent Silent Reading both appear to be effective reading instruction strategies for second grade students, other reading instruction strategies (employed by the Control group) appear to be comparably effective. All three groups experienced a remarkable gain in overall oral reading ability according to the GORT-4 Oral Reading Quotient measure. This dramatic gain over the beginning three months of second grade suggests this period may be a crucial phase of reading fluency development.

ACKNOWLEDGEMENTS

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CHAPTER ONE

Introduction

When confronted with the question, "How did you learn to read?" most students

and adults cannot recall the long, complex training process that enabled them to develop

this basic yet essential skill. For many students, by the end of third grade, the activity of

reading has become an automatic process like breathing, walking, or speaking. The

continuing challenge for reading researchers is to determine how children learn to read.

A comprehensive summary of current research on early reading strategies produced by

the Ontario Ministry of Education in 2003 concluded that while the development of oral

language is a natural process, learning to read is not. They noted that for children, the

critical window of opportunity for learning to read lies between the ages of four and

seven (Early Reading Expert Panel, 2003). Students who successfully learn to read

during these early years of schooling generally do well in future schooling, while students

who struggle with reading in first through third grades are at a serious disadvantage often

for the rest of their schooling experience (Early Reading Expert Panel, 2003; Center for

the Improvement of Early Reading Achievement, 2003).

The urgent need to help children achieve success in reading fluency by grade

three has spawned numerous approaches to reading instruction and a variety of reading

instruction techniques and programs over the past several decades. An examination of

current reading research by National Reading Panel resulted in a Report (2000a) that

validated the usefulness of some approaches to reading instruction (i.e. phonemic

awareness and phonics) while it called into question the effectiveness of some other

popular reading instruction strategies (i.e. independent silent reading). The meteoric rise

in popularity of using a word wall to assist reading instruction has also spawned a need

for research to validate its effectiveness.

This research study examined two popular and widely used primary reading

instructional strategies. Over 12-weeks, the researcher measured and compared to a

Control group the effects of the daily use of a high frequency/chunking word wall and the

effects of daily independent silent reading on second grade students reading fluency

development. This chapter presents the background of the study, its significance, the

statement of the problem and key research questions, the null hypotheses, the

professional significance of this study, and a brief overview of the methodology used.

The chapter concludes by noting the delimitations of the study and defining some of the

key terms used.

General Background

For the past couple of decades, it has become a national concern that students

were completing school without the basic essential skills of reading, writing, and

arithmetic. In 1992, the National Assessment of Educational Progress (NAEP) undertook

the task of measuring elementary students' oral reading on a large scale. Measures of oral

reading fluency taken from a representative sample of fourth-grade students throughout

the United States revealed an alarming reality that only fifty-five percent of fourth

graders qualified as fluent readers (Pinnell et al., 1995). In 1997, the United States

Congress asked the Director of the National Institute of Child Health and Human

Development (NICHD) in consultation with the Secretary of Education to organize a

national panel to assess the status of research-based knowledge, including the

effectiveness of various approaches to teaching children to read (National Reading Panel, 2000a). In addition, the panel was to suggest how this reading instruction research could improve reading instruction in schools, and what recommendations it could make for further research in this area. The National Reading Panel published its landmark report in 2000. Their meta-analysis of research included five key areas deemed important in reading instruction: Alphabetics (phonics and phonemic awareness), Fluency, Comprehension, Teacher Education and Reading Instruction, and Computer Technology and Reading Instruction. This report resulted in the publication of *Putting Reading First* (Center for the Improvement of Early Reading Achievement, 2003); a booklet designed to explain to teachers how to put this reading instruction research into practice. A report entitled, *Early Reading Strategy: The Report of the Expert Panel on Early Reading in Ontario*, was also published by the Ontario Ministry of Education in the same year. All three documents highlighted the importance of developing reading fluency in primary age students. These studies have prompted new research and interest into how students develop reading fluency.

Helping students become fluent readers is a central goal of early reading instruction (Early Reading Expert Panel, 2003; Center for the Improvement of Early Reading Achievement, 2003; Richards, 2000; Rasinski, 2004). Students who do not develop reading fluency by third grade normally struggle with reading throughout their lives (National Reading Panel, 2000a; Osborn, Lehr, & Hiebert, 2003). Much research and numerous reading theories have focused on explaining how children learn to read (Stanovich, 2000; Kuhn & Stahl, 2003; Ritchey, 2004; Early Reading Expert Panel, 2003; Center for the Improvement of Early Reading Achievement, 2003; National Reading

Panel, 2000a), yet there continues to be a debate amongst parents, teachers, school

systems, and reading researchers over which types of early reading instruction are most

effective (Burton, 1995; Cameron, 1997; Sporleder, 1998). Some reading researchers

now advocate a balanced reading program that incorporates a number of reading

instructional strategies formerly considered to be at odds with one another (Dahl &

Scharer, 2000; Cunningham & Allington, 1999; Thomas, 2000; Early Reading Expert

Panel, 2003; Center for the Improvement of Early Reading Achievement, 2003). In

addition to reading instruction that focuses on phonemic awareness, phonics, accurate

word decoding skills, vocabulary development, automatic processing, and

comprehension, reading instruction that builds a child's reading fluency is now

considered by some reading researchers to be an important but neglected element of a

balanced reading program (Rasinski, 2004; Osborn, Lehr, & Hiebert, 2003; Samuels,

2002; National Reading Panel, 2000a).

The development of reading skills through the use of high-frequency/chunking

word walls and regular times of independent silent reading are two reading instruction

strategies used by some elementary teachers as part of an overall reading program. It

seems reasonable that these strategies may contribute to the development of reading

fluency in early readers. The following paragraphs briefly outline the rationale and

recent research regarding each of these reading instruction strategies.

A common belief among some reading teachers and researchers is if students read

more, they become better readers (Stanovich, 1986; Pilgreen, 2000; Krashen, 2001, 2004,

2005). Some reading teachers have allocated limited classroom time for independent

silent reading because they believe that it is an effective and efficient way to develop

reading fluency in their students (Wray & Lewis, 1993). A number of initiatives and programs that encourage children to read more books have resulted from this belief. It is intuitively appealing to believe that the best way to develop reading fluency is to give students class time to engage in personal reading and to encourage personal reading outside of the classroom. Over the past several decades, this dogma has spawned popular reading programs and initiatives such as SSR (sustained silent reading), USSR (uninterrupted sustained silent reading), DEAR (drop everything and read), and SQUIRT (super quiet reading time). Commercial campaigns such as Pizza Hut's Book It! Program have also sought to entice children to read more (National Reading Panel, 2000a). A meta-analysis of reading fluency research by the National Reading Panel (2000a) revealed that most research undertaken on the effects of independent silent reading programs was correlational, and therefore could not assert the effectiveness of these types of programs for developing reading fluency. They emphasized that correlation does not equal causation (National Reading Panel, 2000a). Whether fluent readers are fluent because they read more (i.e., encouraged by independent silent reading times), or whether they simply choose to read more because they are good readers cannot be answered by correlational findings (Osborn, Lehr, & Hiebert, 2003; National Reading Panel, 2000a). The few experimental studies that fit the National Reading Panel's arguably narrow selection criteria indicated little or no difference between Control groups and Independent Silent Reading groups in the areas of reading comprehension, vocabulary knowledge, reading skills, or reading attitudes (National Reading Panel, 2000a; Carver & Liebert 1995; Morrow & Weinstein, 1986). None of these studies attempted to measure any effect on reading fluency (National Reading Panel, 2000a). Since the National

Reading Panel (2000a) was unable to endorse or reject the practice of independent silent reading in the classroom as an effective way to promote reading fluency, it recommended that further research in this area be undertaken.

It has been proposed that fluent readers focus their time and attention on comprehension tasks and making connections among the ideas in the text and their background knowledge, while non-fluent readers spend much of their time and attention fixated on decoding individual words (LaBerge & Samuels, 1974; Center for the Improvement of Early Reading Achievement, 2003). Working with high-frequency words and spelling patterns to build automaticity meant that students would spend less time and limited mental energy on decoding these words and more energy on comprehension of the text (LaBerge & Samuels, 1974; Cunningham, Hall, & Sigmon, 1999). Of all the words a person reads and writes it is estimated that approximately 50 percent of these words are accounted for by 100-110 high-frequency words (Adams, 1990; Fry & Kress, 2006; Zeno, Ivens, Millard, & Duvvuri, 1995; see Appendix A for a list of the 107 most frequently used word in written English and Fry's list of 300 high frequency words). Fry and Kress (2006) noted that the top 25 words on their high frequency word list make up about one third of all printed material, while their top three hundred high frequency words account for about 65% of all written material. By having emergent and early readers work with a set of high-frequency words and words with common spelling patterns, some advocates of this approach to reading instruction believe that reading, writing, and understanding these words will become automatic, leading to an increase in reading fluency (Cunningham, 2005). Fry and Kress (2006, p. 291) promoted the use of word walls for primary reading and writing adding, "daily work with

new and existing words builds automaticity and fluency in reading, independence in writing, and strategies for applying phonics knowledge to new words." Supporters of this approach suggested that if automaticity of these high-frequency words can be developed in the primary grades, early readers would be able to focus their mental energies on the comprehension and reading of the other less frequent words rather than on decoding every word they encounter in a given text (LaBerge & Samuels 1974; Samuels & Flor, 1997; Stanovich, 2000; Kuhn, 2003; Cunningham, Hall, & Sigmon, 1999; Cunningham, 2005).

The popular Four Blocks® Literacy Model (Cunningham, Hall, & Sigmon, 1999; Cunnigham & Allington, 1999) has advocated the daily use of word walls, in combination with other literacy activities, as a key strategy for developing automaticity of high-frequency words and recognition of common spelling patterns. Learning the common spelling letter combinations (onsets and rimes) and spelling patterns of key anchor words enables students to decode less frequent words quickly by analogy (Cunningham, 2005, Cunningham, Hall, & Sigmon, 1999; Wagstaff, 1999; Weber, 1988). Cunningham, Hall, & Sigmon (1999) recommended that teachers use word walls and word wall activities made up of high-frequency words and words with common spelling patterns to help develop automatic recognition (automaticity) of these words and common spelling patterns. They (Cunningham, Hall, & Sigmon, 1999) posited that daily exposure and practice using these high-frequency words through word wall-based activities, as part of a comprehensive multi-method and multi-level language arts program, helped primary age children (first through third grades) achieves two critical goals:

1. In order to read and write independently, children must learn to automatically recognize and spell the high-frequency words that occur in almost everything they read and write.

2. Children must also learn to look for patterns in words so that they can decode and spell the less-frequent words they have not been taught. (p. 7)

Although word walls are intuitively appealing having become very popular and widely adopted by some teachers and school systems, there is a dearth of research evidence to validate the efficacy of word walls for the development of reading fluency.

Statement of the Problem

The researcher investigated the effectiveness of two common reading instructional strategies on the oral reading fluency development and the isolated word reading skills of second grade students over 12-weeks. The first instructional strategy involved the daily use of a high-frequency/chunking word wall and word wall activities. The second strategy under investigation was the daily practice of in-class independent silent reading.

The researcher designed this study to address the following four research questions:

1. Does the daily fifteen-minute practice of using a high-frequency/chunking word wall in second grade classrooms increase student oral reading fluency development over a Control group?

2. Does the daily fifteen-minute practice of using a high-frequency/chunking word wall in second grade classrooms increase student isolated word reading or non-word decoding skills over a Control group?

3. Does the daily fifteen-minute practice of independent silent reading in second grade classrooms increase student oral reading fluency development over a Control group?

4. Does the daily fifteen-minute practice of independent silent reading in second grade classrooms increase student isolated word reading or non-word decoding skills over a Control group?

To answer these questions, the author conducted a quasi-experimental research study.

<u>Statement of Null Hypotheses</u>

The researcher attempted to find evidence for rejection of the following four null hypotheses.

Hypothesis 1: The fifteen-minute daily use of a high-frequency/chunking word wall for second grade students over 12 weeks will have no effect on oral reading fluency development of the average second grade student when compared to a Control group.

Hypothesis 2: The fifteen-minute daily use of a high-frequency/chunking word wall for second grade students over 12 weeks will have no effect on isolated word reading skills, or non-word decoding skills of the average second grade students when compared to a Control group.

Hypothesis 3: The fifteen-minute daily practice of independent silent reading in second grade classes over 12 weeks will have no effect on oral reading fluency development of the average second grade student over a Control group.

Hypothesis 4: The fifteen-minute daily practice of independent silent reading in second grade classes over 12 weeks will have no effect on isolated word reading skills, or non-word decoding skills of the average second grade student over a Control group.

Professional Significance of the Study

Commonly held assumptions and opinions about the effectiveness of specific teaching strategies need validation by reliable research (Adams, 1990). Without research-based evidence to support specific teaching methods, controversy and frustration ensue as people polarize their opinions and beliefs about teaching methods they prefer. The reading wars of the last fifty years pitted phonics-based reading instruction against whole language reading programs (Adams 1990). Research into these two approaches revealed that both types of instruction are beneficial when used in tandem (Early Reading Expert Panel, 2003). This research study has contributed to the limited body of knowledge on effective reading fluency instruction strategies for second grade students by demonstrating, to some degree, the effectiveness of independent silent reading and word walls on the development of oral reading fluency in second grade students.

Teachers have long thought that beginning readers become fluent readers by reading more (Wray & Lewis, 1993, National Reading Panel, 2000a; Stanovich, 1986). Numerous national programs (both commercial and educational) have promoted this idea (National Reading Panel, 2000a). The National Reading Panel's meta-analysis of the few experimental research studies that fit their selection criteria for highly methodological research indicated little to no difference between Control groups and Independent Silent Reading groups in the areas of reading comprehension, vocabulary knowledge, reading skills, or reading attitudes (National Reading Panel, 2000a; Carver & Liebert 1995; Morrow & Weinstein, 1986). Both repeated reading programs and independent silent reading have become a flashpoint for controversy since the National Reading Panel Report and have resulted in a number of new research initiatives (Osborn, Lehr, &

Hiebert, 2003, Samuels & Farstrup, 2006, Krashen, 2004). The National Reading Panel (2000a) recommended that more research needs to be done with a variety of student populations at varying ages and reading levels to determine the impact of independent reading on a range of reading outcomes (National Reading Panel, 2000a). Additionally, they identified the need for further research regarding which elements of reading instruction practice are most responsible for improved reading fluency and at which point along the development of reading specific instructional practices are most effective for encouraging reading fluency (National Reading Panel, 2000a).

Word walls and word wall activities have become a standard feature of some primary classrooms. An internet search of Ebsco Host revealed a mere twenty-one items containing the term 'word wall,' yet none of these articles presented research endorsing their use in helping to develop automaticity or reading fluency in beginning readers. Currently there exists a plethora of kinds, styles, formats, approaches, and ideas about how word walls ought to be developed and used (Wagstaff, 1999; Spann, 2001; Cunningham, Hall, & Sigmon, 1999). The National Reading Panel (2000a) determined that optimal vocabulary learning occurs by using a variety of vocabulary instruction methods and that vocabulary instruction leads to gains in reading comprehension. They noted that research demonstrated effective vocabulary instruction practices included: (a) the use of computer technology, (b) repetition and multiple exposures to vocabulary items, (c) learning vocabulary in context of content area reading, (d) restructuring of text (substitution of easy for hard words), and (e) active engagement in learning tasks (National Reading Panel, 2000a). Following a standard methodological practice of using the word wall in grade two classrooms, this research study may either help to provide

research-based support for the daily use of a high frequency/chunking word wall or help demonstrate that it may not be a particularly effective instructional tool for promoting reading fluency in second grade students.

<div align="center">Overview of Methodology</div>

A brief overview of the methodology of this quasi-experimental research study was included here to introduce the study in a general manner. One hundred twenty-one students in 6 second-grade classes were individually pretested for oral reading fluency using Form A of the Gray Oral Reading Test (fourth edition, GORT-4) and pretested for isolated word and non-word reading efficiency using Form A of the Test of Word Reading Efficiency (TOWRE). Before the study began, the researcher randomly assigned six intact classes to one of three groups: Word Wall (39), Independent Silent Reading (42), or Control (40). The students in classes assigned to the Word Wall group received 15 minutes of daily word wall instruction for 12 weeks. The students in classes assigned to the Independent Silent Reading group received 15 minutes of daily independent silent reading time for 12 weeks. The students in classes assigned to the Control group received their normal reading instruction without either word wall or independent silent reading for 12 weeks. All students were individually posttested using Form B of the GORT-4 and Form B of the TOWRE. The researcher then compared and analysed the data.

Definitions of Key Terms

Automaticity - fast, accurate, and effortless identification of words (automatic word recognition) (Early Reading Expert Panel, 2003; Putting Reading First, 2003).

Comprehension - getting meaning from what is read. It involves making connections among words and ideas presented in a text and the readers own background knowledge (Putting Reading First, 2003).

Early/Beginning Readers - a stage of reading development, often evident in first through third grade students, at which students begin to pay attention to the details of print and know that printed letters and words represent the sounds, words, and meanings of oral language (Early Reading Expert Panel, 2003).

Fluency - the ability to read a text quickly and accurately with ease, pace, expression (prosody), and comprehension (Early Reading Expert Panel, 2003; Putting Reading First, 2003; Osborn, Lehr, & Hiebert, 2003; Pinnell et al. 1995).

Fluent Readers - a stage of reading development, usually experienced by students at the end of second grade and beginning of third grade, at which students identify words with greater skill and ease, and begin to apply more complex comprehension strategies. These readers can read text with speed, accuracy, and proper expression. Using their extensive bank of sight words and refined decoding skills, they can focus more time and effort on the meaning of texts and less on deciphering words. Their reading sounds natural, like regular conversation. (Early Reading Expert Panel, 2003; National Reading Panel, 2000a; Rasinski, 2004).

High-Frequency/Chunking Word Wall – an area of classroom wall set aside to post high frequency and common spelling pattern (anchor) words. The words are usually written

on colored paper, cut out to highlight the shape of the word, and arranged alphabetically under the appropriate letter of the alphabet. They are usually found in primary classrooms for a variety of activities and games to teach students to read, spell, understanding word meanings and usages, as well as to develop automatic recognition of high-frequency words. The end goal of a word wall is to transfer students' word knowledge to their own reading and writing and to teach spelling patterns, enabling students to decode and spell other words (Cunningham, 1991, Cunningham & Allington, 1999, Cunningham, Hall, & Sigmon, 1999).

Independent silent reading - a classroom practice in which students are encouraged to select their own reading material and given class time to read silently on their own. For the purpose of this study, it meant 15 minutes of uninterrupted daily silent reading time during which students select their own reading material and read independently (National Reading Panel, 2000a).

CHAPTER TWO

Review of the Related Research Literature

A commonly agreed upon current definition of reading fluency can be somewhat elusive (Kame'enui & Simmons, 2001). Traditional definitions of reading fluency have focused on speed and accuracy of reading printed text, while current definitions often add comprehension as a component of fluency (Rasinski, 2006). Others have suggested that prosody is an essential element of fluency (Rasinski, 2006; Kuhn, 2005; Cunningham, 2005). The researcher has identified and explored various definitions of reading fluency throughout this chapter.

This chapter contains the following six sections: Current Trends in General Reading Instruction Research, Current Trends in Reading Fluency Research, Key Theories Related to Reading Development, Theoretical Literature Related to Reading Fluency Development, Theoretical Literature and Empirical Research Related to Vocabulary Instruction and Word Walls, Theoretical Literature and Empirical Research Related to Independent Silent Reading, and Implications for this Research Study. In the first section of this chapter, the researcher has outlined some general trends in current reading instruction research based on some key current landmark government reports, research-based documents, and important research-based books that have shaped the discussion and direction of reading instruction and reading fluency research over the past decade. The researcher summarized the key theories relevant to general reading development and theoretical literature related to reading fluency development in sections two and three respectively. In the fourth section, he highlighted the theoretical literature

and empirical research related to vocabulary instruction in general and word walls in particular. The fifth section was devoted to examining the theoretical literature and empirical research related to independent silent reading. The final section focused on some implications for this study from the current research on reading fluency development.

<p align="center">Current Trends in General Reading Instruction Research</p>

The controversial reading wars of the last several decades pitted phonics instruction against whole language methods. Adam's landmark work *Beginning to Read: Thinking and Learning about Print (A Summary)* (1990) contained her review, evaluation, and integration of the growing body of reading research and began the trend toward ending the great phonics-whole language debate. She stated that while both phonics and whole language reading instructional approaches contributed to emergent reading skills:

> The vast majority of the studies indicated that approaches including intensive, explicit phonics instruction resulted in comprehension skills that are at least comparable to, and word recognition and spelling skills that are significantly better than those that do not. . . .Approaches in which systematic code instruction is included along with meaningful connected reading result in superior reaching achievement overall. (Adams, 1990, p. 12)

The Report of the National Reading Panel's (2000a) review of reading research confirmed Adam's conclusions about the essential role of systematic phonics instruction for beginning readers. It also opened up a number of new debates on effective early

reading instruction. This section contains a summary of current trends in general reading instruction research.

Reading researchers' attention has begun to focus on reading fluency, which has become a key topic of importance in the ongoing reading instruction debate (Cassidy & Cassidy, 2007; Cassidy & Cassidy, 2005). The researcher has summarized current trends in reading research according to current major government reports, other current major research-based reports, and important research-based books published since the National Reading Panel's 2000 Report. The researcher's review of current reading research literature began with a summary of the National Reading Panels Report (2000b). He arranged the remaining material according to general reading instruction research and fluency instruction research. Elements of the following key documents were highlighted: the International Reading Association's 3rd edition of *What Research Has to Say About Reading Instruction* (Farstrup & Samuels, 2002), the Center for the Improvement of Early Reading Achievement's (2003) *Putting Reading First: The Research Building Blocks of Reading Instruction: Kindergarten Through Grade 3*, the Ontario Ministry of Education's *Early Reading Strategy: The Report of the Expert Panel on Early Reading in Ontario* (Early Reading Expert Panel, 2003), the Pacific Resources for Education and Learning's *A Focus on Fluency* (Osborn, Lehr, & Hiebert, 2003), *What Research Says About Fluency Instruction* (Samuels & Farstrup, 2006).

The Report of the National Reading Panel

In 2000, The National Reading Panel published their U.S. government mandated study on what research has to say about teaching children to read. After much research, public hearings, and consultation, they identified and adopted five priority topics for

analysis. These included Alphabetics (Phonemic Awareness Instruction and Phonics instruction), Fluency, Comprehension, Teacher Education and Reading Instruction, and Computer Technology and Reading Instruction. Their conclusions from reviewing all research relevant to these five priorities has helped form the direction of reading research for the past several years.

In the area of Alphabetics, the Report of the National Reading Panel (2000a) made their conclusions in two parts: phonemic awareness instruction and phonics instruction. They concluded that phonemic awareness training caused improvement in students' phonemic awareness, reading, and spelling. They deemed phonemic awareness training as highly effective under a variety of teaching conditions and with a variety of learners across a range of grade and age levels (National Reading Panel, 2000a). They determined that it improved student reading more than reading instruction that did not include phonemic awareness (National Reading Panel, 2000a). They also concluded, "These facts and findings provide converging evidence that explicit, systematic phonics instruction is a valuable and essential part of a successful classroom reading program." (National Reading Panel, 2000b, p. 10). While non-disabled readers in preschool, kindergarten, and grade one benefited most from phonemic awareness training, it also had significant benefits for students in kindergarten through sixth grade for all types of learners (learning disabled, non-learning disabled, low achieving, etc.). Phonemic awareness training benefited students' word reading, comprehension, and spelling even long after the training had ended (National Reading Panel, 2000a).

With regard to phonics instruction, The Report of the National Reading Panel (2000b) concluded that systematic phonics instruction produced greater growth than non-

phonics based instruction in student ability to decode, in word-reading abilities of regularly spelled words, pseudo-words, and irregularly spelled words, as well as in reading comprehension ability. These conclusions seem to have put an end to the phonics-whole language reading wars since many people concede that effective reading instruction ought to include both phonemic awareness and systemic phonics instruction (Cunningham & Cunningham, 2002; Ehri & Nunes, 2002; Ehri, Nunes, Stahl, & Willows, 2001; Early Reading Expert Panel, 2003). In the area of Alphabetics the National Reading Panel (2000b) recommended further study regarding: (a) the active ingredients in effective systematic phonics instruction, (b) how to best motivate students and teachers to learn letter-sound associations and apply that knowledge to reading, (c) the benefit of using decodable books in a systematic phonics program, and (d) whether there is benefit in continuing systematic phonics instruction beyond second grade.

The National Reading Panel (2000b) noted a dearth of research literature on reading fluency. They recognized that there seemed to be common agreement in the current research literature that fluency develops from reading practice. Their investigations led them to explore the effectiveness of two general forms of reading practice for fluency development: having students read passages orally with guidance and feedback, and encouraging students to read extensively on their own with minimal guidance and feedback (National Reading Panel, 2000b). "The Panel concluded that guided repeated oral reading procedures that included guidance from teachers, peers, or parents had a significant and positive impact on word recognition, fluency, and comprehension across a range of grade levels." (National Reading Panel, 2000b, p. 12). They noted a lack of experimental research evidence to endorse "the efficacy of having

students engage in independent silent reading practice with minimal guidance or feedback." (National Reading Panel, 2000b, p. 12). Both repeated reading programs and independent silent reading have become a flashpoint for controversy since the National Reading Panel Report and have resulted in a number of new research initiatives (Osborn, Lehr, & Hiebert, 2003, Samuels & Farstrup, 2006, Krashen, 2004). The Report of the National Reading Panel (National Reading Panel, 2000a) recommended the undertaking of more research with a variety of student populations at varying ages and reading levels to determine the impact of independent reading on a range of reading outcomes. They also identified the need for further research regarding which elements of instructional practice are most responsible for improved reading fluency and where, along the development of reading, are specific instructional practices most effective for encouraging reading fluency (National Reading Panel, 2000a). The researcher addresses reading fluency development research in detail later in this chapter.

The National Reading Panel (2000a) divided their analysis of comprehension, their third topic, into three parts: vocabulary instruction, text comprehension instruction, and teacher preparation and comprehension strategies instruction. It was determined that optimal vocabulary learning occurs by using a variety of vocabulary instruction methods and that vocabulary instruction does lead to gains in reading comprehension (National Reading Panel, 2000b). Effective vocabulary instruction included the use of computer technology, repetition and multiple exposures to vocabulary items, learning vocabulary in context of content area reading, restructuring of text (substitution of hard for easy words), and active engagement in learning tasks (National Reading Panel, 2000b). Although readers normally acquire comprehension strategies informally, the Report of the National

Reading Panel (2000b) identified several effective text comprehension instruction strategies supported by research including: (a) comprehension monitoring, (b) cooperative learning, (c) graphic organizers, (c) story structures, (d) question answering, (e) question generation, (f) summarization, and (g) multiple strategy teaching. In the area of teacher preparation and comprehension strategies instruction, the studies indicated that teachers can be taught to teach comprehension and that they should learn to teach their students comprehension strategies through: (a) modelling their thinking process for their students, (b) encouraging students to ask questions, solve problems, and discuss possible answers, and (c) by provide reading tasks that demand active involvement (National Reading Panel, 2000b). The research evidence also led them (National Reading Panel, 2000b) to conclude that comprehension goals were best achieved through vocabulary instruction, and through using methods appropriate for the age and ability of the reader. Additionally, they noted that teaching a combination of reading comprehension techniques led to improved comprehension scores on standardized tests, but that more research needed to be undertaken to determine which comprehension strategies are most effective for each age group (National Reading Panel, 2000b).

Once again, the National Reading Panel (2000a) determined that in order to for them to make recommendations in the areas of teacher education and reading instruction, more research evidence was necessary. They did note that it appeared that in-service professional development in the area of reading instruction was beneficial for improving students' reading achievement (National Reading Panel, 2000a). A small number of studies on the use of computer technology and reading instruction show promise, but the

National Reading Panel (2000a) could not make conclusive recommendations on its use in this new and relatively unstudied field.

General Reading Instruction Research

The 2000 Report of the National Reading Panel served to set a new direction for reading research and classroom reading instruction. It resulted in a number of new research initiatives and set the future direction for reading instruction research. In this section, the researcher summarized the highlights of some of the key books and reports that have followed this major report.

What Research Has to Say About Reading Instruction. In 2002, the International Reading Panel published the 3rd edition of *What Research Has to Say About Reading Instruction* (Farstrup & Samuels, 2002). In it, twenty-two reading experts summarized what current reading research revealed about reading instruction. In this section, the highlights and trends in reading research described in this book are summarized.

The Report of the National Reading Panel's (2000a) endorsement of teaching phonemic awareness and phonics instruction was further supported and expanded in this book. Cunningham and Cunningham (2002) cited research indicating that effective phonics instruction ought to be taught through a variety of multi-level activities that emphasize transfer of phonics skills to actual reading. Additionally, they referred to research that indicates reading and writing ought to make up a significant portion of language arts class time (Cunningham & Cunningham, 2002). Ehri and Nunes (2002) pointed to research evidence demonstrating phonemic awareness instruction helps children from preschool age to older reading disabled students who face a variety of

reading challenges. They noted that phonemic awareness instruction is one foundational

component of an effective overall literacy program (Ehri & Nunes, 2002).

Graves and Watts-Taffe's (2002) chapter on "The Place of Word Consciousness

in the Research-Based Vocabulary Program" corroborated the National Reading Panel's

(2000b) findings regarding vocabulary instruction. Both demonstrated that direct

vocabulary instruction improves student comprehension of text. Graves and Watts-Taffe

(2002) pointed out research that advocates teaching individual words and word learning

strategies to help build student vocabularies. They also advocated teaching etymology,

engaging in word play, and encouraging student reading of a wide selection of literature

to foster the learning of words in context.

The development of reading comprehension skills and strategies was another

topic given extensive coverage in *What Research Has to Say About Reading Instruction*

(Farstrup & Samuels, 2002). Pressley's (2002) review of research above-the-word-level

comprehension processes revealed that good readers begin by clarifying their goal for

reading a given text, engaging in a pre-reading skim of the text, and activating prior

knowledge which can be related to ideas in the text. As good readers engage in reading a

text, they scan forward over information unrelated to their reading goals, reread text they

deem especially important, make conscious inferences as they read, construct the main

ideas of the text, interpret, evaluate, and monitor as they read (Pressley, 2002). In

summary, they are active readers. After a good comprehender has completed reading a

text, he reflects on what he has read, constructing a summary and evaluating the

credibility of the material (Pressley, 2002). Duke and Pearson (2002) reiterated and

added to Pressely's reading strategies of good comprehenders by noting that they often

make predictions about what is to come and are constantly engaged in monitoring their

understanding of what they are reading by constructing, summarizing, revising,

evaluating, and questioning the meaning of what they read as they read. Williams's

(2002) review of literature on reading comprehension strategies and teacher preparation

revealed that teaching reading comprehension strategies led to increased awareness, and

use of said strategies often leading to improved comprehension scores on standardized

comprehension tests. She (2002) also noted that teachers can be taught to teach their

students comprehension strategies and that this teaching of comprehension strategies

often results in higher comprehension scores on standardized reading tests.

The chapter on "Reading Fluency: Its Development and Assessment" by Samuels

(2002) identified reading fluency as a key, yet neglected, component of reading

instruction. Samuels summarized the automaticity theory that he and LaBerge first

developed in 1974. Since this topic is addressed later in this section, the researcher will

simply note that the automaticity theory suggested that through repeated exposure and

practice, students move from decoding each individual word they read to automatic

recognition of common or high frequency words when they read a given text. Samuels

(2002) also cited the Report of the National Reading Panel's (2000a) endorsement of his

repeated reading technique for building fluency proclaiming that more than 100 studies

have been published that have tested and proved the repeated reading method. He also

noted that these studies they have consistently demonstrated, "statistically significant

improvement in reading speed, word recognition, and oral reading expression on the

practiced passages" (Samuels, 2002, p. 179). The topic of reading fluency has risen to

become a key issue of debate in reading research over the past few years (Osborn, Lehr,

& Hiebert, 2003; Kuhn & Stahl, 2003; Rasinski, 2004; Samuels & Farstrup, 2006).

Putting Reading First: The Research Building Blocks for Teaching Children to

Read. Based on the National Reading Panel's findings stated in their 2000 research

report, the Center for the Improvement of Early Reading Achievement published a

document titled, *Putting Reading First: The Research Building Blocks of Reading*

Instruction: Kindergarten Through Grade 3 (Armbruster, Lehr, & Osborn, 2003) to

explain to teachers, in practical terms, how they ought to focus their literacy instruction

based on the current reading research. This document emphasized five areas in early

literacy instruction: phonemic awareness instruction, phonics instruction, fluency

instruction, vocabulary instruction, and text comprehension instruction.

Putting Reading First (Armbruster, Lehr, & Osborn, 2003, p. 10) defined

phonemic awareness as, "the ability to hear, identify, and manipulate individual sounds—

phonemes—in spoken words." It also noted that phonemic awareness instruction helps

children improve word reading, spelling, and comprehension, and it is most effective

when children are taught it using letters of the alphabet focusing on one or two types of

phoneme manipulations at a time (Armbruster, Lehr, & Osborn, 2003). They stated that

phonemic awareness could best be developed through having students identify and

categorize phonemes, blend phonemes to form words, segment words into phonemes, add

or delete phonemes to form new words, and substitute phonemes to make new words

(Armbruster, Lehr, & Osborn, 2003).

In *Putting Reading First*, phonics instruction was defined as "the relationship

between the letters of written language and the sounds of spoken language" (Armbruster,

Lehr, & Osborn, 2003, p. 19). The document also stated in unequivocal terms that

systematic and explicit phonics instruction programs significantly improve children's

word recognition, spelling, and reading comprehension (Armbruster, Lehr, & Osborn,

2003). It was also noted that phonics instruction was most effective when instruction

began in kindergarten or first grade (Armbruster, Lehr, & Osborn, 2003). They described

a systematic phonics program as one that had a plan of instruction that included a

carefully selected and logically organized set of letter-sound relationships and an explicit

phonics program as one that included precise directions for the teacher to teach these

letter-sound relationships (Armbruster, Lehr, & Osborn, 2003). They also noted that

effective phonics programs provide plenty of opportunities for the children to apply their

learning about letter-sound relationships to their reading of words, sentences, and stories

(Armbruster, Lehr, & Osborn, 2003).

Putting Reading First (Armbruster, Lehr, & Osborn, 2003) defined reading

fluency as the ability to read a text accurately and quickly with expression. It was noted

that fluent reading freed student attention to focus on understanding what they had read

(Armbruster, Lehr, & Osborn, 2003). The key fluency building strategies promoted by

Putting Reading First included: (a) one-on-one reading with adults who served as a both

models and coaches for fluent reading, (b) helping students with word recognition,

offering feedback to the student as they read aloud, (c) engaging students in repeated oral

reading and choral reading, (d) encouraging tape-assisted reading and partner reading,

and (e) providing opportunities to practice readers theatre (Armbruster, Lehr, & Osborn,

2003).

Putting Reading First (Armbruster, Lehr, & Osborn, 2003) defined vocabulary instruction as learning the words one must know to communicate effectively. This included both oral vocabulary and reading vocabulary. They recommended that vocabulary instruction should be taught indirectly as students engage in oral conversations, listen to adults speak and read, and engage in extensive reading on their own (Armbruster, Lehr, & Osborn, 2003). Vocabulary instruction was also deemed helpful when students were directly and explicitly taught both individual words and word learning strategies (Armbruster, Lehr, & Osborn, 2003).

Text comprehension instruction was defined by *Putting Reading First* (Armbruster, Lehr, & Osborn, 2003) as the ultimate reason for reading. They noted the following comprehension strategies should be used to promote student reading skills: purposeful and active reading, monitoring, using graphic or semantic organizers, answering and generating questions, recognizing story structure, and summarizing (Armbruster, Lehr, & Osborn, 2003). This instruction was to be accomplished through the use of explicit instruction such as direct explanation, modeling, guided practice, application, and cooperative learning (Armbruster, Lehr, & Osborn, 2003). In addition, instruction should include a flexible use of multiple comprehension strategies such as asking questions about the text as they are reading, summarizing parts of the text, clarifying words and sentences not understood, and predicting events in the text (Armbruster, Lehr, & Osborn, 2003).

Early Reading Strategy: The Report of the Expert Panel on Early Reading in Ontario. The Ontario Ministry of Education in Canada also produced a report on literacy instruction in 2003 entitled, *Early Reading Strategy: The Report of the Expert Panel on*

Early Reading in Ontario. It established a framework for effective early reading

instruction with three goals: fluency, comprehension, and motivation. To achieve these

goals, the Early Reading Expert Panel (2003) determined that children needed to develop

specific knowledge and skills for proficiency in reading. The Early Reading Expert Panel

identified nine categories of knowledge and skills for the development of reading

proficiency: oral language, prior knowledge and experience, concepts about print,

phonemic awareness, letter-sound relationships, vocabulary, semantics and syntax,

metacognition, and higher order thinking skills (Early Reading Expert Panel, 2003). The

following paragraph briefly describes each of these categories.

The Early Reading Expert Panel (2003) viewed the development of reading and

writing skills, oral language proficiency, prior knowledge and experience as foundational

elements of an effective early reading program. Prior knowledge and experience

included the general background knowledge that served the student as a schema for

understanding, synthesizing, reflecting upon, and deriving meaning from text. Concepts

about print included the simple but foundational ideas about directionality for reading,

differences between words and letters, capitalization and punctuation, and common

characteristics of books. The Early Reading Expert Panel (2003) noted that phonemic

awareness included the ideas of oral language and words being composed of individual

speech sounds while phonics instruction includes teaching students about letter-sound

relationships. Learning vocabulary for reading included both the broadening of students'

general word knowledge and increasing the depth of the reservoir of words children

understood and could use correctly. Semantics and syntax referred to the meaning of

words, phrases, and sentences as well as the structure of language, classes of words, and

their unique functions. Metacognition and comprehension strategies addressed the

reading skills children use such as decoding, connecting ideas in text with prior

knowledge, identifying main ideas, drawing inferences, and synthesizing information.

The Early Reading Expert Panel (2003) defined higher-order thinking skills as the ability

to interact with the content of a given text using Bloom's taxonomy.

<div align="center">Current Trends in Reading Fluency Research</div>

The Report of the National Reading Panel (2000a, p. 3-1) chapter on "Fluency"

noted, "There is common agreement that fluency development develops from reading

practice. What researchers have not yet agreed upon is what form such practice should

take to be most effective." They noted that there are two generally accepted views: 1.

students should repeatedly read passages orally with guidance and feedback, 2. students

should read extensively on their own or with minimal guidance and feedback. As noted

previously, the topic of reading fluency research has risen to become a key issue of

debate in reading research over the past few years (Osborn, Lehr, & Hiebert, 2003; Kuhn,

& Stahl, 2003; Rasinski, 2004; Samuels & Farstrup, 2006), and Reading Today noted it

as a hot topic for 2006 and 2007 (Cassidy & Cassidy, 2005; Cassidy & Cassidy, 2007).

In the following section, the researcher summarized one key report on reading fluency

research and one noteworthy book on reading fluency research both produced since the

Report of the National Reading Panel in 2000a.

A Focus on Fluency

In 2003, the Pacific Resources for Education and Learning produced a research-

based report entitled *A Focus on Fluency* (Osborn, Lehr, & Hiebert, 2003). It noted that

fluency instruction was an essential but often neglected component of reading instruction.

The purpose of the report was to highlight the need for fluency instruction by focusing

attention on current fluency-based research. In this section, the researcher has

summarized the highlights of this report.

The report began by expanding the definition of fluency to include the ability to

read aloud effortlessly with expression that sounds natural as if one is speaking (Osborn,

Lehr, & Hiebert, 2003). This definition went a little beyond the National Reading

Panel's (2000a, p. 3-5) simple definition of fluency as "the ability to read a text quickly,

accurately, with proper expression." It continued by explaining why the components of

word recognition and prosody are so important in the development of fluency (Osborn,

Lehr, & Hiebert, 2003). Citing LaBerge and Samuels seminal research from 1974, they

noted that automatic word recognition allows the reader to focus most of their attention

on comprehension of meaning in the text rather than on the attention-draining task of

decoding the text (Osborn, Lehr, & Hiebert, 2003). They defined prosody as a

compilation of spoken language features that includes stress or emphasis, pitch

variations, intonation, reading rate, and pausing (Osborn, Lehr, & Hiebert, 2003). While

they recognized that the relationship of prosody to reading success was not clearly

established, they suggested that prosody also contains considerable meaning in written

text in the same way it does in spoken language (Osborn, Lehr, & Hiebert, 2003). They

joined the Report of the National Reading Panel's endorsement of identifying repeated

oral reading as an effective instructional method to develop reading fluency (Osborn,

Lehr, & Hiebert, 2003). In addition, they noted teacher-student assisted reading, choral

reading, echo reading, readers theatre, paired reading, tape-assisted reading, computer

assisted reading, and partner/buddy reading as variations of effective repeated oral reading techniques (Osborn, Lehr, & Hiebert, 2003).

A Focus on Fluency (Osborn, Lehr, & Hiebert, 2003) cited research challenging the use of independent silent reading without feedback or interaction, noting that only small, if any gains are produced using this activity. They suggested that poor readers, left to their own, may spend independent reading times daydreaming, talking, or engaging in some other off-task activity. If they did choose to read, it was suggested, they were likely to choose very simple reading material that would not build vocabulary or comprehension (Osborn, Lehr, & Hiebert, 2003).

In addition, Osborn, Lehr, & Hiebert (2003) gave a tacit endorsement to Fluency-Oriented Reading Instruction (FORI). This approach combines the practices of teacher-led (modelled) repeated oral reading and partner reading with discussion about the story content and vocabulary, a free reading period at school, and home reading (Osborn, Lehr, & Hiebert, 2003). They also pointed out that this intervention has produced a gain of almost two years in the reading performance of grade two students (Osborn, Lehr, & Hiebert, 2003; Stahl, 2002). Osborn, Lehr, & Hiebert (2003) also endorsed the practice of expanding a reader's sight word and content word vocabulary bank of high frequency words so that beginning readers would not struggle with almost half of the words they will encounter in written text.

What Research Says About Fluency Instruction

What Research Says About Fluency Instruction (Samuels & Farstrup, 2006), published by the International Reading Association, was written as a follow-up to *What Research Says About Reading Instruction* (2002). It included a number of summaries and

interpretations of the most recent fluency research supporting various approaches to reading fluency instruction by sixteen reading experts. In this section, a variety of definitions for reading fluency have been summarized, a brief history of reading fluency outlined, some new research supportive of various reading fluency instructional approaches to the develop reading fluency explained, and some approaches to the assessment of reading fluency were considered.

Defining reading fluency. Although Rasinski (2006) noted that the exact definition of reading fluency has yet to be resolved, he offered three suggestions concerning the nature of reading fluency: prosody, automaticity, and comprehension. For some, prosody, the oral interpretation and expressiveness of written text, is reading fluency (Allington, 2006; Rasinski, 2006). He noted that others define reading fluency as automaticity; simply quick and accurate word decoding (Rasinski, 2006). Samuels (2006a, 2006b) suggested that fluency is the ability to both decode rapidly or automatically and comprehend simultaneously. In a similar vein, Topping (2006) suggested that fluency is an adaptive, context-dependent process that can operate at a number of layers or levels, whereby maximum meaning is extracted at maximum speed. For others, reading fluency is primarily comprehension or understanding, that comes as a result of reading with appropriate expressiveness, decoding speed and accuracy (Pressley, Gaskins, & Fingeret, 2006; Pikulski, 2006; Torgesten & Hudson, 2006).

Some key elements of reading fluency such as prosody, word-decoding, word-reading accuracy, and speed/rate were defined by various researchers in *What Research Has to Say About Fluency Instruction* (Samuels & Farstrup, 2006). Torgesen and Hudson (2006) define prosody as the rhythmic and tonal features of speech, including

pitch or intonation, stress patterns (emphasis), duration, and phrasing that contribute to expressive reading of text. They suggest that prosodic reading communicates important meanings from written text such as surprise, question, and exclamation beyond the semantics of individual words (Torgesen & Hudson, 2006). According to Torgesen and Hudson (2006, p. 133), "Fluent reading comprises three key elements: (1) accurate reading of connected test, (2) at a conversational rate, (3) with appropriate prosody." They noted that others questioned whether prosody ought to be included in the definition of reading fluency since, many current assessments for reading fluency do not include measures of prosody but focus only on accuracy and rate (Torgesen & Hudson, 2006). Additionally, a recent study on whether second grade students need to read prosodically to improve their comprehension found that students' individual prosody in reading did not have a strong or consistent relationship with reading comprehension (Schwanenflugel et al. 2004).

Word decoding involves the ability to decode words quickly using one's knowledge of phonetic principles in conjunction with contextual cues (Torgesen & Hudson, 2006). Samuels (2006a) offered a simple definition of decoding as the ability to generate a sound representation of printed words. Pikulski (2006, p. 71) stated, "If decoding words drains attention, little or no capacity is available for the attention-demanding process of comprehending. Therefore, automaticity of decoding—a critical component of fluency—is essential for high levels of reading achievement." Different from word-decoding, word-reading accuracy involves the ability to recognize words, in conjunction with contextual cues, correctly (Torgesen & Hudson, 2006). In many ways,

prosody is like automaticity. Torgesen & Hudson (2006, p. 133) noted, "knowledge of a large bank of high-frequency words are required for word-reading accuracy."

Speed/Rate of decoding linked to both improved prosody and improved comprehension (Schwanenflugel et al. 2004). On any oral reading assessment that measures both speed and accuracy, a reader constantly makes determinations about the value he places on speed versus accuracy. The students who pick the right balance between speed and accuracy achieve the best reading performance (Torgesen & Hudson, 2006). Torgesen & Hudson (2006, p. 133) noted, "Reading rate comprises both fluent identification of individual words and the speed and fluidity with which a reader moves through connected text."

A brief history of reading fluency. Rasinski (2006), in his chapter on the history of reading fluency, contrasted the 19th century school goals for reading instruction which included oral recitation skills and elocution, with the modern reading instruction goal of silent comprehension of text-based information. He noted that the development of LaBerge and Samuels' Theory of Automaticity in 1974 has shaped the direction and development of just about every fluency theory and fluency instructional practice since it was first expressed (Rasinski, 2006). Essentially, they proposed that poor reading comprehension was a result of readers spending tremendous effort on decoding words with the result that inadequate cognitive resources remained to make sense of what they had read (Rasinski, 2006; LaBerge & Samuels, 1974). In 1980, Stanovich, "refined this theory into what he termed the 'interactive compensatory explanation' of reading fluency" (Rasinski, 2006, p. 12). Stanovich (1980) reasoned that proficient readers and poor readers processed text differently when they engage in reading. Good readers

employed an automatic, attention-free, bottom-up process to word decoding, whereas

poor readers spent much of their mental energies decoding words. As a result, good

readers focus their mental energies on comprehension tasks, while poor readers used up

their mental energies in decoding tasks which results in fewer cognitive resources able

for the task of comprehension (Stanovich, 1980). He concluded that general

comprehension strategies and rapid context-free word recognition appeared to be the

process that most clearly distinguished good from poor readers (Stanovich, 1980).

Interest in reading fluency subsided as the phonics/whole language debate took center

stage in the 1980's and 1990's. Interest in fluency instruction renewed when the National

Reading Panel Report (2000a) made fluency instruction one of the five central topics of

their research review. It has been a hot topic ever since (Cassidy & Cassidy, 2005) and

the result has been a number of new fluency instructional models and strategies.

Reading fluency instructional strategies. The primary fluency instructional

strategies discussed in *What Research Has to Say About Fluency Instruction* include:

various forms of repeated reading (Samuels, 2006a; Topping, 2006; Palumbo &Willcutt,

2006; Pressley, Gaskins, & Fingeret, 2006; also see Figure 1 below), systematic decoding

(phonics) instruction (Pressley, Gaskins, & Fingeret, 2006; Pikulski, 2006; Torgesen &

Hudson, 2006), sight word/word recognition instruction (Pressley, Gaskins, & Fingeret,

2006; Pikulski, 2006; Torgesen & Hudson, 2006), vocabulary knowledge (Pressley,

Gaskins, & Fingeret, 2006; Pikulski, 2006; Torgesen & Hudson, 2006), independent

(silent) reading practice (Allington, 2006; Palumbo & Willcutt, 2006; Samuels, 2006a),

and scaffolded silent reading (Hiebert, 2006). A summary of each of these fluency

instruction strategies follows in this section.

Samuels (2006a) advocates any number of variations of his 1979 or 1997 methods of repeated reading as the best approach to developing fluency. He reasoned that like athletes and musicians who become proficient through constant repetition and practice of component skills, readers become proficient through repeated reading of individual texts (Samuels, 1997). Each time they re-read a text, they are able to improve their speed and accuracy. Samuels noted that this development of fluency is transferable to other texts (Samuels, 1997). The National Reading Panel (2000a) endorsed repeated reading procedures in a variety of forms as having a positive impact on word recognition, fluency, and comprehension. The following chart (see Figure 1) of oral-reading methods for developing fluency gives a summary of the variety of repeated reading procedures that stem from Samuel's original method (Samuels, 2006a; This table was developed by University of Minnesota graduate student Terri Fautsch-Patridge.)

Figure 1. Oral reading methods for developing fluency.

Method	Description
Oral Repeated Readings *Individually based:* *Classic version* Repeated Readings	Students reread a short, meaningful passage of text typically four times. Alternatively, a criterion is set for speed, accuracy, and comprehension and perhaps expression. After four readings or when the criterion is met, they may proceed to the next section or to a new short passage.
Individually based: *Technology centered* Audiotapes: Commercially made, teacher made, or student made	As described above, except that while rereading aloud, the student is following along with an audio-recorded version. Teachers are cautioned that commercially available tapes may be read too quickly for some students, and they may choose to make their own. Teachers may need to make certain the student is actually reading. Older students in need of fluency development may have their needs met by recording their best oral reading of a text to be used by younger students.

Computer Stories on CD-ROM	As above, except stories are computer based, CD-ROMs (see Project LITT, 1998) can be programmed to read aloud word by word, sentence by sentence, or other combinations. (See above cautions.)
Systemic programs	Commercially available programs such as Fluent Reader (Renaissance Learning, 2004) provide a complete computer-based system. (See FCRR, 2003, for lists of other programs.)
Reading in pairs Partner reading	Each child must read the passage aloud to his or her partner a number of times. Students may be given simple feedback forms for their partner. Other variations (integration of other activities) exist. Comprehension activities may follow.
Guided pairs	The more skilled reader (teacher, parent, older peer) reads the passage once and then the pair reads it aloud in unison a number of times. In some variations, the more skilled reader instructs the less skilled reader to signal when the learner wished to "try it solo." Comprehension activities may follow.
Group contexts Readers Theatre	Involves repeated reading alone or in groups to reach acceptable reading for an ensemble performance; gives the student a "real-life" reason to do repeated readings. Performance criteria are similar to those given in "Repeating Readings" (above). Readers Theatre typically consists of plays or poems but may be material directly from textbooks.
Radio reading	Radio reading may be "news" (as from children's news magazines) or material directly from textbooks, read as a "news announcer" would read it. (see Carrick, 2001)
Integrated fluency Lessons	Combines a number of techniques; includes teacher model; discussion; repeated readings in the form of choral, partner, and individual readings; performance; activities relating to the text, oral and/or silent-reading assignments to do as homework and review.

(pp. 29-30)

Systematic decoding instruction proponents all cited the National Reading Panel's 2000 report as overwhelming evidence of phonetic based instruction as a necessary component of fluency development (Pressley, Gaskins, & Fingeret, 2006; Pikulski, 2006; Torgesen & Hudson, 2006). Letter familiarity, phonemic awareness, and phonics instruction are essential skills that beginning readers must learn to master in order to

develop reading fluency (Pikulski, 2006). Learning to decode text by sounding out each

letter in words (synthetic phonics instruction) or learning common consonant blends and

spelling patterns (onset-rime/analogic phonics) appear to be a foundational element of

fluency instruction (Pikulski, 2006).

Sight word/word recognition instruction, has often been based on Edward Dolch's

view that, "child should be taught the words most often encountered in text as sight

words or words they should recognized automatically" (Pressley, Gaskins, & Fingeret,

2006, p. 56). Some believe that both high-frequency words commonly used in children's

texts, as well as common word patterns should be practiced repeatedly till students

recognize them without having to sound them out (Pikulski, 2006; Torgesen & Hudson,

2006). Because high-frequency words often have 'phonetically irregular' spelling

patterns, instant recognition of these words help readers not use up limited cognitive

resources attempting to decode these words, thus increasing reading speed and fluency

(Pikulski, 2006).   Additionally, building vocabulary knowledge through content

knowledge helped students learn the various meanings of different words, which in turn

enabled beginning readers to better understand what they read as they begin to read

widely (Pressley, Gaskins, & Fingeret, 2006; Pikulski, 2006; Torgesen & Hudson, 2006).

Along with the speed at which readers can identify words, the speed at which they can

derive meaning from a text is usually the result of the depth and breadth of their

vocabulary knowledge (Torgesen & Hudson, 2006).

Independent silent reading practice can take a variety of forms. The National

Reading Panel's 2000 report indicated that current research studies indicated that

research on simple independent silent reading had not demonstrated significant

improvement in reading fluency. Allington (2006), Palumbo & Willcutt (2006), and

Samuels (2006a) recommended independent reading as a very effective strategy for

building reading fluency. Allington (2006) advocated for voluminous amounts of high-

success reading experiences to improve both reading comprehension and fluency. In a

similar vein, Palumbo & Willcutt (2006) supported the encouragement of independent

recreational reading of texts geared to each student's reading level. Samuels (2006a, p.

34) also argued unequivocally, "I can state with confidence that when the amount of time

spent in independent reading is matched to the student's ability to maintain attention,

there are positive reading outcomes. Matthew effects do operate in reading. Those who

read more get better." Scaffolded silent reading differs from independent silent reading

in that during scaffolded silent reading time, students receive a defined purpose for

reading along with a limited period within which they are required to read a text (Hiebert,

2006). By focusing on texts containing a limited vocabulary of high frequency words

appropriate to beginning and struggling readers, Hiebert (2006) argued that repetition of

this core vocabulary led to gains in reading fluency.

Reading fluency assessment measures. Determining the appropriate and most

effective measures of fluency continues to challenge researchers in the field of reading

fluency research. General agreement prevails that accuracy and speed are at least

primary components of reading fluency, and therefore are appropriate measures of

fluency (Torgesen & Hudson, 2006; Deno & Marston, 2006). Some have argued that

fluency is more than simply reading speed and accuracy, and that fluency measures ought

to include comprehension of text (Pikulski, 2006; Topping, 2006; Torgesen & Hudson,

2006), while others would include oral reading with prosody (Torgesen & Hudson, 2006;

Allington, 2006). Historically, reading fluency has been measured by how quickly and accurately a student read a given text. Since much research data regarding the simple speed and accuracy measurements of oral reading rates are so closely correlated to reading comprehension, Torgesen and Hudson (2006) suggested that speed and accuracy factors may be the best indicators of fluency. Palumbo and Willcutt (2006) and Deno and Marston (2006) suggested that using curriculum-based measurement (CBM) to obtain reading rates by calculating the number of words read correctly in a minute (WCPM-words correct per minute) is a common and effective way to measure reading fluency.

Pikulski (2006) noted that since oral reading fluency without comprehension is not very valuable, fluency always ought to be assessed within the context of comprehension. Topping (2006, p. 114) commented, "any test of fluency should be introduced as seeking to measure how well the student can balance accuracy of reading and speed of reading in order to achieve good comprehension." Torgesen and Hudson (2006) pointed out that there is powerful converging data that indicates a strong relationship between simple measures of oral-reading rates and performance with that of measures of comprehension. Allington (2006) argued that reading in phrases with appropriate intonation and prosody (reading with expression) ought to be part of the measure of reading fluency. Unfortunately, he offered no suggestions regarding how to measure prosody. Torgesen & Hudson (2006) suggested that measurement of prosody may not be necessary, since prosody is often something which naturally occurs once a beginning reader has achieved a certain level or degree of automaticity. They also noted that investigators have found little evidence supporting the idea that prosody in oral reading affects comprehension of text (Torgesen & Hudson, 2006). "The most widely

used current assessments for reading fluency do not typically include measures of prosody, but appropriately focus on accuracy and rate to assess growth on this dimension of reading" (Torgesen & Hudson, 2006, p. 136).

Both Samuels (2006a) and Allington (2006) were highly critical of the popular Dynamic Indicators of Basic Early Literacy Skills (DIBELS) that has been widely used as a measure of student achievement in reading. Samuels (2006a) noted that while the term 'fluency' is part of the name of each sub-test, the tests are nothing more than one-minute tests of speed. Samuels (2006a, p. 43) cited a recent unpublished research study which evaluates DIBELS effectiveness noting, "Based on available data, the fairest conclusion is that DIBELS mispredicts reading performance on other assessments much of the time, and at best is a measure of who reads quickly without regard to whether the reader comprehends what is read." Allington (2006) added that DIBELS focus on automaticity of isolated word (and non-word) recognition is a measure of something quite different from reading fluency. Speed and accuracy of isolated words with little comprehension misses the point of reading for understanding (Allington, 2006).

Curriculum-based measurement (CBM) of oral reading growth essentially involves having students read an age appropriate text and counting the number of words they read correctly in one minute (Deno & Marston, 2006). This assessment ought to be done on a regular basis (weekly or monthly) to track each student's growth in oral reading rates. Over the past 30 years, CBM has undergone significant research, refinement, and development. Deno & Marston (2006) noted that research on CBM has led some to conclude that the number of words read aloud from a text in one minute may be the best available measurement of reading fluency. The chief benefit of CBM was that

it provides a sampling of student achievement over time, giving a reliable indicator of reading growth. They noted that CBM could not effectively measure for prosody or comprehension (Deno & Marston, 2006).

Some of the researchers in this text have conducted or referred to reading fluency studies that have used different versions of The Gray Oral Reading Tests (Hiebert, 2006; Torgesen & Hudson, 2006). There seemed to be at least some agreement that the Gray Oral Reading Tests, which focus on measuring the reading fluency components of speed, accuracy, and comprehension, gave a reliable indication of student reading fluency (Torgesen & Hudson, 2006; Hiebert, 2006).

Theoretical Literature Related to Reading Fluency Development

In the field of reading research, the concepts of reading fluency and automaticity have often been used interchangeably (National Reading Panel, 2000a). By understanding the general stages of reading development through which everyone progresses as they develop the skill of reading, it may become apparent which reading instruction strategies have been most beneficial to students at each phase of their reading development. In this brief section, the researcher described the current changing concept of fluency, outlined Jeanne Chall's landmark model of the six stages of reading development, and summarized the three general categories for theories on reading development.

Since LaBerge and Samuels' 1974 article on automatic information processing in reading, fluency has meant the freedom from word identification problems resulting in an emphasis on word recognition (National Reading Panel, 2000a). Reading fluency meant high-speed or automatic word recognition that frees cognitive resources to focus attention

on the meaning of a text. Previously, this was typically measured by a combination of reading rate (speed) and reading accuracy (freedom from errors) (Moyer, 1982). As the National Reading Panel (2000a) suggested, reading fluency moves beyond the automatic processes of word identification, rather it is the delicate balance of reading speed and accuracy balanced with comprehension of the text read. Non-fluent readers can perform only one task at a time, either they focus on word recognition or comprehension, while fluent readers multitask between decoding, automatic word recognition, and comprehension of text (Barrington, 2003). It is an ongoing challenge for teachers to bring all students to this stage of efficient multi-tasking of appropriate reading strategies.

As students acquire the skill of reading, like with the acquisition of most complex skills, they pass through various stages or phases of proficiency. Numerous researchers have proposed models and explanations of the process of reading development (Chall, 1996; Early Reading Expert Panel, 2003; Stahl & Miller, 2006). Helping students work toward the reading fluency stage has recently been recognized as a central goal of primary reading instruction (Early Reading Expert Panel, 2003; Richards, 2000). Often Chall's (1996) stages of reading development has been cited as a useful paradigm for understanding the characteristics, needs, and skills reading students need to acquire on their journey of reading development. The following chart (see Figure 2) outlines Chall's (1996) model of the stages of reading development.

Figure 2. Chall's model of the stages of reading development.

Stage	Name	Grade and Age	Characteristics
0	Pre-reading	Birth-age 6	--oral language and conceptual knowledge
1	Initial Reading or Decoding	Grades 1-2.5 Age 6-7	--phonemic awareness, phonics, breaking the code of print

2	Confirmation, Fluency, Ungluing from Print	Grades 2-3 Ages 7-8	--automatic decoding --gaining control of reading --much practice
3	Reading for Learning the New	Grades 4-8 Ages 8-14	--reading to learn --word meanings, connecting prior knowledge, strategy activation, and comprehension
4	Multiple Viewpoints	Grades 9-12 Ages 14-18	--critical analysis
5	Construction and Reconstruction— A World View	College Age 18 plus	--reading with discernment --constructing knowledge --synthesize critically

Chall noted that stages 0-2 are the developmental stages of reading (Chall, 1996). These

stages significantly overlap with one another, and children ages 5-8 typically have very

different reading instruction needs since they are often passing through these stages of

reading development at different times. Chall has noted that stage zero readers benefit

from a top-down, whole language model of reading while stage one readers benefit most

from a bottom up approach (Chall, 1996). As a student pass through stage two, Chall

(1996) suggested that they again benefit most from a top-down, whole language,

approach with emphasis on an immense amount of reading practice.

While some reading authorities would agree that the goal of reading instruction is

fluent reading of text with comprehension, there is considerable debate regarding how

that is achieved (Moyer, 1982; Wiederholt, 2001). Three general theoretical approaches

have evolved: bottom-up theories, top-down theories, and interactive theories

(Wiederholt, 2001; Moyer, 1982). In general, bottom-up theories focus on learning to

decode text through a mastery of the symbol-sound relationships of letters in words

(Wiederholt, 2001; Anderson, Wang, & Gaffney, 2006;). Advocates of this approach

have argued that as students master decoding skills, they eventually become better

comprehenders of the text they read (Wiederholt, 2001). Top-down theorists have

emphasized meaning and comprehension in reading, stressing whole words and words in

context in their approach to reading instruction (Wiederholt, 2001; Moyer, 1982;

Anderson, Wang, & Gaffney, 2006). Reading development, they have argued, has

happened as a natural by-product of placing students in a print-rich, reading, writing, and

speaking environment (Wiederholt, 2001). Stahl (1989) reasoned that effective reading

involves using several complementary sources of information and that sensory input

(bottom-up) and the memory or knowledge component (top-down) must interact in the

reading process. Interactive theorists propose that efficient readers use all sources of

information simultaneously, including both decoding and attending to word meaning, as

they process text (Moyer, 1982; Stanovich, 1980; Wiederholt, 2001). In the following

sections, research literature related to word wall instruction, considered a bottom-up

approach to reading instruction, and independent silent reading, often viewed as a top-

down reading instruction strategy, has been examined.

<div align="center">Theoretical Literature and Empirical Research Related to

Vocabulary Instruction and Word Walls</div>

One of the ongoing debates in reading research is the value of vocabulary

instruction or word study. The National Reading Panel (2000a) identified both

systematic phonics instruction and vocabulary instruction that uses repetition and

multiple exposures to vocabulary items as two of several effective reading instruction

strategies (Ehri, Nunes, Stahl, & Willows, 2001). Both of these instructional strategies

are integral elements of an effective word wall program. In this section, the researcher

examined the theoretical rationale of vocabulary instruction/word study, the arguments in

favor and against its value, and the empirical research related to the usage of word walls as a tool in primary level reading instruction. Since there is a lack of direct empirical research on the word wall teaching strategy, the researcher focused on citing related empirical research on vocabulary instruction.

Thorndike's vocabulary studies produced his famous *The Teacher's Word Book* in 1921, and it became a standard resource for vocabulary instruction for decades (Graves & Watts-Taffe, 2002). After one hundred years of vocabulary research, at least five key ideas have been identified: 1. vocabulary knowledge indicates verbal ability, 2. vocabulary difficulty is directly related to the readability of text, 3. teaching vocabulary improves comprehension (in selected text), 4. poverty restricts vocabulary learning, and 5. the disadvantaged have a smaller vocabulary than the advantaged (Graves & Watts-Taffe, 2002). The National Reading Panel (2000a) highlighted vocabulary instruction as one of three key areas of comprehension and indicated a need for reading instruction to include direct vocabulary instruction involving repetition and multiple exposures to vocabulary items that learners will find useful in many contexts. Nagy and Scott (2006) have estimated that children learn between 3000 and 4000 words each year resulting in a vocabulary bank of 25 000 words by the end of elementary school and over 50 000 words by the end of high school (Graves & Watts-Taffe, 2002). To become efficient, fluent, and effective readers, students must be able to recognize most words they read automatically (Ehri, 2005; Eldredge, 2005; Cunningham, 2005; Samuels & Flor, 1997). According to Chall's (1996) stages of reading development, second grade is the transitional phase when most students become 'unglued' from print by making the transition from reading by decoding to automatic recognition of words and word patterns.

Phases of Word Learning

In 1992, Ehri developed her theory of sight word learning, noting that there are essentially four ways to learn to read words: by sight, by decoding, by analogy, and by contextual guessing (Gaskins, Ehri, Cress, O'Hara, & Donnelley, 1997). She noted that recognizing familiar words automatically by sight was the most efficient way to read but that skilled readers would often revert to reading unfamiliar words by decoding, by analogy to known words, and by prediction based on graphophonic and contextual cues (Ehri, 1998). She delineated four phases of word learning: pre-alphabetic, partial alphabetic, full alphabetic, and consolidated alphabetic (Ehri, 1998). As a result of her empirical research studies, she concluded that word shape was not helpful in learning words since sight words were learned by forming connections between graphemes in the spelling and phonemes underlying the pronunciation of individual words (Ehri, 1998). At the pre-alphabetic phase, students recognized visual features of words (i.e. two tall letters in the middle of 'yellow'); at the partial alphabetic phase students relied on initial or final letters to identify words (initial letter 'k' and final letter 'n' might be read as 'kitten' or 'kitchen'); at the full alphabetic phase students fully analyzed the spelling matching all letters to sounds in a decoding fashion (c—a—t); and at the consolidated phase students combined letters into units for the purpose of reading (cr—ate) (Ehri, 1998; Gaskins, Ehri, Cress, O'Hara, & Donnelley, 1997). Eldredge (2005) has proposed that the natural progression in reading is from phonemes to words to fluency to comprehension. The results of his empirical studies lead him to conclude that phonics knowledge has a causal effect on word-recognition growth and that word recognition has a causal effect on reading speed and accuracy growth which indicate that "Phonics knowledge and word

recognition are precursors to fluency" (Eldredge, 2005, p. 161). This concept of

unitization of letters to words has its roots in LaBerge and Samuels' (1974) theory of

Automatic Information Processing.

Theory of Automatic Information Processing in Reading

Perhaps the most often cited article in the current research literature on reading

fluency has been LaBerge and Samuels' 1974 classic piece, "Toward a Theory of

Automatic Information Processing in Reading." This theory has sparked the

development of numerous other theories related to reading instruction. Their time-proven

and tested instructional practice of repeated reading has also given birth to abundant

variations of reading techniques and practices (Samuels, 2002). In this section, the

researcher has summarized their theory of automaticity and included additional

comments and validations from other researchers.

The very complex skill of reading is composed of numerous component sub-skills

involving several stages of information processing. LaBerge and Samuels (1974)

suggested these sub-skills in the visual memory include feature detection (shapes and

directionality), letter code, spelling pattern code, visual word code (word shapes), and

word phrases. Ritchey's (2004) empirical studies at the kindergarten level demonstrated

that reading component sub-skills such as letter-name and letter-sound fluency are

predictive of word reading and spelling skills. LaBerge and Samuel's (1974) posited that

as visual information enters the visual memory, features are detected (lines, curves,

angles, intersections, openness, as well as relational features left, right, up, down) which

feed letter codes, which activate spelling-pattern codes, which feed into word codes,

which may sometimes give rise to word-group codes. Some of these visual features

activate spelling patterns and words directly and these features detect characteristics such as word shape and spelling-pattern shape. As a beginning reader has been repeatedly exposed to these various elements of common words they eventually become recognized automatically and less attention is needed to recognize each elemental part of the visual stimuli (Logan, 1997). LaBerge and Samuels (1974) hypothesized that as visual stimuli activate visual memory, a chain reaction is initiated in phonological memory, episodic memory, and response memory which, when coordinated, enable the learner to derive meaning from written code. As the reader repeatedly rehearses these reactions over time, they eventually become automatic. In the same manner that one learns to play a sport like hockey, the learner must master each component sub-skill in coordination with the other sub-skills to play the game of hockey effectively (LaBerge & Samuels, 1974). Initially, when a reader first begins learning to read, each component sub-skill (like each sub-skill in a hockey game) requires a significant amount of attention and coordination with other sub-skills (LaBerge & Samuels, 1974). Fluent readers like professional hockey players, coordinate and perform these sub-skills in a fraction of a second, seemingly automatically (Samuels, 1997). The mastery of automatic recognition of words in text frees the reader from spending time and energy on the mentally intensive tasks of decoding thereby allowing them to invest their limited attention on the tasks of deriving meaning from the text and interacting with the ideas presented (LaBerge & Samuels, 1974; Samuels & Flors, 1997).

LaBerge and Samuels (1974, p. 293) stated, ". . . one of the prime issues in the study of complex skills such as reading is to determine how the processing of component subskills becomes automatic." They concluded that the process of reading is the result of

a mastery of component sub-skills (letter discrimination, letter-sound training, blending, etc.) and that fluent readers have presumably mastered each of the subskills at the automatic level (LaBerge & Samuels, 1974; Ritchey, 2004). As a result, the fluent reader has integrated his automaticity, and he is no longer as aware of the component nature of these sub-skills as he was when he was a beginning reader (LaBerge & Samuels, 1974). Fluent readers view reading as a unitary wholistic process. LaBerge and Samuels (1974) suggested that all readers must go through similar stages of learning to read but do so at different rates. They suggested there are three stages of reading: the non-accurate stage, the accuracy stage, and the automatic stage (LaBerge & Samuels, 1974).

The idea of developing automaticity of high frequency words in emergent readers proposed by LaBerge and Samuels in 1974, suggested, "If reading sub-skills are performed automatically, then higher-order aspects of the task, such as comprehension or metacognitive functions, can be performed effectively at the same time" (Samuels & Flor, 1997, p. 107; Stanovich, 2000). Kuhn and Stahl (2003) noted:

> Without such automatic processing, students will continue to expend a disproportionately large percentage of their attention on decoding, which in turn leaves them with an inadequate amount for comprehension. . . . In other words, fluency is a prerequisite if learners are to succeed at the primary purpose of reading the construction of meaning from text. (p. 4)

Their analysis of sixteen reading studies on fluency and comprehension revealed, "Generally, where an increase in fluency was found, there was also an increase in comprehension" (Kuhn and Stahl, 2003, p. 9).

McDonagh's 2003 study on developing automaticity at the component level in at-risk second and third grade readers indicated that fluency development increasingly became recognized as a vital component of reading instruction. That said, her research results revealed that at-risk students derived no differential benefit from developing automaticity of component skills over practice reading connected text (McDonagh, 2003). In another study of at-risk second grade readers, Bogan (2004) used a four-step intervention model which included word work with manipulative letters, explicit coaching in decoding and encoding, word reading strategies, and applied practice to develop automaticity and accuracy. His research results also failed to reveal any significant difference on the reading measures he assessed.   Other research studies on automaticity instruction have shown definite benefits. Collins' (1994) study of the affects of a reading recovery program, which focused on developing automatic processing strategies for letters and rhymes for 120 second and third grade at-risk readers resulted in significantly higher WRMT-R reading scores. Weber's (1988) study of regular fourth grade student's reading instruction level, found that students who used a computer program for ten minutes each day to practice and develop automaticity for specific orthographic features of words experienced a positive effect for word identification, spelling and reading skills. The mixed results of these research studies seemed to imply that some teaching strategies aimed at developing automaticity in early readers are effective while others are not.

Samuels and Flor (1997) have defined automaticity as the ability to perform complex skills with minimal attention or conscious effort. If reading sub-skills can be performed automatically (quickly, accurately, and effortlessly), the higher order skills of

comprehension and metacognitive functions can become effective at the same time (Samuels & Flors, 1997). The simultaneous processing of word recognition and comprehension is a requirement of skilled reading. Samuels and Flor (1997) argued that traditionally most skills have been practiced only until a high level of accuracy has been achieved. Walczyk (2000) noted that the only way to achieve automaticity was through the over-practicing of a skill and he reasoned that skilled drivers can talk and drive at the same time because the skill of driving has become mostly automatic, while the task of talking requires attention and control. Automaticity can only be achieved after an extended period of practice beyond high levels of accuracy (Samuels & Flor, 1997). Fluent reading skills involving automatic word recognition depend on the development of orthographic representations for words in the long-term memory, while practice of word reading to simply a high level of accuracy may only keep words stored in the short-term memory (Torgesen, Wagner, Rashotte, Burgess, & Hecht, 1997; Samuels & Flor, 1997). "Taking students well beyond accuracy decreases the amount of re-learning time needed after short periods away from the task" (Samuels & Flor, 1997, p. 114).

        After establishing the importance of automaticity of these component sub-skills in the performance of fluent reading, LaBerge & Samuels (1974; Samuels, 1976) turned their attention to ways to train students in reading sub-skills to reach the automatic levels. They noted that in most activities that involve skill learning, practice leads to habits, which lead to automaticity (i.e. musicians and athletes) (LaBerge and Samuels, 1974; Samuels & Flor, 1997). They concluded this principle also applies to the development of reading sub-skills, noting that the recognition of letters of the alphabet becomes automatic by multiple and successive exposures (LaBerge & Samuels, 1974). In the

same way, sound and spelling patterns become automatic by repetition of the visual and

articulatory sequences and the meaning of a visual word seems to achieve automatic

retrieval through successive repetitions (LaBerge & Samuels, 1974). Not only does

repetition progressively free the mind from attention to detail, continued repeated practice

of reading skills seemed progressively to result in the automatization or unitization of

larger chunks from individual letters to spelling patterns, to words, to word phrases

(LaBerge & Samuels, 1974; Samuels, 2006a). LaBerge & Samuels (1974) also noted that

this sort of higher-order chunking progresses as the child gains more experience with

reading. Reading fluency includes the ability to recognize words rapidly and accurately

(a necessity for good comprehension); therefore, children must develop automatic word

and phrase recognition abilities to enable fluent reading (Nathan & Stanovich, 1991).

When the process of word recognition takes little cognitive capacity, the reader can focus

attention on comprehension (Nathan & Stanovich, 1991).

Vocabulary Instruction

Word study or vocabulary instruction has had, as its goal, the increase in the

number of words beginning reading students know. Because of the strong correlational

link between vocabulary knowledge and comprehension documented by reading research,

some have suggested that by increasing student vocabularies, their reading

comprehension levels would also increase (Nagy & Scott, 2006). In this section, the

researcher has summarized numerous items related to vocabulary instruction research.

Since the beginning of the twentieth century, teachers have made lists of words

students ought to know (i.e. Dolch Lists, Thorndike's 1921, *The Teacher's Word List*,

and Fry and Kress's 2006, *The Reading Teacher's Book of Lists*). The challenge has

been that elementary school students add an average of between 1000 and 5000 words to their reading vocabulary each year (Nagy & Scott, 2006). Given that typical vocabulary teaching programs cover 10 to 12 words a week (400 words each year), the relevant questions becomes which words should be the focus of vocabulary study and which methods of vocabulary instruction are most effective.

A 1986 meta-analysis of the effects of vocabulary instruction in fifty-two research studies (Stahl & Fairbanks, 2006), revealed that vocabulary instruction had a slight but significant effect on reading comprehension. Vocabulary instruction also had a significant effect on the global measures of vocabulary knowledge (Stahl & Fairbanks, 2006). Mixed-methods vocabulary instruction, the kind that included both definitional and contextual information about each word, produced the greatest effects on comprehension and vocabulary measures (Stahl & Fairbanks, 2006). Methods that only provided definitional information, used drill and practice methods, and approaches that provided students with only one or two exposures of meaningful information about each word failed to produce reliable effects on comprehension (Stahl & Fairbanks, 2006). McKeown and Beck (2006) discovered that multiple exposures to new words in context were helpful for word learning. Additionally, they learned that activities requiring deep processing of new words, which required students working to create connections between new word meanings and prior knowledge, were also beneficial (McKeown & Beck, 2006). The researchers' meta-analysis concluded that vocabulary instruction has a slight but significant effect on the comprehension of passages containing taught words and is therefore a useful adjunct to the natural learning from context (Stahl & Fairbanks, 2006).

Current research has confirmed much of what Stahl and Fairbanks uncovered in their 1986 meta-analysis of vocabulary instruction (McKeown & Beck, 2006). The National Reading Panel Report (2000a) highlighted the importance of vocabulary instruction as one of three critical areas of reading instruction related to comprehension. Some of the results of the National Reading Panel's (2000a) analysis of research related to vocabulary instruction included the fact that in general: (a) vocabulary instruction led to gains in comprehension, (b) repeated exposure to vocabulary items was important for learning gains, and (c) pre-instruction of vocabulary words prior to reading facilitates both vocabulary acquisition and comprehension. McKeown & Beck (2006) found that multiple exposures of words used in different contexts help students gain knowledge of the flexibility of word meanings enabling them to decontextualize and recontextualize words as needed. McKeown and Beck (2006) also noted that the research evidence for the general effect of vocabulary instruction on comprehension is soft. Although knowledge about improved methods of vocabulary instruction has accumulated, the crucial unanswered question continues to be which words should be the focus of vocabulary instruction (McKeown & Beck, 2006). It is also not known whether vocabulary instruction is most helpful for: (a) increasing knowledge of specific words, (b) developing general meta-linguistic knowledge, (c) handling nuances of word meanings, or (d) if it simply acts as a snowball effect (as more words are learned, students are able to learn other words) (McKeown & Beck, 2006). Some have suggested that high frequency words should be the focus of vocabulary instruction (LaBerge & Samuels 1974; Samuels & Flor, 1997; Stanovich, 2000; Kuhn & Stahl, 2003; Cunningham, Hall, & Sigmon, 1999; Fry & Kress, 2006). McKeown and Beck (2006)

argue that words that are partially learned should be the focus of vocabulary instruction and that word selection for vocabulary instruction should focus on words that only 20% to 70% of the target group of students know.

Beck, McKeown, and Kucan (2002) advocated that vocabulary instruction focus on what they categorize as tier two words. Beck and McKeown (2006) defined tier one words as familiar words commonly found in daily oral conversation while tier two words are general domain sophisticated words of high utility for mature language users that are more characteristic of written language (i.e. inseparable, nuisance). They identify tier three words are domain specific words with narrow specialized meaning (i.e. microscope, cantata) (McKeown & Beck, 2006).

Current research has demonstrated that vocabulary acquisition strategies involving stories read aloud to students to promote vocabulary learning in young children was marginally successful (Coyne, Simmons, Kame'enui, & Stoolmiller, 2004). Follow up studies that have included repeated readings (three times per story) with direct explanation and review of new vocabulary along with additional follow-up activities have added considerably to the amount of vocabulary learned using the read aloud vocabulary instruction approach (McKeown & Beck, 2006; Coyne, Simmons, Kame'enui, & Stoolmiller, 2004).

Not everyone is in favor of vocabulary instruction as the best means to grow vocabulary knowledge and reading fluency in students. Richards (2000) cautions that automatic word recognition does not equal oral reading fluency and that although it may not be detrimental to fluency development, instructional practices must go further. Since written English text lacks definitive signs or cues to indicate phrasing, intonation, pitch,

and stress, Richards (2000) argues that teacher modelling of fluent prosodic reading and student practice is the best way to help students gain the skill of fluent oral reading of written text. Rasinski (2004) also cautions that fast reading of text doesn't equal fluent reading arguing that fluency consists of three dimensions: accuracy in word reading, automatic processing (decoding), and prosodic reading (the ability to parse text into syntactically and semantically appropriate units using expression, phrasing, pausing, and punctuation). In the widely quoted article "What Reading Does for the Mind," Cunningham and Stanovich (1998) stated that since the bulk of vocabulary growth occurs through language exposure (volume of reading) rather than through text instruction, having students read more written text is a more effective approach to vocabulary development. Their examination of printed texts compared to various conversational situations revealed that printed texts use a greater variety of words and more 'rare' words than oral language and that reading volume greatly expands one's vocabulary, contributes to growth in verbal skills, and increases one's general knowledge (Cunningham & Stanovich, 1998). As a result, they recommended providing children with numerous reading experiences as early as possible (Cunningham & Stanovich, 1998).

Numerous reading experts strongly advocate vocabulary instruction aimed at building sight word vocabulary knowledge, noting that developing automatic word recognition is essential for achieving reading fluency (Adams, 1990; Cunningham 2005; Ehri, 2005; Torgesen, Wagner, & Rashotte, 1999). Good readers recognize most words immediately and automatically without relying on context (Cunningham, 2005; Adams, 1990; Share & Stanovich, 1995). Ehri's studies (2005) have demonstrated that any word read a sufficient number of times automatically became a sight word read from memory

and that fluent readers read single words as whole units rather than by processing the letters of each word sequentially. This fits well with Logan's (1997) instance theory of automaticity which assumes that automatic processing is developed initially through retrieval of prior solutions from memory and that with practice, as automatization is developed, algorithmic computations are dropped in favor of memory retrieval (Logan, 1997). Applied to the development of automaticity in reading, when a reader has experienced their first exposure to a new word, the decoding process begins and a memory trace of the algorithmic computations for decoding that word remains in the pathways of the mind (Logan, 1997; Logan, Taylor, & Etherton, 1999). With repeated exposure and practice of that word, eventually the memory traces become stronger, the algorithmic computations were dropped, and the student simply uses memory retrieval to access the word whenever the stimulus is present (Logan, 1997; Logan, Taylor, & Etherton, 1999). Logan, Taylor, & Etherton (1999) suggested this might help account for a steep learning curve effect. Speece and Ritchey (2005) pointed out that their research has demonstrated that word level skills (accuracy and fluency) are the best predictors of oral reading fluency. They also suggested that early reading instruction (grade one) may need to target not only word recognition, but also fluent word recognition or word reading fluency (Speece & Ritchey, 2005).

Word Wall Advocates

The relatively recent rise in popularity of the word wall over the past decade may account for the lack of published research literature discussing its efficacy or usefulness. Additionally, since it is not a reading model or complete reading program but rather a supplementary phonics and vocabulary strategy as noted by Four Blocks creator and

word wall promoter Patricia Cunningham (Cunningham, Hall, & Sigmon, 1999;

Cunningham, 2005), it may not have attracted the attention of many researchers. The

underlying rationale for using word walls seems supported by current research literature

on vocabulary instruction and reading fluency development. In this section, the

researcher has highlighted the results of one piece of action research on the word wall

and noted the comments of some reading experts.

Walton's 2000, master's thesis on word walls studied how three first grade classes

and their teachers perceived and used the word wall. She found that the overwhelming

majority of first grade students primarily used their classroom word walls for help with

spelling during writing classes (Walton, 2000). Additionally, she discovered that the

emphasis each classroom teacher placed on their purpose for the word wall determined

how students viewed and used it (Walton, 2000). Walton (2000) also noted that

Cunningham first wrote about the word wall in 1978 and that Cunningham (1991),

Gaskins (1997), Moustafa, Pinell and Fountas, and Wagstaff (1999) were key proponents

of the word wall and that their primary purposes for advocating the use of word walls

were for either analogic phonics instruction and/or fast-paced instruction of high

frequency words.

Brabham and Villaume (2001) advocated using word walls for selected

instructional purposes such as to provide students with a visual scaffold to temporarily

assist in independent reading and writing, for word analysis, for vocabulary building, as a

reference for high frequency words, and as word models for common spelling patterns.

In addition to what Brabham and Villaume suggest, Cunningham (2005) advocated using

the word wall for analogic phonics instruction.

Word study that focuses on teaching both high frequency words and key words with common spelling patterns to serve as models to read unknown words has been empirically verified (Linan-Thompson, Vaughn, Hickman-Davis, & Kouzekanani, 2003; Gaskins, Ehri, Cress, O'Hara, & Donnelley, 1997). In *What Research Has to Say About Reading Instruction*, Graves & Watts-Taffe (2002) proposed four essential elements of an effective vocabulary program which including wide reading, teaching individual words, word learning strategies, and fostering word consciousness. In his 2003 book *The Fluent Reader*, Rasinski cited recent studies to advocate that word-reading practice using flashcards, word banks, and word walls can have a beneficial effect on student word-recognition skills. He also recommended that 100 high frequency words be learned each year in the primary grades, so that by the end of third grade students know, at minimum, Fry's list of 300 instant words (noted in Appendix A) which he suggested make up two-thirds of elementary reading materials (Rasinski, 2003).

Theoretical Literature and Empirical Research Related to Independent Silent Reading

In this section, the researcher has summarized the history and theoretical underpinnings of independent silent reading. He has also summarized the Matthew Effect for reading development and numerous empirical studies on various forms of in-class independent silent reading programs. Additionally, the researcher has examined several variations on traditional independent silent reading programs. Since in-class independent silent reading takes many different forms and varies widely in practice, the researcher has chosen to integrate the discussion of empirical research with the theoretical literature in this section.

<u>Traditional Independent Silent Reading</u>

Initially proposed by Lyman Hunt in the 1960's (Hunt, 1967; Gardiner, 2001; Trelease, 2006), sustained silent reading programs became very popular in the 1970's and have continued to be popular amongst reading teachers (Nagy, Campenni, & Shaw, 2000; Wray & Lewis, 1993). The basic proposition behind this approach to reading instruction is that reading is a skill that one must practice in order to develop and improve. If time is spent practicing the skill, one becomes proficient, while one who neglects practicing the skill becomes weak or incompetent in the skill (Stanovich, 1986; Trelease, 2006; Krashen, 2004). Stanovich (1986; Cunningham & Stanovich, 1998) called this the Matthew effect for reading development; proficient readers read more and become stronger readers while poor readers read less and become weaker readers.

In 1970, Hunt wrote an article suggesting that an ever-increasing period of uninterrupted sustained silent reading ought to be the primary activity of the reading period. He suggested that rather than focusing attention on the number of reading mistakes or lack of reading skills students may exhibit, it was more helpful to focus on their reading enjoyment, motivation, and ability to follow ideas in the text (Hunt, 1967; 1970). He titled his article, "The Effect of Self-selection, Interest, and Motivation upon Independent, Instructional, and Frustration Levels" (Hunt, 1970). He noted that when students were encouraged to choose reading material that was of interest to the readers, students' motivation to gain meaning from their reading would often transcend their frustration levels and exceed their reading instructional levels (Hunt, 1970). His view was that reading for ideas, rather than freedom from mechanical errors ought to be the

driving goal of reading instruction (Hunt, 1970). Pilgreen (2000) summarized Hunt's

view of sustained silent reading in the classroom into six guidelines:

1. The students read self-selected materials silently.

2. The teacher models by reading silently at the same time.

3. Students select one book, magazine, or newspaper to read for the entire time

    period.

4. A timer is set for a prescribed, uninterrupted time period.

5. No reports or records are kept.

6. The whole class, department, or school participates. (p. 10)

McCracken and McCracken (1971), building on Hunt's independent silent

reading practice, developed four recommendations for structuring an effective sustained

silent reading program:

1. Children should read to themselves for a limited amount of time.

2. Each student should select his own book, magazine, or newspaper.

3. The teacher or parent must read also in order to lead by example. This cannot

    be stressed too strongly.

4. No reports are required of the students. No records are kept. (Trelease, 2006,

    p.85)

The practice of sustained silent reading has become widespread. In 1993, Wray

and Lewis' study revealed that 87% of teachers of seven to eleven year olds they

surveyed in England were using daily or almost daily periods of sustained silent reading

for their students. Nagy, Campenni, and Shaw (2000) noted 67% of teachers (79 total) in

their American study also used sustained silent reading.

Gardiner (2001, p. 32) noted, "The primary goal of silent reading programs has always been to increase students' enjoyment of reading." A number of research studies (Yoon, 2002; Gardiner, 2001; Krashen, 2004; Arthur, 1995, Pilgreen, 2000) revealed a strong relationship between improved students' attitudes toward reading with daily reading opportunities in school. Gardiner (2001) also noted some studies that demonstrate improved reading rates, reading speeds, and reading interest amongst high school students who participate in sustained silent reading programs (Kornelly & Smith, 1993; Weller & Weller, 1999). Hunt's (1970) original idea of using independent silent reading in the classroom was to focus students' attention on the search for ideas in what they read. Hunt (1970) noted that the emphasis on reading error free carried a negative association and did not necessarily mean reading success. A positive focus on seeking out ideas in written text was his emphasis (Hunt, 1970). Reading for enjoyment for as little as 10 minutes per day has been demonstrated to produce a greater motivation and positive attitudes toward reading, especially in older students (Carbo, 1996; Gardiner, 2005; Yoon, 2002; Nagy, Campenni, & Shaw, 2000). Yoon's (2002) three decade meta-analysis of the effects of sustained silent reading on students' attitudes toward reading revealed a positive effect especially when students chose their own reading material for pleasure or information and were given a fixed period to read. These are all positive benefits that may be attributable to independent silent reading programs, but the question regarding whether independent silent reading programs help build reading fluency in early readers at the second grade level remains unanswered.

Samuels (2002), in his chapter on reading fluency in the book, *What Research Has to Say About Reading Instruction (3rd edition)*, strongly advocated for extensive

reading practice as one way to increase reading fluency. He argued that children become

fluent readers the same way outstanding athletes, musicians, etc. become experts, through

a combination of motivation, sound instruction in basic subskills, and extended practice

(Farstrup & Samuels, 2002; LaBerge & Samuels, 1974). Trelease (2006) advocated

automaticity as among the many benefits of sustained silent reading. He said, ". . .in its

simplest form, SSR allows a person to read long enough and far enough so the act of

reading becomes automatic. . ." (Trelease, 2006, p. 85). Stanovich's Matthew Effect for

reading development argued that students who start out as poor readers, often remain

poor readers because they spend less time reading than do good readers (Stanovich, 1986;

Cunningham & Stanovich, 1998). As a result, the gap between the two groups grows

each year as poor readers continue to be poor readers, and good readers become even

better readers. The National Reading Panel (2000a, p. 3-21) stated, "There are literally

hundreds of studies that find that the best readers read the most and that poor readers read

the least. . . ." They also referenced the National Assessment for Educational Progress

1998 Reading Report Card for the Nations and States (Donahue, Voelkl, Campbell, &

Mazzeo, 1999) which stated, "Fourth-grade students who reported that their teachers

gave them time to read books of their own choosing on a daily basis had a higher average

score than their peers who reported being given time to do so less often." In addition,

other reading experts have advocated for sustained silent reading time in schools as a way

to build reading skills (Krashen, 2004; Allington, 2001; Trelease, 2006; Pilgreen, 2000;

Adams, 1990; Anderson, Hiebert, Scott, & Wilkinson, 1985). Even with this chorus of

advocates, the National Reading Panel did not endorse the practice of in-class

independent silent reading (National Reading Panel, 2000b).

The Matthew Effect for Reading Development

Stanovich (1986; Cunningham & Stanovich, 1998) derived this concept for the reading development process from Matthew 25:29 in the Bible which suggests the rich become richer and the poor become poorer. He noted that in the domain of reading development and achievement, individual differences in early reading acquisition were magnified as they progress through the education process (Stanovich, 1993). Simply stated, children who begin the reading education process with few pre-reading skills (i.e. little phonological awareness) have progressively greater difficulty acquiring more complex reading skills (i.e. alphabetic coding, word recognition, comprehension, etc.). As students progress through their schooling, the gap between poor and fluent readers widens since unsuccessful readers become more frustrated, practice less, and lose motivation to read, and the negative spiral of cumulative disadvantage continues (Stanovich, 1993). He suggested that the converse is true for students who quickly develop effective decoding strategies and thus find reading enjoyable (Stanovich 1993). Samuels & Wu (2003) confirmed the Matthew effect for reading development in third and fifth grade students. They demonstrated that students who read daily over a ten week period for forty minutes per day outperformed, on a variety of tests including reading ability, speed ,and word recognition, students who read for only 15 minutes per day (Samuels & Wu, 2003).

National Reading Panel's Review of Empirical Studies on Sustained Silent Reading

The National Reading Panel (2000a) conducted a meta-analysis of empirical studies that tested the efficacy of encouraging student reading practice in school in terms of its impact on improving reading achievement. Their limited results called into

question the widespread belief that reading practice develops better readers. They

discounted hundreds of correlational studies that support the widespread belief that better

readers spend more time reading since it has been commonly accepted as already proven

(National Reading Panel, 2000a). They pointed out that correlation does not necessarily

equal causation and that better readers may simply choose to read more because it is an

activity they find enjoyable (National Reading Panel, 2000a). They argued that the

provision of more independent reading time in class does not necessarily result in better

readers (National Reading Panel, 2000a). After an extensive search of research articles,

only fourteen papers survived the National Reading Panel's (2000a) final review as high

quality empirical research. They noted one of the main problems with the studies they

reviewed had to do with what the studies that emphasized sustained silent reading

actually measured. None of the studies actually measured reading fluency (National

Reading Panel, 2000a).

> Although the immediate impact of encouraging students to read would be
> expected first to increase the amount of reading engaged in, then to improve
> fluency in the ways discussed earlier, and finally to improve comprehension, that
> is not how these studies have been conducted. Studies of encouraging students to
> read rarely measure the actual increase in amount of reading due to the
> encouragement procedures, and they measure only the ultimate outcome (i.e.,
> improvement in reading comprehension) rather than the intermediary
> enhancement to fluency that would be expected from the increased practice (p. 3-
> 21).

Most of the fourteen studies examined the impact of sustained silent reading (under a variety of labels) on student reading achievement. In most cases, students selected their own reading material, read silently without monitoring for about 20 minutes each day, and engaged in no discussion or written assignments tied to their reading. Teachers or other adults in the room also read during this period of sustained silent reading. Ten of the studies focused on elementary school students. Evans and Towner's (1975) study revealed no difference in reading gains between the SSR group and a group completing various reading skills worksheets after a period of ten weeks. Reutzel and Hollingsworth's (1991) study of fourth grade students compared treatments of three groups: thirty minutes of daily SSR reading time in school, thirty minutes of daily comprehension skill development lessons, and a split of 15 minutes of daily SSR/15 minutes of daily comprehension skill development over the course of 30 school days. All three groups made significant and similar gains on the four main measures of reading comprehension (drawing conclusions, finding sequence, main idea, and noting detail) resulting in Reutzel and Hollingsworth's (1991) conclusion that their results suggested favoring more in-school reading time over comprehension skill development lessons for fourth grade students since both methods produced equivalent gains. Collins's (1980) study of second through sixth grade students over a fifteen-week period revealed no difference in vocabulary or comprehension between Control groups that worked on spelling exercises and SSR groups. Langford and Allen (1983) discovered no difference in reading attitudes of fifth and sixth grade students and only a slight difference in word reading for the SSR group over the Control group. Summers and McClelland (1982) found no difference in reading attitudes or achievement in a five-month study of 65 intact

SSR treatment and control classes from nine elementary schools. Manning and Manning (1984) studied three variations of SSR in twenty-four fourth grade classrooms over an entire year. The two SSR groups that included teacher or peer discussion about what students read showed slight reading improvements over the Control group while the sustained silent reading only group did not reveal any difference (Manning & Manning, 1984). Morrow and Weinstein's 1986 study of six-second grade classes involving voluntary home or school-based reading programs over a nine-week period revealed that although participants did more school reading, reading attitudes and achievement levels were unaffected. The other three studies of elementary students (Peak & Dewalt, 1994; Vollands, Topping, & Evans, 1999; and Carver & Liebert, 1995) compared Control groups to groups using the commercial Accelerated Reader program. Participants in these studies did not realize any significant gains in reading achievement resulting from the use of the Accelerated Reader program (a computerized version of Sustained Silent Reading) during the course of these studies (Stefl-Mabry, 2006).

Of the four remaining studies, three focused on junior high students and one compared high school students. Cline and Kretke's 1980 study of junior high school students over a three year period was statistically unsound, poorly designed, and found no difference between the control and treatment schools on reading achievement tests. Davis's 1988 study of eighth grade students found some gains in comprehension for SSR medium-ability group students over the control in the course of one year. A well-designed ten-week study of seventh and eighth grade students (Holt & O'Tuel, 1989) noted vocabulary knowledge gains in SSR groups over the Control groups. There were no gains for either group in reading comprehension. Burley's 1980-summer study

compared reading comprehension and vocabulary gains of 85 high school students receiving 75 minutes of reading instruction for 30 days. His study found small reading comprehension gains in the SSR group over the other reading instruction programs. It is worthy to note, once again, that none of these studies attempted to measure reading fluency directly. As a result, of the National Research Panel's (2000) examination of these few studies, they could neither endorse nor discourage the effectiveness of sustained silent reading programs to build reading fluency. They recommended further study in this area be undertaken.

Although the National Reading Panel (2000a) has suggested there is a lack of evidence supporting the use of independent silent reading to improve how much students read or their general reading skills, Krashen (2005) has continued to champion its effectiveness for developing reading skills. Krashen (2001, p. 120) challenged the strict criteria of the National Reading Panel in their selection of studies for review and noted, "A comprehensive review of the literature indicates that the positive impact of recreational reading increases over time." He pointed out that since the empirical studies used by the National Reading Panel suggest that there is virtually no significant difference between free voluntary reading (FVR) and traditional reading instruction, the evidence favors free voluntary reading since it proved to be at least as good as traditional reading instruction. Krashen (2001) also argued that more study must be undertaken over longer periods (one year plus) since the benefits of free voluntary reading become more apparent over a longer term. He cited high school studies that lasted longer than one year noting they showed statistically significant positive results (Krashen, 2001). "At worst, the impact of free voluntary reading appears to be the same as that of traditional

instruction, and it is often better, especially when studies are continued for more than an academic year. . .” (Krashen, 2001, p. 1). He (2001) argued that The National Reading Panel has obscured, omitted relevant studies, and described several studies incorrectly.

The Power of Reading: Insights from the Research 2nd Ed.

Seemingly in response to the National Reading Panel’s Report, Krashen’s (2004) book claimed to offer groundbreaking research on literacy education. Krashen argued that independent reading, which he renamed free voluntary reading (FVR), is the most effective tool available for increasing literacy. Krashen (2004) took issue with the Report of the National Reading Panel’s (2000a) conclusion that research has not demonstrated clear evidence supporting the practice of independent silent reading in classrooms as an effective strategy for building reading skills.

Krashen (2004) acknowledged that there are numerous forms of in-school independent reading that might be considered. Along with numerous anecdotes supporting his premise, he generated a table of 54 research studies in which in-school free reading was compared to traditional reading programs. He emphasized, “In 51 out of 54 comparisons students using FVR [free voluntary reading] did as well as or better on reading tests than students given traditional skills based instruction.” (Krashen, 2004, p. 3). A significant problem with his comparisons was a majority of the research studies he cited were very old (1960’s and earlier), use only college students, high schools students or junior high students, or focus on students for whom English is a second language. First, traditional language instruction in the 1960’s and earlier is very different than what is used in many of today’s classrooms. Second, mild success of free voluntary reading programs at the college, high school, and junior high school levels does not mean it is an

effective instructional tool for beginning readers. Third, the success of free voluntary

reading for students learning English as a second language does not mean it is an

effective tool for beginning readers whose first language is English. The research he

cited throughout his book to support his premise normally shared one or two of these

challenges. Using the research he cited, one could reasonably suggest that in-class free

voluntary reading is a beneficial instructional strategy for English as a second language

students, unmotivated older readers (if they are given interesting reading material—he

suggests comic books), and older students (junior high age students and higher). He

provides little research-based support for in-class free voluntary reading as an effective

instructional strategy for beginning readers.

Empirical Research Supporting the Use of Independent Silent Reading

Numerous research studies and at least one government report claim great

benefits for students who engage in classroom independent reading experiences. The

1985 U.S. Department of Education Report stated that speed, accuracy, and decoding

skills were necessary for fluid comprehension of text. In addition, it noted the need to

extend independent reading experiences and stated, "Research suggests that the amount

of independent silent reading children do in school is significantly related to gains in

reading achievement." (Anderson, Hiebert, Scott, & Wilkinson, 1985). Kornelly (1993)

discovered that sustained silent reading improves reading speed and quantity of text read

by high school students. According to Lee-Daniels & Murray (2000), independent silent

reading in second grade is most effective when children have the opportunity to discuss

the books they have read with their peers or in teacher-student conferences. Manning and

Manning (1984) engaged in a study that revealed peer-interaction and/or teacher-

interaction of recreational reading material improved both reading attitudes and achievement scores (esp. peer-interaction) over simple sustained silent reading alone. Methe and Hintze (2003) demonstrated that teacher modeling of sustained silent reading during sustained silent reading periods increased student engagement in the activity. Cunningham and Stanovich's (1998) research revealed that reading volume helps expand a child's vocabulary knowledge, contributes to verbal skills, and leads to greater general declarative knowledge. They concluded that to maximize the benefits of developing children's minds, children need to receive an early start reading and they need to be given as many reading experiences as possible (Cunningham & Stanovich, 1998)

Lewis and Samuels (2003) undertook a meta-analysis of the literature on the relationship between exposure to reading and reading achievement. They found a positive and significant relationship between exposure to reading and reading outcomes (Lewis & Samuels, 2003). Although they noted that gains in comprehension scores were never statistically significant, they concluded that the greater amounts of in-class time students spent reading, the higher their reading achievement (Lewis & Samuels, 2003). They determined that 10-30 minutes of in-class reading per day was optimal, and that lower elementary grade students at the early stages of reading development seemed to benefit the most from in-class reading, although students with difficulty learning to read and ESL students also experienced special benefit (Lewis & Samuels, 2003). Of the 27 research studies that met their criteria for meta-analysis (in-school time to read versus no in-school time to read was one of several criteria), 17 showed a significantly positive relationship, 6 showed a positive but non-significant relationship, while none of the other research studies analysed showed significant negative results (Lewis & Samuels, 2003).

The SSR Handbook

Pilgreen (2000) distilled eight factors of successful sustained silent reading programs from an extensive review of research on sustained silent reading (explained in a following section): Access, Appeal, Conducive Environment, Encouragement, Staff Training, Non-accountability, Follow-up Activities, and Distributed Time to Read (Pilgreen, 2000). Her personal school experience along with her primary research participants were high school (tenth through twelfth grade) English as a second language students. As a result, her conclusions and recommended approach to organizing and managing a sustained silent reading program may have limited applicability and transferability to classroom settings in which students are beginning readers whose first language is English. In the remainder of this section, the researcher highlighted some of Pilgreen's research findings and briefly explained the eight common factors of successful sustained silent reading programs she identified.

Pilgreen (2000) constructed a useful comparison chart of the thirty-two free reading programs she studied. Twelve of the thirty-two studies involved students for whom English was a second language, and seventeen of the studies involved elementary students (first through sixth grade). Only three of these studies involved students exclusively in first through third grades. Of the three studies involving primary grade students, one was done in 1957 (Jenkins), another was done in 1967 (Pfau), and the third was conducted in Singapore (Elley, 1991). Pilgreen indicated that Elley's study did indicate a positive effect of statistical significant for comprehension for the English-as-a-subsequent-language grade one students while Jenkins's study did not include reading comprehension as a part of the research design, and Pfau indicated no statistical

significance for reading comprehension in favor of the comparison group. Of the remaining fourteen studies completed at the junior high level (seventh through ninth grade) and the high school level (tenth through twelfth grades), reading comprehension gains were only statistically significant in three studies, two of which were for English as a second language students. When attitude toward reading was part of the research design, the results were statistically significant in favor of sustained silent reading in both English as a second language students and English language students half of the time (six of these 12 studies included attitude as a measure).

From these studies, Pilgreen (2000) distilled eight factors that seemed to contribute to success in sustained silent reading programs. She then used these eight factors in her own research study. She implemented all eight of the SSR success factors for her own five ESL high school classes and compared reading gains with another high school that used only four of the factors she identified. Note that tester bias is a concern since Pilgreen personally tested all students using the Stanford Diagnostic Reading Test (Pilgreen, 2000). After the sixteen-week study, the results revealed that both groups gained in reading comprehension, but that the experimental group gain, using all eight factors, was only modestly statistically significant. The enjoyment, frequency, and range of pleasure reading increased more in the experimental school.

She identified access, appeal, conducive environment, encouragement, staff training, non-accountability, follow-up activities, and distributed time to read as the eight factors for successful sustained silent reading programs (Pilgreen, 2000). The access factor, factor one, meant that trade books, magazines, comics, newspapers, and other reading materials needed to be provided to students directly. The second success factor,

called the appeal factor, meant that successful programs provided a broad variety of

reading material that students both wanted to and had the ability to read. Factor three

(conducive environment factor) required a quiet, uninterrupted conducive reading

environment. Pilgreen (2000) noted that a fourth key success factor involved students

being encouraged to read in three ways: seeing their teacher model reading, opportunity

for students to share and discuss of book they read, and direct encouragement and support

for the activity of independent reading from teachers and parents. Pilgreen (2000) stated

that staff training (factor five) regarding how to link students with appropriate books,

along with how to encourage actively independent silent reading was another key factor

for success. Factor six, non-accountability, meant that reading was to be done purely for

pleasure without tracking what or how much was read and without the requirement of

assessments, book reports, language work, or other obliging activities. Factor seven

encouraged voluntary and interactive follow-up activities based on readings such as book

sharing with peers, art, music, puppetry, dramatizations, science-related activities, or

other non-evaluative actions. Success factor eight involved getting students to read on a

regular basis either daily or at least twice each week. Pilgreen's (2000) research and

success factors appear to be somewhat helpful for English as a second language students

in high school. Whether these factors translate into reading fluency gains for English as a

first language students who are beginning readers in primary grades is a question this

research study addressed.

There is definite support for the idea that sustained silent reading programs in

junior high, secondary schools, and at the college level may help to improve the reading

rate of students and attitudes toward reading (Gardiner, 2005; Gardiner, 2001; Kornelly

& Smith 1993). The mounting evidence as to the benefit of independent silent reading in primary classrooms appears to call into question the findings of the National Reading Panel. The National Reading Panel's (2000a; Shanahan, 2002) findings that there was a lack of significant experimental research to validate the efficacy of sustained silent reading programs to improve reading fluency, especially at the primary level, is one of the key motivations for the researcher's undertaking of this study.

Automaticity Theory and Repeated Reading

In 1979, Samuels published an article, "The Method of Repeated Reading" which explained the reading instruction approach he developed based on his automaticity theory of information processing outlined in a previous section (Samuels, 1997). Simply stated, his theory proposed that fluent readers decode text automatically, leaving attention free for the task of comprehension of ideas, while beginning readers who do not decode automatically are required to spend their attention on the decoding process first and then on deriving meaning from the text. The result for beginning readers who did not have the skill to decode automatically was that the process of deriving meaning from text was much slower and more difficult (Samuels, 1997). A number of others validated and extended his initial automaticity theory and the repeated reading approach throughout the eighties and nineties (Reutzel & Hollingsworth, 1993; Rasinski, T., Padak, N., Linek, W., & Sturtevant, E., 1994; Dowhower, 1987; Moyer, 1982; Stanovich, 1987; Cunningham & Stanovich, 1997; National Reading Panel, 2000a). This resulted in the development of a variety of skills-based reading instructional approaches and practices that focused on reading practice and repetition (Reutzel & Hollingsworth, 1993; Dowhower, 1987;

Stanovich, 1987; Cunningham & Stanovich, 1997; Stahl, Heubach, & Cramond, 1997;

National Reading Panel, 2000a).

Samuels never touted repeated reading method as an entire reading program for

teaching all beginning reading skills; it was intended to supplement developmental

reading programs (Samuels, 1997). It involved having students read and reread a short

meaningful passage until they reached a satisfactory reading fluency level and then they

would begin the same procedure with a new reading passage (Samuels, 1997). Samuels

(1997) defined fluency as accurate word recognition and reading speed. Sometimes

audio support was also used in the initial stages of practice reading then it was removed

so that the student was reading alone (Moyer, 1982). Samuels (2006a) credited Chomsky

with the idea of using recordings to assist beginning readers during their reading practice.

The graphing of word recognition errors and reading rates was motivating for many

students since they could see their reading fluency gains over time (Samuels, 1997).

Stanovich (1987; Cunningham & Stanovich, 1997) endorsed the automaticity

theory, noting a key characteristic of efficient readers is that their attention is directed at

comprehending text rather than lower processes of letter and word recognition. He noted

that it is capacity allocation at the word level by the good reader was minimized, not the

number of visual features that are processed. "Skilled readers are effective processors in

every sense: They rather completely sample the visual array and use less capacity to do

so" (Stanovich, 1987, p. 167). Stahl (Stahl, Heubach, & Cramond, 1997) developed and

advocated his Fluency Oriented Reading Instruction (FORI) approach, a variation of

Samuels repeated reading approach that also included a variety of in-class and out-of-

school re-reading practice opportunities (echo reading, choral reading, independent silent

reading, etc.). In 2003, Kuhn and Stahl suggested that repetitive approaches to reading

fluency instruction do not hold a clear advantage over non-repetitive approaches.

Another study demonstrated no significant difference in effect for repeated reading over

listening to a fluent reader while reading along silently, although both approaches were

equally effective in improving reading fluency of third grade students (Rasinski, 1990).

As noted in the next section on FORI, Kuhn (2005) completed a study that confirmed this

notion that wide reading is more beneficial for growth in reading comprehension than

repeated reading, although repeated reading does have benefits.

Fluency Oriented Reading Instruction (FORI)

In an effort to combine reading research theory with effective practice which

included the incorporation of Samuels (1979, 1997) theory and practice of repeated

reading, Stahl and Heubach (2006; Stahl, Heubach, & Cramond, 1997) developed and

researched the effectiveness of what they called Fluency Oriented Reading Instruction

(FORI). Because of its initial success in a two-year study, this approach was to be further

examined in a five-year study that has yet to be completed (Kuhn & Schwanenflugel,

2006). The researcher has highlighted the goals of FORI, an explanation of the FORI

approach, and summarized the results of four of their studies in the following paragraphs.

The overall goal of FORI was to help children move from the accuracy driven

decoding stage of reading development to the automaticity and fluency stage of reading

development. The FORI program was initially developed for second grade students.

Stahl and Heubach (2006) summarized their five goals of FORI in the following manner:

1. Lessons will be comprehension oriented, even when smooth and fluent oral

reading is being emphasized.

2. Children will read material at their instructional level.

3. Children will be supported in their reading through repeated reading.

4. Children will engage in partner reading

5. Children will increase the amount of reading that they do at home as well as in school. (pp. 180-181)

FORI is essentially composed of three parts: home reading, choice reading, and a redesigned basal reading program (Stahl, 2002). The home reading portion involves students engaging in reading practice with someone at home for 15-30 minutes each day and may include both books of the child's choosing and the story practiced at school (Kuhn & Schwanenflugel, 2006). The choice reading component involves students reading a book of their own choice for 15-20 minutes at school every day. The redesigned basal reading lesson proposed by Stahl and Heubach (2006) allowed for teacher flexibility in its use. It consists of a core set of components for a fluency-based classroom reading which allows for optional add-in activities (see Figure 3).

Figure 3. A model fluency oriented lesson plan.

Read story to class	
Discuss story	
	Option: Echo Reading
Children read story at home	
	Option: Children learn one section of text
	Option: Children read story at home two or more times
Partner reading of story	
	Option: Children read story as play
Children do journals/worksheets in pairs or as a class	

(Stahl & Heubach, 2006, p. 183)

The results of their initial 2-year study of second grade students showed significant gains in reading fluency, both in reading rate and reading accuracy. Since they decided to eliminate the use of a Control group after the first year of the study, they assumed a Control group of 1-year grade level growth for the purpose of comparison (Stahl & Heubach, 2006). The result was that in the first year of the study the average gain of reading fluency for students was 1.88 grade levels on the individually administered Qualitative Reading Inventory (Leslie & Caldwell, 1988). During the second year of the study, students demonstrated an average gain of 1.77 grade levels on the same inventory. They also noted that students made average gains in reading rate of at least 10 words per minute from October to February. Additionally, they noted that the arrangement of partner reading pairs did not have a significant effect on performance. Performance for all types of pairing during partner reading was very high, and children responded most positively to this aspect of the new reading program. When students chose their own partners for reading, they predominantly based their choice of past and current friendships (Stahl & Heubach, 2006).

Another noteworthy observation they made was that when students chose their own reading material, they would choose reading material at or near their instructional level (their reading accuracy rate of this material was between 92% and 100%—the average was 95.5% accuracy) rather than choosing less challenging material at their independence reading level, traditionally 98% reading accuracy (Stahl & Heubach, 2006). Because of this observation, Stahl and Heubach (2006) suggested that during independent silent reading time in the classroom, children normally chose reading material that is at their appropriate instructional reading level. They also noted that for

grade two students, the teacher was by far the dominant influence on student book choice (Stahl & Heubach, 2006).

As expected, the greatest effect of FORI was on reading rate and accuracy. Their results supported the notion that reading repetition is a key to increasing reading fluency. In a later presentation, Stahl suggested that repeated reading might not produce higher results but that the higher results may instead be due to an increased amount of reading (Stahl, 2002; Kuhn & Stahl, 2003). Because of a lack of Control group, they did not feel it would be appropriate to report comprehension measures (Stahl & Heubach, 2006). Kuhn's (2005) study compared the effects of repeated reading and non-repeated reading approaches and found that although both groups of second grade students made greater gains in fluency (prosody and word recognition) over a 6 weeks when compared to the Control group, the greater growth in comprehension was experienced by the non-repeated reading group. This result confirmed the notion of Kuhn and Stahl (2003) that although fluency instruction that focuses on reading practice is beneficial, repeated reading of a text does not appear to benefit the growth of comprehension as much as non-repeated reading/wide reading of a variety of texts (Kuhn, 2005). Reutzel and Hollingsworth (1993) studied the effects of another variation of repeated reading, Oral Recitation Lessons, on second grade students and found a positive significant effect for fluency and a positive effect for three of four comprehension measures over the Control group (Round Robin Reading) over a four-month period.

In a follow-up replication study of grade two students using FORI and wide reading instruction, Stahl and Heubach (2005) again noticed similar significant gains in reading measures for both approaches (Kuhn & Schwanenflugel, 2006). He compared

reading gains using the GORT-4, the TOWRE, and the WIAT assessment tools over the course of a year (Stahl & Heubach, 2005; Stahl, 2002). He ran into some challenges with his Control groups and ended up having to make his comparisons using historical controls (Stahl, 2002). The FORI approach essentially involved having students re-read one grade equivalent text (usually from a basal reader) between four to seven times over the course of one week (Stahl & Heubach, 2005). In the study, teachers used a variety of teacher reading, teacher-led discussion, choral reading, echo reading, partner reading, home reading, and extension activities for each story every week. Additionally, students received daily class time for reading other books of their choice and expected to read additional books at home for 15-30 minutes each day. Students in the Wide Reading instruction group did the same, but instead of rereading the same story over the course of a week, they read a primary text two to three times and two secondary texts once or twice (Stahl & Heubach, 2005). Both approaches resulted in significant word reading efficiency and comprehension gains, while only the wide reading instruction group made significant gains in text reading rate compared against the historical Control group (Stahl & Heubach, 2005; Stahl, 2002). These results led the researchers to conclude that, "it is likely that it is not the repetition of text itself that is key to the development of fluency but the use of scaffolded supports and the focus on extensive oral reading of more difficult texts that lends to the effectiveness of the methods." (Kuhn & Schwanenflugel, 2006, p. 210).

Hiebert (2005) undertook a 20-week study of FORI using 2-second grade classes to compare the text difficulty on reading fluency development. One intervention group used literature-based basal readers while the other intervention group used content-based

science and social studies texts with few rare or multisyllabic words (Hiebert, 2005).

When compared to a Control group, both intervention groups experienced relatively

similar gains in reading comprehension (Hiebert, 2005). Both intervention groups also

experienced greater gains in reading rate, but the content group experienced the greatest

gain in reading rate (Hiebert, 2005).

R^5 (Read and Relax, Reflect and Respond, Rap)

　　　Kelley & Clausen-Grace (2006) re-tooled a sustained silent reading program for a

third grade class based on current research on independent silent reading. They called

their re-tooled SSR program R^5 that stands for Read and Relax, Reflect and Respond, and

Rap. Essentially the program required grade three students to spend 10-25 minutes

reading self-selected texts three times each week. After reading, they record the date,

title, author, and genre in a reading log along with a brief written response to the text.

They are also required to write a reflection on their use of metacognitive practices

(prediction, summarization, literal questioning, interpretation, reflection, and

metacognitive awareness) taught during mini-lessons, guided reading, and read-alouds.

Students then discuss their reflections on the metacognitive practices used during their

reading time with a partner followed by a whole class sharing of their metacognitive

practices by partner. After seven months, the results included 100% of students scoring

at independent or advanced levels for wide reading and self assessment/goal setting

whereas initially only 33% so the students scored at the independent or advanced levels

(Kelley & Clausen-Grace, 2006). They also noticed a substantial increase in variety of

genre, comprehension, and all areas of metacognitive practices with the greatest gain in

metacognitive awareness (Kelley & Clausen-Grace, 2006). They also noted a strong

reading culture was established and that all students had become highly motivated readers by the end of the seven months.

<div align="center">Implications For This Study</div>

There seems to be widespread agreement in the field of reading research that all reading students progress through a number of stages or phases of reading development (Chall, 1996; Early Reading Expert Panel, 2003; Stahl & Heubach, 2006). A variety of names are ascribed to these stages of reading development, but there is considerable agreement that each student will navigate through these phases of reading development at different rates depending on a variety of factors. These factors include, but not limited to: (a) pre-reading exposure to print, (b) natural ability to master pertinent skills and reading component sub-skills, (c) the literate-rich or literate deficient environment in which the child is nurtured (both in the classroom and at home), (d) the degree to which phonemic awareness and phonics instruction are emphasized and mastered, and (e) the opportunity the student is given to practice successful reading (Early Reading Expert Panel, 2003; Stahl & Heubach, 2006; National Reading Panel, 2000a). Current research suggests that certain instructional strategies are more suited to the development of specific reading skills and component sub-skills at each phase of reading development LaBerge & Samuels, 1974; Stahl & Heubach, 2006). As a person masters, to a level of automaticity, each reading sub-skill, new reading strategies are employed while formerly useful strategies have either become automatic (integrated into the one's overall reading schema) or have become of limited usefulness and dropped from regular practice (LaBerge & Samuels, 1974; Stahl & Heubach, 2006). Fluent readers employ automatic word recognition skills to high frequency and familiar words while they may use

decoding strategies to read unfamiliar and new words (Osborn, Lehr, & Hiebert, 2003; Adams, 1990). As a result, fluent readers were able to focus on deriving meaning from the text because their mental energies were freed from decoding most words since they have become automatically recognizable. The zenith of benefit for reading students using the word wall and independent silent reading may be during the beginning of the automaticity and fluency stages of reading development respectively. It appears that the majority of reading students seem to transition through the automaticity and fluency phases of reading development in grades two and three (Chall, 1996). Alternately, the kind of word wall and word wall strategies and the form of independent silent reading programs used in the classroom may benefit students best by tailoring the respective strategies to focus on building the essential reading sub-skills characteristic of each phase of reading development. Helping students work toward the reading fluency stage is a central goal of primary reading instruction (Early Reading Expert Panel, 2003; Richards, 2000).

With the current popular use of word walls and word wall activities in first through third grade language arts classrooms, the question of their efficacy in developing automaticity and fluency was worth investigation. There is a dearth of research on the effectiveness of the word wall teaching strategy regarding the development of automaticity or reading fluency in first through third grade students. There does appear to be significant support for various forms of word study or vocabulary instruction (National Reading Panel, 2000a). While it seems reasonable to assume that developing automaticity of high-frequency words and common spelling patterns should lead to improvements in reading fluency among beginning readers, the question is open as to

whether the high frequency/chunking word walls are effective instructional tools to help accomplish this task. Given the numerous approaches to using word walls and the convoluted understanding of the theory behind word walls, the researcher had to train the teachers in this study in the basic theory behind word walls and in a consistent practice of using word walls. He emphasized that Word Wall group teachers make as their goal on a daily basis developing automaticity of high frequency words and common spelling patterns in second grade students.

The value of independent silent reading seems to be in building reading rate/speed for older students (especially in secondary school), building a positive attitude toward reading in both elementary and secondary students (reading is a pleasurable activity), and for English as a second language learners (Nagy, Campenni, & Shaw, 2000; Krashen, 2004, Pilgreen 2000). The National Reading Panel's (2000a) position, after reviewing current research on the effects of independent silent reading on student reading amounts and reading skills, was neutral towards the value of independent silent reading regarding the development of reading fluency. Although intuitively appealing, there is a lack of empirical research demonstrating that independent silent reading in the classroom is an effective way to improve reading fluency in beginning readers at the primary level (National Reading Panel, 2000a). Still, some leading researchers consider independent silent reading a very valuable tool for developing reading fluency in beginning readers. Their also appears to be no consistent classroom practice of independent silent reading. Pilgreen's (2000) review of research suggested eight common factors in successful sustained silent reading programs. The factors she identified are very similar to guidelines suggested by Hunt (1967) and McCracken (1971). Although the focus of her

study was on secondary school English-as-a-second-language students, teachers should

be able to implement, at the primary grade level, many of the principles she identified.

Training teachers in these eight success factors and having them incorporate most of

them into daily, independent silent reading practice in their classrooms may provide

important evidence as to its effectiveness regarding reading fluency development of

second grade students.

CHAPTER THREE

Methodology

This chapter explains the methods the researcher used to carry out this research study. It includes a general description of the nature and research design of this study, the research context, the research participants and subjects involved in the study, the assessment instruments used in the collection of data, the procedures used to carry out the research design, and how the data was analyzed to answer the research questions.

General Research Design

This research study was a quantitative, quasi-experimental design involving a comparison of the Control group and two treatment groups. Because the study took place in pre-existing educational settings (established schools and intact classes), the researcher was not be able to randomly assign individual students to the Control group or to the treatment groups. The researcher did randomly assign intact classes along with their respective teachers to either the Control group or one of the two treatment groups.

The research study involved individually pretesting all second grade students involved in this study to determine their reading accuracy, reading rate, reading fluency, and reading comprehension scores as well as their individual word reading and non-word reading (phonetic decoding) efficiency levels. Students in the Control group classes received their normal classroom reading instruction without the use of a word wall or regular independent silent reading period for the 12-weeks of the study (September 18 through December 8, 2006). Students in the treatment groups received either 12 weeks of daily word wall instruction and activities (WW treatment group) in their classrooms for

15 minutes each day or 15 minutes of daily independent silent reading (ISR treatment group) in their classrooms by their regular classroom teachers. During the 12 weeks of this study, students in the WW treatment group did not engage in regular periods of whole class independent silent reading in their classrooms and students in the ISR treatment group did not have a word wall or receive word wall instruction in their classrooms. At the end of the 12-week study, all students in the study were individually posttested for reading accuracy, reading rate, reading fluency, reading comprehension, oral reading quotient (overall reading ability), individual word reading and non-word reading (phonetic decoding) efficiency, and total word reading efficiency. The researcher employed a statistical procedure known as the mixed-model analysis of variance to analyze (ANOVA) the data from these assessments to determine if either of the treatments made a statistically significant difference in the reading fluency development of students over the 12 weeks of the study when compared to the Control group (Shannon & Davenport, 2001). The researcher used one-sample t tests to compare gain scores among the three groups over the 3 months of the study.

<div align="center">The Research Context</div>

This research study took place in six classrooms in four elementary schools over 12-weeks in the fall of 2006. Pretesting of students was done during the second week of school (September 12-14, 2006) and the study began on Monday, September 18, 2006. Posttesting took place in the second week of December (December 11, 12, and 15) after the conclusion of the 12 weeks ending on Friday, December 8, 2006. The study took place in four private Christian schools in southern Ontario. All of these schools are within an hour driving distance of one another. For purposes of confidentiality, the

researcher has referred to the schools by the following fictitious names: Matthew School, Mark School, Luke School, and John School. Three of the schools are full members of the same association of Christian schools while the fourth school is occasionally involved with this same association of schools to a limited degree. All four schools are well established in their respective communities and rooted in a Dutch Christian Reform tradition of the Christian faith. The students and supporting families are from a variety of Protestant Christian faith traditions.

Matthew School was located in a large city and had a student enrolment of 350 students in preschool through eighth grade. Many students were bussed to school or driven to school by their parents. They have two-second grade classes and both classes participated in this research study. A membership of parents and supporters own and govern the school through an elected board. The school receives no government funding and relies on the donations of supporters and student tuition payments for funding. The school's curriculum reflects the general provincial curriculum guidelines for each subject and grade level. The primary teachers began using many elements of the popular Four Blocks® Literacy Model several years ago.

Mark School was located in a rural country setting and it had a student enrolment of 231 students in kindergarten through eighth grade. Most students were bussed to school from the surrounding towns and areas. They have a single second grade class that participated in this research study and a split first and second grade class that did not participate in the study. A membership of parents and supporters own and govern the school through an elected board. The school receives no government funding and relies on the donations of supporters and student tuition payments for funding. The school's

curriculum reflects the general provincial curriculum guidelines for each subject and

grade level. The primary teachers began using many elements of the popular Four

Blocks® Literacy Model two years ago.

Luke School was located within a large city and it had a student enrolment of 300

students in kindergarten through eighth grade. Many students were bussed to school or

driven to school by their parents. They had a single second grade class that participated

in the research study and a split first and second grade class that did not participate in the

study. A membership of parents and supporters own and govern the school through an

elected board. The school receives no government funding and relies on the donations of

supporters and student tuition payments for funding. The school's curriculum reflects the

general provincial curriculum guidelines for each subject and grade level. The primary

teachers have used the popular Four Blocks® Literacy Model for several years.

John School was a large rural school that had a student enrolment of 557 students

in kindergarten through twelfth grade. Most students were bussed to school from the

surrounding towns and areas. Both of their second grade classes participated in this

research study. A membership of parents and supporters own and govern the school

through an elected board. The school receives no government funding and relies on the

donations of supporters and student tuition payments for funding. The school's

curriculum reflects the general provincial curriculum guidelines for each subject and

grade level. Both second grade teachers currently use a few elements of the popular Four

Blocks® Literacy Model (including word walls) while their literature program is rooted in

a classical education approach that emphasizes the study of classical novels.

<u>The Research Subjects</u>

The research participants and subjects for this study included six teachers and their students in 6 second-grade classes. One hundred twenty-one second-grade students served as the subjects in this study. Male students composed 48.6% of all subjects while 51.4% were female students. The majority of students were Caucasian (92.6%), while 3.3% were East Indian, 2.5% Negro, and 1.6% Asian. All of the students were between the ages of six years one month and eight years one month at the beginning of the study (mean age 6 years 8 months). None of the students had familiarity with the reading assessments used in this study. Thirty-nine students were part of the Word Wall treatment group, 42 students were part of the Independent Silent Reading treatment group, and 40 students were in the Control group. All of the teachers in this study were Caucasian females between the ages of twenty-five and forty-five years of age and they had all previously taught second grade students. None of the teachers had familiarity with the reading assessment instruments. All of the teachers had formerly used some form of word wall and some form of independent silent reading in their respective classrooms in previous years.

In the school selection process, the researcher initially identified all of the established private Christian schools affiliated with a particular Christian school association within an hour's drive of one another. The researcher had contacted both the public and separate school boards in the area about participating in this study, but they indicated they were too busy to participate. The researcher chose this particular Christian school association because there were a number of these schools in the area, and the schools that are part of this association tend to be well established and relatively

consistent with one another in their curricular programs and overall school standards.

This preliminary research resulted in a list of eight potential school participants. To

maintain homogeneity in the classes under study, the researcher eliminated all schools

that did not have at least one single second grade class. Next, the researcher then

contacted the principals at the seven remaining schools to explain the proposed study and

asked them to consider participation in the study for the fall of 2006. After consultation

with the second grade teachers at their respective schools, four principals (and six

classroom teachers) agreed to participate in the study. One principal agreed to have his

school participate on condition that his new grade two teacher (who would not arrive in

the area until August) was agreeable. Since this was her first year teaching and the other

teachers each had more than one year experience teaching second grade, the researcher

decided to exclude that school from participation in the study (see Appendix G for further

information regarding years of teaching experience, classroom composition, and reading

programs implemented). The other two schools contacted by the researcher decided to

decline the offer to participate in this research study. The researcher randomly assigned

the six teachers that agreed to participate in the study to either the Control group or one

of two experimental groups. Each teacher had previously used various forms of

independent silent reading and word walls in their respective classrooms although it was

evident from preliminary discussions with the teachers that there was no standard or

common approach for using the reading instruction strategies.

     The researcher randomly assigned these teachers and their respective classes to

the Control group or one of the two experimental groups, the researcher trained each of

the teachers in the experimental groups in the educational theory and instructional

strategy they would be using in this study (See Appendix D & E for an outline of the training they received). The researcher developed and trained the teachers in this study based on his study of the current reading research relevant to these two reading instruction strategies. All of the teachers agreed to implement these teaching strategies for the 12 weeks of the study and kept an annotated log of their daily activities regarding the reading treatment strategies they used.

<center>Assessment Instruments Used in Data Collection</center>

The researcher collected data from both the students and teachers in this study. The researcher directed the research team in the collection of data from the students at the beginning and end of the 12-week study using two published reading assessments to compare several elements of their oral reading fluency growth. The researcher chose the Gray Oral Reading Tests, fourth edition (GORT-4) to assess reading fluency of connected text with comprehension and the Test of Word Reading Efficiency (TOWRE) to assess isolated word and non-word reading fluency skills. Reading researchers have endorsed the use of both oral reading fluency and the reading of isolated word lists as effective, appropriate, and reliable ways to assess reading expertise especially of primary age students (Fuch, Fuch, Hosp, & Jenkins, 2001; Richards, 2000; Logan, 1997; Wiederholt & Bryant, 2001; Torgesen, Wagner, & Rashotte, 1999). Additionally, the researcher collected data from the teachers in the form of an annotated reading instruction logs and post-study interviews to gain a fuller picture of the reading instructional program each teacher used throughout the study. A summary of results of these reading logs and posttest interviews is included in Appendix G.

At the conclusion of the study, the researcher collected the annotated reading instruction logs each of the teachers kept during the study. This helped the researcher evaluate, in a subjective and qualitative manner, how well each teacher implemented the reading strategy intervention each teacher used throughout the study. Furthermore, at the conclusion of the study, the researcher had each teacher complete a reading instruction strategy survey (see Appendix F) and brief interview regarding the general reading instruction strategies they used throughout the 12-week study. This provided additional qualitative data to provide the researcher with a well-rounded picture of the reading strategies used by each teacher throughout the study (see Appendix G for a summary report of these interviews). Both test instruments, the GORT-4 and the TOWRE, were used to individually pretest and posttest each student involved in the study. They were pretested using Form A of each reading assessment and posttested using Form B of each reading assessment. The researcher has summarized the purpose for each test, their reliability, and their validity in the following paragraphs.

The Gray Oral Reading Tests fourth edition (GORT-4) produced four scores to determine of oral reading fluency: oral reading rate, oral reading accuracy, oral reading fluency, and reading comprehension. An overall reading fluency score called the oral reading quotient gave an additional measure. Dr. William Gray developed the GORT in 1963 and during the 1960's through the 1980's it became the most popular and widely used test of oral reading rate, accuracy, and comprehension regularily cited in the professional literature (Wiederholt & Bryant, 2001). Samuels (2006b) noted that Dr. Gray developed the original idea for the test in the 1920's and that is had undergone four revisions in its eighty year history. He also stated that the GORT, "utilized a technique

that measures fluency as we would advocate it be done today" (Samuels, 2006b, p. 12).

One test reviewer noted, "The GORT-4 provides an efficient and objective measure of

growth in oral reading and an aid in the diagnosis of oral reading difficulties" (Crumpton,

2003, p. 1). Miller-Whitehead (2003) noted that the GORT-4 has consistently found

favor among educators and been used extensively as a pretest and posttest diagnostic tool

to measure student progress in reading.

 The GORT-4 is an individually administered assessment that takes between

fifteen and forty-five minutes to administer (Wiederholt & Bryant, 2001). The test's

editors stated their four key purposes of the GORT-4:

1. To identify students with reading problems

2. To determine strengths and weaknesses in individual readers

3. To document students' progress in reading as a consequence of intervention
    programs

4. To serve researchers as a measurement device in investigations where
    researchers are studying the reading abilities and improvements of school-
    aged children (6.0 years through 18.11 years of age) in grades one through
    twelve. (Wiederholt & Bryant, 2001, p. 4)

The test consists of 14 developmentally sequenced reading passages that begin at a very

simple reading level and progress to a very difficult reading level. The research

assistants timed each student's reading of each passage to determine a reading rate,

marked deviations from print to determine an accuracy rate, and asked five

comprehension questions for each story to determine a comprehension score. The

combined reading rate score and accuracy rate score formed a reading fluency score.

Each of these four measures convert to age and grade equivalency scores, standard

scores, percentile ranks, and oral reading quotients based on a broad sampling of norms

in the United States (Wiederholt & Bryant, 2001).

The GORT has been used extensively as a standard reading assessment test since

1963. Crumpton (2003) also noted:

> Reliability studies included content sampling, time sampling, and interscorer
>
> differences (although the sample for interscorer differences was small). The range
>
> of coefficients revealed the GORT-4 has little test error and users can be
>
> confident that the test is consistent in measuring oral reading ability. New validity
>
> studies for content-description, criterion-prediction, and construct identification
>
> provide evidence that the GORT-4 is a valid measure of reading performance.
>
> (p. 1)

It was also noted that the two forms of the test (Form A and Form B), and "all four

subtests have nearly identical means and standard deviations and correlate .85 or better

with each other" (Crumpton, 2003, p. 1). When interscorer differentials were compared,

the reliability ranged from 0.94 - 0.99 (Crumpton, 2003).

The purpose of the Test of Word Reading Efficiency (TOWRE) is to measure an

individual's ability to pronounce printed words accurately and fluently. It is an

individually administered five-minute test for people 6 through 24 years of age. It is

composed of two subtests: the Sight Word Efficiency (SWE) subtest, and the Phonetic

Decoding Efficiency (PDE) subtest. There are two forms of each test: Form A and Form

B. The SWE test measures how many (of 104) real printed words an examinee

accurately pronounced in 45 seconds. The PDE test measures the number of

pronounceable printed non-words (of 63) an examinee accurately sounded out in 45 seconds (Tindal, 2004). The TOWRE produces five scores for comparison: a raw score, age and grade equivalency scores, percentile ranks, and standard scores for each of the two subtests and a total test score (Vacca, 2004). The authors of the test recommend student testing at regular intervals in grades one and two to monitor reading growth (Torgesen, Wagner, & Rashotte, 1999).

Tindal (2004, p.1) reviewed and endorsed the TOWRE as, "a very complete and well-packaged measure of reading efficiency. . . .which is very conceptually and theoretically anchored." Tindal (2004) also noted that the test developers used a broad stratified U.S. sample for developing their norms (1507 students). Comparisons to the Woodcock Reading Mastery Test-Revised (1987) and the Gray Oral Reading Tests-3rd edition affirmed its validity. The comparison reports revealed a very high correlation with Woodcock-R (1987) and high correlation with the GORT-3 for sight words efficiency and moderate correlation with phonemic decoding efficiency. The reliability data reported in the examiner's manual revealed coefficients above 0.95 when analyzed by different subgroups of the normative sample and coefficients from 0.82 to 0.97 when individuals were tested and retested within two weeks (Tindal, 2004).

The GORT-4 is a highly reliable and valid assessment instrument for measuring oral reading fluency (Crumpton, 2003). The TOWRE's high reliability and validity reports should also provide the researcher of this study with an accurate indication of sight word reading growth and phonetic decoding growth for each group in the study.

Procedures to Carry Out the Research Design

To carrying out this research design, the researcher followed a specific course of action outline in the following step-by-step procedures. This paragraph contains an overview of the procedures followed. The following paragraphs explain each step in detail. First, the researcher identified and contacted a variety of local schools to request their participation in this research study. Secondly, the researcher found appropriate independent research assistants and trained them to administer the individual reading assessments pre-intervention and post-intervention. Thirdly, the researcher randomly assigned to either the Control group or one of the two experimental groups, the classes, along with their respective teachers, and trained each of the teachers in the appropriate instructional strategies used during the course of the study according to their respective group assignments. Fourthly, the researcher had his research assistants individually pretest all students involved in the study for oral reading fluency and word reading efficiency. Fifthly, the experimental groups began daily word wall instruction or daily independent silent reading while the students in the Control group continued their normal instructional program throughout the study without the use of either the word wall or independent silent reading. Sixthly, at the end of the 12-week intervention, the researcher had the independent research assistants individually posttest all students in the study for oral reading fluency and word reading efficiency.

In May and June of 2006, the researcher identified and contacted school principals and second grade teachers to ask if they would be willing to participate in this research study. Four schools with 6 second-grade classes agreed to participate in the study.

In June of 2006, the researcher approached four experienced teachers about being research assistants to individually pretest and posttest students involved in the study. The four research assistants had earned the following degrees and had various teaching experiences: Joyce Baker, Educational Specialist with 31 years experience (elementary/secondary/college teacher, principal, associate director for the Association of Christian Schools International—Eastern Canada), Brian Osborn, Master of Science in Education with 35 years elementary teaching experience, Beverley Osborn, Bachelor of Arts with 25 years elementary teaching experience, and Kimberlee Osborn, Bachelor of Arts with 5 years elementary teaching experience. The researcher then trained the research assistants in the use of the test instruments and arranged for them to practice using the assessment tools on several second grade students.

In July 2006, the researcher randomly assigned the teachers and their respective classes to either the Control group or one of two experimental groups. In August 2006 (three weeks before school), the researcher trained the second grade teachers in the experimental groups in the appropriate instructional techniques they would use during the study. At this time, the researcher supplied the Word Wall treatment classroom teachers with the word wall resources they used during the study including a complete second grade word wall (see Appendix C) and a resource book titled, "Making Your Word Walls More Interactive" by Trisha Callella (2003) . They also received two hours of training, from the researcher, in the research-based theory and use of a high-frequency/chunking primary word wall and appropriate word wall activities (see Appendix D for an outline of this training). Teachers in the independent silent reading experimental group also received two hours of training by the researcher in the research theory and practice of

independent silent reading techniques they would use during this study (see Appendix E for an outline of this training). The researcher also contacted the teachers in the Control group in August to affirm that they will be using their normal reading instruction program throughout the course of the study without either a word wall or an independent silent reading program.

During the second week of school (September 12-14, 2006), the researcher had all second grade students in the study individually pretested for oral reading fluency using Form A of the Gray Oral Reading Tests (GORT-4) and Form A of the Test for Word Reading Efficiency (TOWRE). On September 18, 2006, all second grade students in one of the experimental groups began receiving 15 minutes of daily word wall instruction and activities along with their normal language arts instructional program from their regular classroom teacher. Also on September 18, 2006, students in the Independent Silent Reading treatment group began their 15 minutes of daily independent silent reading practice. Students in the Control group continued to receive their regular language arts instruction without word wall instruction and activities or independent silent reading classroom practice time. These three groups continued to receive this modified instruction for 12 weeks, until Friday, December 8, 2006.

At the end of the 12-week study, the researcher had the second grade students in the study individually posttested for oral reading fluency using Form B of both assessment instruments (GORT-4 and TOWRE). The researcher oversaw the second assessment during the week of December 11-15, 2006. The researcher also collected the teachers' annotated reading instruction logs and interviewed the teachers about their respective reading programs over the course of the study. The researcher then analyzed

the data to determine whether the experimental groups experienced significant gains in

oral reading fluency or word-reading fluency over the Control group.

To avoid tester bias, the four independent research assistants did not know which

students were in the Control group or one of the treatment groups. The researcher

organized and oversaw the administration of these reading assessments and served as a

liaison between the school administration, teachers, students, and their classrooms while

the research assistants were isolated in their testing areas. (See Appendix I for the

timeline of this research study).

<div align="center">Analysis of the Data</div>

The researcher scored and then re-scored all of the tests to ensure scoring

accuracy. He then input all of the data into the SPSS 11.0 statistics computer program to

aid in the statistical analysis. The researcher used a statistical procedure called a mixed-

model ANOVA (analysis of variance) to make comparisons both within groups and

between the treatment and Control groups. Given the pretest-postest experimental design

of this research study, the researcher determined that this statistical procedure would best

reveal the extent to which the treatments had an influence on the subjects' oral reading

fluency performance over time (Shannon & Davenport, 2001). The researcher also

performed a number of one-sample t tests to compare gain scores with expected reading

gains over the three-month course of the study.

The researcher compared the pretest and posttest group mean percentile ranks,

group mean standard scores, and group mean grade-equivalency scores for reading rate,

accuracy, fluency, comprehension, oral reading quotient, sight word efficiency, phonetic

decoding efficiency, and total word reading efficiency. From these comparisons, the

researcher determined and compared the group means for growth of individual word reading efficiency, phonetic decoding efficiency, total word reading efficiency as well as reading rate, reading accuracy, reading fluency, reading comprehension, and oral reading quotient (overall oral reading fluency). The researcher also calculated actual gain scores for reading rate, accuracy, fluency, comprehension, sight word efficiency, and phonemic awareness measures by subtracting the pretest grade-equivalency mean scores of each group from the posttest grade-equivalent mean scores from each group. The researcher compared these gain scores with anticipated gains on each measure over the three-month study using one-sample t tests. Chapter 4 contains the results and analysis of these comparisons in the form of tables, and narrative text. The researcher has also explained the specific statistical tests and procedures used for the comparisons and analysis of these data as well as the researcher's rationale behind these choices.

<div align="center">Summary of the Methodology</div>

This chapter has explained the methodology and study design the researcher undertook over the course of this research study. The results of this research design helped answer the four research questions stated at the beginning of this study regarding the impact of daily usage of word walls and daily independent silent reading on reading fluency development in second grade students. The next chapter presents the results the researcher obtained with these methods.

CHAPTER FOUR

Results

As stated in chapter one, the researcher undertook this study to determine the effects of two popular reading instruction strategies on the development of oral reading fluency in second grade students. This chapter was organized according to the four research questions stated in chapter one. Before addressing these questions, the researcher has described the key statistical procedures used in the analysis of the data as well as noted some needed data adjustments. The researcher has also briefly described the key measures (dependent variables) from each of the two reading assessment tools (GORT-4 and TOWRE) used in the analysis of data.

The authors of both reading assessments noted that the standard scores and percentile scores were the most reliable scores produced by their respective tests since these two scores were normed based on a large nationally sampled group (Wiederholt & Bryant, 2001; Torgesen, Wagner, & Rashotte, 1999). Both sets of authors also recommended cautious interpretation of the age and grade equivalency scores since those values were based on averages, interpolation, extrapolation, and smoothing (Wiederholt & Bryant, 2001; Torgesen, Wagner, & Rashotte, 1999). Based on these recommendations, the researcher chose to use the standard scores and percentile ranks as the primary statistics for analysis. The researcher computed and used grade equivalency gain scores for secondary analysis since they revealed statistically significant information about the instructional strategies employed in this study that were not revealed in the Control group-experimental group comparisons of the standard scores and the percentile

ranks. Gain score analysis of grade equivalency scores is not an uncommon practice in the field of educational research and has been used by others to compare the effectiveness of different instructional strategies (Stahl, 2006; Stahl, 2002; Samuels & Wu, 2003; Samuels & Farstrup, 2006).

The statistical analysis began with a general pretest statistical description of the whole sample group involved in this study. Following this, a pretest comparative analysis done using a one-way ANOVA to analyze the two experimental groups and the Control group using both standard score means and percentile rank means. This analysis demonstrated that there was no statistically significant difference at the beginning of the study between the three groups for any of the eight key dependent variables (rate, accuracy, fluency, comprehension, oral reading quotient, sight word efficiency, phonemic decoding efficiency, and total word reading efficiency). Next, the researcher used a mixed-model ANOVA to compare both the standard score means and the percentile rank means of the pretest and posttest data. According to Shannon and Davenport (2001) this is the most common and appropriate statistical procedure to use for comparisons in a pretest-posttest experimental design. The researcher computed actual gain scores by subtracting the pretest grade equivalency scores from the posttest grade equivalency scores. The researcher compared mean actual gain scores for six key dependent variables (Rate, Accuracy, Fluency, Comprehension, Sight Word Reading, and Phonemic Decoding Efficiency) to the anticipated gain score of 3 months (the length of the study) using a series of one-sample t tests.

Both the GORT-4 and the TOWRE produced measurement data that translated into age equivalency and grade equivalency scores. The scales for the GORT-4 range

from ages 6.0 to 18.9 years and from grades 1.0 to 12.7. The scales for the TOWRE

range from ages 6.0 to 17.9 years and from grades 1.0 to 12.6. The researcher discovered

that due to the limited range of the assessment tools, converting raw scores to age and

grade equivalency scores resulted in a number of students that had age and grade

equivalency scores that were outside the range scale of the GORT-4 assessment tool.

Complete age and grade equivalent scores were only available for 88 of the 121 subjects

in the study. Krista Anderson, a PRO-ED Inc. technical advisor for test development,

recommended removing these subjects from comparisons since they tested out of the

range of the GORT-4 for one or more grade equivalency scores. The researcher

conducted grade equivalency comparisons using only the data from the 88 subjects for

whom complete grade equivalency data was available as well as comparisons using the

adjusted data. Since both comparisons yielded very similar results, rather than remove a

third of these subjects from the data set, the researcher substituted a base value for the

missing grade equivalency scores. The following tables and discussion of results were

based on the adjusted grade equivalency score data. The researcher adjusted the

incomplete data for grade equivalency in the following manner: all student age

equivalency scores that converted to <6.0 years on any sub-test components were

recorded as 5.9 years of age and any students whose grade equivalency scores converted

to <1.0 grade level on sub-test components were recorded as 0.9 grade level.

Additionally, six students score above the 99th percentile on the GORT-4 and one student

had an overall oral reading quotient of 149 (the scale range peaks at 148). The researcher

entered a percentile rank of 99 for these students and an overall reading quotient score of

149 respectively.

Descriptive Statistics of the Study Sample

The researcher conducted an analysis of the data on 121 second-grade students who participated in both the pretest and posttest evaluations. The composition of the sampling group was 58 males and 63 females. The Gray Oral Reading Tests (fourth edition) Form A (2001) and the Test of Word Reading Efficiency Form A (1999) were administered individually by one of four research assistants to each of the study participants during the pretesting phase of the study. Wiederholt & Bryant (2001) recommended the oral reading quotient score as the most reliable GORT-4 measure of students' overall oral reading ability. Torgesen, Wagner, & Rashotte, (1999) stated that the total word reading efficiency standard score on the TOWRE was the key measure for overall isolated word reading efficiency. Tables 1, 2, and 3 summarize the descriptive pretest statistics for the sample group as a whole using the standard scores, percentile ranks, and grade equivalency scores respectively.

Table 1

Descriptive Mean Pretest Standard Score Statistics of the Study Sample, Experimental
and Control Groups Combined (N=121)

Variable	M	SD	Min.	Max.
Age (Years and Months)	6.8	0.46	6.1	8.1
GORT-4				
Rate	10.19	3.277	4	17
Accuracy	9.37	3.134	3	17
Fluency	9.53	3.312	3	18
Comprehension	10.02	3.512	4	19
Oral Reading Quotient	98.61	18.388	61	145
TOWRE				
Sight Word Efficiency	106.86	10.728	85	128
Phonemic Decoding Efficiency	104.44	11.353	81	132
Total Word Reading Efficiency	106.79	12.739	81	132

Table 2

Descriptive Mean Pretest Percentile Rank Statistics of the Study Sample, Experimental

and Control Groups Combined (N=121)

Variable	M	SD	Min.	Max.
GORT-4				
Rate	50.99	31.529	2	99
Accuracy	43.36	29.776	1	99
Fluency	44.56	30.644	1	99
Comprehension	50.31	32.989	2	99
Oral Reading Quotient	47.84	33.437	1	99
TOWRE				
Sight Word Efficiency	64.52	23.071	16	97
Phonemic Decoding Efficiency	59.18	24.301	10	98
Total Word Reading Efficiency	63.27	25.952	10	98

Table 3

Descriptive Mean Pretest Grade Equivalency Statistics of the Study Sample,

Experimental and Control Groups Combined (N=121)

Variable	M	SD	Min.	Max.
GORT-4				
Rate	2.414	1.56	0.9	6.2
Accuracy	2.183	1.4	0.9	6.4
Fluency	2.265	1.36	0.9	6.0
Comprehension	2.518	1.52	0.9	8.2
TOWRE				
Sight Word Efficiency	2.722	0.97	1.2	4.8
Phonemic Decoding Efficiency	2.757	1.27	1.2	7.2

The GORT-4 reading assessment measured four primary sub-components of oral

reading fluency: Rate (speed), Accuracy, Fluency, and Comprehension. The calculation

of the rate score and accuracy scores are both based on the time (in seconds) and the

number of deviations from print the student makes during the oral reading of a series of

passages. The fluency score is simply the sum of the rate and accuracy scores. The

comprehension score is calculated separate from the fluency scores based on the number

of correctly answered multiple-choice questions (five questions per passage) posed to the

student after the reading of each passage. The Oral Reading Quotient is the overall

measure of the GORT-4 based on the fluency and comprehension scores. An Oral

Reading Quotient score of 90-110 is average and constitutes 49.51% of the normed

sample (Wiederholt & Bryant, 2001). As the pretest descriptive tables indicate, the

sample group involved in this study was average although slightly below the mean of the

normed sample (see Table 1; Oral Reading Quotient mean standard score 98.61 and mean

percentile rank 47.84).

The TOWRE word reading assessment measures two aspects of isolated word

reading skills. The sight word efficiency score indicates the number of real printed

words, from a list of words, a student accurately reads aloud in 45 seconds (Torgesen,

Wagner, & Rashotte, 1999). The phonemic decoding efficiency score indicates the

number of pronounceable printed non-words from a list of non-words a student

accurately decodes, based on their phonemic skills, and reads aloud in 45 seconds

(Torgesen, Wagner, & Rashotte, 1999). According to the test authors (Torgesen,

Wagner, & Rashotte, 1999), the calculation of the Total Word Reading Efficiency

Standard Score, based on the combined sight word efficiency and phonemic decoding

efficiency subtest standard scores, is the most reliable score for the TOWRE. A Total

Word Reading Efficiency Standard Score score of 90-110 is average and constitutes

49.51% of the normed sample (Torgesen, Wagner, & Rashotte, 1999). As the pretest

descriptive tables indicate, the sample group involved in this study was average although

above the mean of the normed sample (see Table 2; Total Word Reading Efficiency mean

standard score 106.79 and mean percentile rank 63.27).

<u>Statistical Analysis of Pretest Control and Experimental Groups</u>

A one-way ANOVA comparison between the mean pretest standard scores of the

control and the two experimental groups revealed no statistically significant difference

between groups on rate, accuracy, fluency, comprehension, oral reading quotient, sight

word efficiency, phonemic decoding efficiency, or total word reading efficiency. The

alpha level was greater than 0.05 for all comparisons. The mean oral reading quotient

scores (99.03, 95.69, 100.93) for each group were within the average range (90-110) for

beginning second grade students (see Table 4). The mean total word reading efficiency

scores (106.85, 103.97, 109.33) for each group were at the higher end of the average

range (90-110) for beginning second grade students (see Table 4). The same one-way

ANOVA comparison done for percentile ranks and grade equivalency scores revealed no

statistically significant differences for any dependent variables. The following table

displays the results of the standard score comparison between the control and

experimental groups.

Table 4

Pretest Mean Standard Scores Comparison of the Control and Experimental Groups on

Key Dependent Measures (N=121)

Variable	Control (N=40)		WW (N=39)		ISR (N=42)		F Value	Significance*
	M	SD	M	SD	M	SD		
GORT-4								
Rate	10.15	3.13	9.74	3.58	10.64	3.13	0.76	0.469
Accuracy	9.18	2.78	9.74	3.35	9.21	3.29	0.40	0.670
Fluency	9.35	3.03	9.46	3.69	9.76	3.26	0.17	0.846
Comprehension	10.35	3.42	9.10	3.94	10.55	3.06	2.02	0.138
Oral Reading Quotient	99.03	17.67	95.69	21.27	100.93	16.12	0.83	0.437
TOWRE								
Sight Word Efficiency	106.93	10.61	104.10	11.26	109.36	10.37	2.49	0.088
Phonemic Decoding Efficiency	104.48	9.94	102.44	12.61	106.26	11.35	1.15	0.320
Total Word Reading Efficiency Standard Score	106.85	11.49	103.97	13.76	109.33	12.64	1.82	0.167

*$p<.05$, Dunnett t (two-tailed).

Research Question 1

The first question posed in this study read as follows, "Does the daily fifteen-minute practice of using a high-frequency/chunking word wall in second grade classrooms increase student oral reading fluency development over a Control group?" The null hypothesis (H1) addressed this question stating, "The fifteen-minute daily use of a high-frequency/ chunking word wall for second grade students over 12 weeks will have no effect on oral reading fluency development of the average second grade student when compared to a Control group." To evaluate this hypothesis and answer this research question, the researcher made a comparison between the Control group and Word Wall group pretest and posttest group mean scores of the GORT-4 dependent variables (rate, accuracy, fluency, comprehension, and oral reading quotient). The researcher used a mixed-model ANOVA statistical procedure to compare the standard scores, and percentile scores (see Table 5). In addition, the researcher calculated the actual gain scores for the Rate, Accuracy, Fluency, and Comprehension variables by subtracting the pretest grade equivalency scores from the posttest grade equivalent scores. The researcher made a comparison between the actual gains experienced by the students over the period of the study with the anticipated gains of 3 months using a series of one-sample t-tests (see Table 6). The following tables contain the statistical results along with a narrative explanation of these results.

Table 5

GORT-4 Pretest Mean Standard Scores and Percentile Ranks Comparison to Posttest

Mean Standard Scores and Percentile Ranks (WW vs. Control, N=79)

Variable	Group	Standard Scores			Percentile Rank		
		Pretest	Posttest	Significance*	Pretest	Posttest	Significance*
Rate	WW	9.74	10.97	0.618	46.56	60.18	0.658
	Control	10.15	11.73		50.60	66.28	
Accuracy	WW	9.74	11.00	0.988	47.41	59.67	0.989
	Control	9.18	11.75		41.43	67.25	
Fluency	WW	9.46	10.79	0.800	44.31	57.90	0.819
	Control	9.35	11.73		43.10	66.10	
Comp.	WW	9.10	11.85	0.166	41.23	66.38	0.118
	Control	10.35	12.68		53.20	75.40	
Oral Reading Quotient	WW	95.69	107.92	0.390	41.31	63.64	0.297
	Control	99.03	113.28		49.43	73.08	

Note. Word Wall group N=39, Control group N=40.
*p<.05, Dunnett t (two-tailed).

A comparison of mean pretest and posttest standard scores and mean pretest and

posttest percentile ranks between the word wall experimental group and the Control

group revealed no statistically significant differences between any of the eight key

measures. Both the Word Wall group and the Control group made statistically significant

gains in all eight measures on within group comparisons over the three-month period of

the study, but no statistically significant gains were evident on between-groups comparisons. This evidence supported this null hypothesis (H1) which stated, "The fifteen-minute daily use of a high-frequency/chunking word wall for second grade students over 12 weeks will have no effect on oral reading fluency development of the average second grade students when compared to a Control group." Therefore, the researcher failed to reject this hypothesis (H1).

While noting the warning of the authors of both tests regarding the interpretation of grade equivalency scores (Wiederholt & Bryant, 2001; Torgesen, Wagner, and Rashotte, 1999) it is worth noting a comparison of the actual gain scores with the anticipated gains for both groups. One might expect that over the course of 3 months of schooling, student scores on reading tests would normally result in a gain of 3 months on the grade equivalency scores. Some test and measurement experts caution this type of comparison (Linn & Gronlund, 1995), but this type of comparison has been used in other educational research studies (Stahl, Heubach, & Cramond, 1997; Stahl, 2002; Stahl & Heubach, 2006; Samuels & Wu, 2003). When a series of one-sample t test comparison of mean actual gain scores with the anticipated gain of 3 months, the results revealed statistically significant gains for both the Control group and the Word Wall group on all dependent variables (see Table 6). As noted on Table 6, actual gains over the three-month course of the study ranged from a low mean gain of almost nine months (0.8897) for the Word Wall group rate score to a high mean gain of one year and four and a half months (1.45) for the Control group accuracy score. See Appendix H for a table of mean standard score and mean percentile gain score comparisons.

Table 6

GORT-4 Mean Grade Equivalency Gain Scores Comparison to Anticipated Gain Score

(WW vs. Control, N=79)

Measure	Group	Pretest	Posttest	Gain	Significance*
Rate	WW	2.331	3.221	0.8897	0.000
	Control	2.445	3.556	1.1110	0.000
Accuracy	WW	2.423	3.203	0.7795	0.001
	Control	2.105	3.555	1.4500	0.000
Fluency	WW	2.349	3.097	0.7487	0.000
	Control	2.233	3.350	1.1175	0.000
Comprehension	WW	2.308	3.746	1.4385	0.000
	Control	2.605	3.933	1.3275	0.000

Note. These statistics represent the actual mean gains of each group in years and months over the three-month course of the study. Significance was calculated using one-sample t tests where expected gains of 3 months were compared to actual gains. Word Wall group N=39, Control group N=40.
*$p<.05$, Dunnett t (two-tailed).

Research Question 2

The following comparison of data answered a second question related to the word wall. The second research question asked, "Does the daily fifteen-minute practice of using a high-frequency/chunking word wall in second grade classrooms increase student isolated word reading or non-word decoding skills over a Control group?" The null hypothesis (H2) stated, "The fifteen-minute daily use of a high-frequency/chunking word wall for second grade students over 12 weeks will have no effect on isolated word

reading skills, or non-word decoding skills of the average second grade students when

compared to a Control group." The mixed-model ANOVA comparison of the mean

pretest and posttest standard score and percentile rank data from the TOWRE reading

assessment displayed on Table 7 revealed no statistically significant effects. Therefore,

the researcher failed to reject this hypothesis (H2).

Table 7

TOWRE Pretest Mean Standard Scores and Percentile Ranks Comparison to Posttest

Mean Standard Scores and Percentile Ranks (WW vs. Control, N=79)

		Standard Scores			Percentile Rank		
Variable	Group	Pretest	Posttest	Significance*	Pretest	Posttest	Significance*
Sight Word	WW	104.10	108.92	0.451	58.49	68.56	0.436
Efficiency	Control	106.93	111.79		65.08	72.55	
Phonemic Decoding	WW	102.44	103.77	0.447	54.31	58.10	0.450
Efficiency	Control	104.48	107.48		59.40	64.70	
Total Word	WW	103.97	107.64	0.440	57.46	65.62	0.483
Reading Efficiency	Control	106.85	111.20		63.85	70.65	

Note. Word Wall group N=39. Control group N=40.
*p<.05, Dunnett t (two-tailed).

Although the comparisons of Word Wall mean standard scores and percentile

ranks with the Control group failed to show a statistically significant effect, one-sample

t tests for the actual gains revealed some statistically significant effects when compared

to the anticipated gain of 3 months (see Table 8). Both the Word Wall group and the

Control group realized significant gains of over six and a half months (0.659 and 0.670

respectively) for sight word efficiency. Only the Control group realized a statistically

significant gain of seven and a half months (0.765) for phonemic decoding efficiency

while the Word Wall group realized the anticipated gain of 3 months (0.333) during the

12 weeks of the study. Table 8 contains the relevant data for comparison. See Appendix

H for a table of mean standard score and mean percentile gain score comparisons.

Table 8

TOWRE Mean Grade Equivalent Gain Score Comparison to Anticipated Gain Score

(WW vs. Control, N=79)

Measure	Group	Pretest	Posttest	Gain	Significance*
Sight Word	WW	2.610	3.269	0.6590	0.000
	Control	2.760	3.430	0.6700	0.001
Phonemic Decoding	WW	2.754	3.087	0.3333	0.825
	Control	2.755	3.520	0.7650	0.000

Note. These statistics represent the actual mean gain of each group in years and months
during the three-month study. Significance calculated using one-sample t tests where
expected gains of 3 months (0.3) compared to actual gains. Word Wall group N=39,
Control group N=40.
*p<.05, Dunnett t (two-tailed).

Research Question 3

The final two research questions related to the effects of daily independent silent

reading on the development of oral reading fluency development of second grade

students. The research question asked, "Does the daily fifteen-minute practice of

independent silent reading in second grade classrooms increase student oral reading

fluency development over a Control group?" The null hypothesis (H3) stated, "The

fifteen-minute daily practice of independent silent reading in second grade classes over

12 weeks will have no effect on oral reading fluency development of the average second

grade student over a Control group." Once again, the comparative analysis of the data

using a mixed-model ANOVA lead the researcher to fail to reject this hypothesis (H3)

(see Table 9). Although all five of the dependent variables taken from the GORT-4

reading assessment measures revealed statistically significant gains over the period of the

study, none of the dependent variables revealed a statistically significant difference

between the Independent Silent Reading group and the Control group.

Table 9

GORT-4 Pretest Mean Standard Scores and Percentile Ranks Comparison to Posttest

Mean Standard Scores and Percentile Ranks (ISR vs. Control, N=82)

Variable	Group	Standard Scores			Percentile Rank		
		Pretest	Posttest	Significance*	Pretest	Posttest	Significance*
Rate	ISR	10.64	12.76	0.431	55.48	74.93	0.472
	Control	10.15	11.73		50.60	66.28	
Accuracy	ISR	9.21	11.60	0.995	41.43	63.60	0.940
	Control	9.18	11.75		41.43	67.25	
Fluency	ISR	9.76	12.02	0.839	46.19	66.57	0.947
	Control	9.35	11.73		43.10	66.10	
Comp.	ISR	10.55	12.88	0.922	56.00	78.40	0.822
	Control	10.35	12.68		53.20	75.40	
Oral Reading Quotient	ISR	100.93	114.71	0.855	52.40	77.43	0.787
	Control	99.03	113.28		49.43	73.08	

Note. Independent Silent Reading group N=42, Control group N=40.
*$p<.05$, Dunnett t (two-tailed).

When the actual gain scores for each of these five dependent variables was

compared with the anticipated gain of 3 months using a series of one-sample t tests, the

comparison revealed strong statistically significant gains ($p<0.05$) for all five variables

for both the control and the Independent Silent Reading groups. These mean gains, noted

on Table 10, ranged from a low of one year and one month (1.111) for reading rate in the

Control group to a high of one year and four and a half months (1.45) for accuracy in the

Control group. See Appendix H for a table of mean standard score and mean percentile

gain score comparisons.

Table 10

GORT-4 Mean Grade Equivalency Gain Score Comparison to Anticipated Gain Score

(ISR vs. Control, N=82)

Measure	Group	Pretest	Posttest	Gain	Significance*
Rate	ISR	2.462	3.879	1.4167	0.000
	Control	2.445	3.556	1.1110	0.000
Accuracy	ISR	2.033	3.312	1.2786	0.000
	Control	2.105	3.555	1.4500	0.000
Fluency	ISR	2.219	3.440	1.2214	0.000
	Control	2.233	3.350	1.1175	0.000
Comp.	ISR	2.631	3.933	1.3024	0.000
	Control	2.605	3.933	1.3275	0.000

Note. These statistics represent the actual mean gain of each group in years and months
over the three-month study. Significance calculated using one-sample t tests where
expected gains of 3 months (0.3) compared to actual gains. Independent Silent Reading
group N=42, Control group N=40.
*p<.05, Dunnett t (two-tailed).

Research Question 4

The final research question also related to the daily practice of independent silent

reading. The question asked, "Does the daily fifteen-minute practice of independent

silent reading in second grade classrooms increase student isolated word reading or non-

word decoding skills over a Control group?" The null hypothesis (H4) stated, "The fifteen-minute daily practice of independent silent reading in second grade classes over 12 weeks will have no effect on isolated word reading skills, or non-word decoding skills of the average second grade student over a Control group." Again, a mixed-model ANOVA comparison of mean standard scores and percentile ranks of the three relevant dependent variables measured by the TOWRE lead the researcher to fail to reject this null hypothesis (H4) (see Table 11).

As noted on Table 11, students in each group and on each variable experienced gains over the three-month study. When the researcher compared the Independent Silent Reading group and Control group mean standard scores and mean percentile ranks for sight word efficiency, phonemic decoding efficiency, and total word reading efficiency there were no statistically significant gains. Again, the gain score comparison revealed some noteworthy results (see Table 12).

Table 11

TOWRE Pretest Mean Standard Scores and Percentile Ranks Comparison to Posttest

Mean Standard Scores and Percentile Ranks (ISR vs. Control, N=82)

Variable	Group	Standard Scores			Percentile Rank		
		Pretest	Posttest	Significance*	Pretest	Posttest	Significance*
Sight Word Efficiency	ISR	109.36	114.95	0.325	69.60	79.07	0.394
	Control	106.93	111.28		65.08	72.55	
Phonemic Decoding Efficiency	ISR	106.26	109.26	0.713	63.50	66.79	0.783
	Control	104.48	107.48		59.40	64.70	
Total Word Reading Efficiency	ISR	109.33	114.60	0.488	68.12	75.60	0.605
	Control	106.85	111.20		63.85	70.65	

Note. Independent Silent Reading group N=42. Control group N=40.
* p<0.05, Dunnett t (two-tailed).

Although there were no statistically significant results evident in the comparison

of standard scores or percentile scores between the Independent Silent Reading group and

the Control group, strong statistically significant gains (p<0.05) resulted from a

comparison of gain scores (see Table 12). The researcher used one-sample t tests to

compare mean grade equivalency pretest and posttest gain scores of two key dependent

variables with the anticipated gain scores of 3 months. This comparison revealed

statistically significant gains for students in both the Independent Silent Reading group

and the Control group for both the sight word efficiency and the phonemic word

efficiency measures. The actual gains over the 12-week study ranged from a low of six

and a half months (0.67) for sight word efficiency in the Control group to a high of

almost nine and a half months (0.933) for phonemic decoding efficiency in the

Independent Silent Reading group (see Table 12). See Appendix H for a table of mean

standard score and mean percentile gain score comparisons.

Table 12

TOWRE Mean Grade Equivalency Gain Score Comparison to Anticipated Gain Score

(ISR vs. Control, N=82)

Measure	Group	Pretest	Posttest	Gain	Significance*
Sight Word Efficiency	ISR	2.790	3.671	0.8810	0.000
	Control	2.760	3.430	0.6700	0.001
Phonemic Decoding Efficiency	ISR	2.762	3.695	0.9333	0.000
	Control	2.755	3.520	0.7650	0.000

Note. These statistics represent the actual mean gain of each group in years and months
over the three-month course of the study. Significance calculated using one-sample t
tests where expected gains of 3 months (0.3) were compared to actual gains. Independent
Silent Reading group N=42, Control group N=40.
*p<.05, Dunnett t (two-tailed).

Summary of Data Analysis

The statistical information presented in this chapter resulted from the four

research questions posed at the beginning of this study. An analysis of the data revealed

that the daily use of a high frequency/chunking word wall and the daily practice of

independent silent reading in second grade classes do not significantly improve reading

Rate, Accuracy, Fluency, Comprehension, Overall Oral Reading Fluency, Sight Word

Efficiency, Phonemic Decoding Efficiency, or Total Word Reading Efficiency when compared to a Control group. It is worth noting that all three groups (Word Wall, Independent Silent Reading, and Control) experienced statistically significant gains for almost every dependent variable (Rate, Accuracy, Fluency, Comprehension, Sight Word Efficiency, and Phonemic Decoding Efficiency) when actual gains in grade equivalency scores were compared with anticipated gains of 3 months, the actual length of the research study.

CHAPTER FIVE

Summary and Discussion

As an aid to the reader, the researcher began this final chapter by restating the

research problem and summarizing the major research methods used in this study. The

researcher has also included a summary of the findings, an interpretation of the findings,

the implications of these findings on reading instruction, and recommendations for

additional research.

Introduction to the Research Problem

The purpose of this study was to determine the effectiveness of two popular

reading instruction strategies on the development of reading fluency of second grade

students over 12 weeks. The first set of research questions focused on the effect of daily

word wall instruction and activities on the reading fluency development of second grade

students compared to a Control group. The second set of research questions focused on

the effect of daily independent silent reading practice on the reading fluency development

of second grade students compared to a Control group.

Review of the Methodology

The sample group included 121 students in 6 second-grade classes in Christian

schools in southern Ontario, Canada. The researcher randomly assigned two intact

classes to one of three groups: a Control group (40 students), a Word Wall group (39

students), or an Independent Silent Reading group (42 students). Each student was

individually pretested and posttested for oral reading fluency and word reading efficiency

using Form A and Form B respectively of both the Gray Oral Reading Test (fourth

edition, GORT-4) and the Test of Word Reading Efficiency (TOWRE). Students

assigned to the Word Wall group received 15 minutes of daily word wall instruction for

12 weeks. Students assigned to the Independent Silent Reading group received 15

minutes of daily independent silent reading time for 12 weeks. Students assigned to the

Control group received their normal reading instruction without either word wall or

independent silent reading for 12 weeks. The researcher then compared and analysed the

pretest and posttest data.

Summary of the Research Findings

The results of the analysis (a mixed model ANOVA) of the pretest and posttest

data revealed no statistically significant differences (Dunnett t test, two-tailed, $p<0.05$) in

reading skills growth between the two experimental groups and the Control group. The

comparisons between each experimental group and the Control group using both standard

scores and percentile scores included a variety of measures (Rate, Accuracy, Fluency,

Comprehension, Oral Reading Quotient, Sight Word Efficiency, Phonemic Decoding

Efficiency, and Total Word Reading Efficiency). When the researcher computed actual

grade equivalency gain scores for six of these dependent variable measures (Rate,

Accuracy, Fluency, Comprehension, Sight Word Efficiency, and Phonemic Decoding

Efficiency) and compared the actual gain scores to the anticipated gains of 3 months (the

length of this study), all three groups demonstrated statistically significant gains (Dunnett

t test, two-tailed, $p<0.05$) for almost every dependent variable (the only exception--

phonemic decoding efficiency for the Word Wall group only increased by 3 months). In

summary, these results suggest that neither 15 minutes of daily word wall instruction nor

15 minutes of daily independent silent reading significantly improve reading fluency for second grade students when compared to a Control group.

<div align="center">Interpretation of the Research Findings</div>

The findings of this research study do not imply that using word walls or using independent silent reading contribute no benefit to student reading fluency development. The significant gains experienced by all three groups when comparing grade equivalency scores to the anticipated gains of 3 months may suggest more about grade equivalency scores and the possible rapid growth learning curve for reading fluency at the beginning of second grade than about the two reading interventions examined in this study. The fact that the sample group mean gain for the oral reading quotient measure of the GORT-4 was 23.67 percentile points suggests that all three groups received very effective reading instruction over the 3 month study (pretest percentile mean was 47.7 while the posttest percentile mean was 71.38; percentile gain by group WW-22.33, ISR-25.03, Control-23.65). In this section, the researcher has summarized and addressed concerns about using grade equivalency scores for gain comparisons, interpreted the current findings in light of other research on reading fluency, and disclosed some of the researcher's insights regarding the development of reading fluency in second grade students.

Grade Equivalency Norms and Gain Scores Comparisons

Various test and measurement experts have suggested that comparisons of grade equivalency and age equivalency norms have serious shortcomings despite their popularity and frequent use at the elementary school level (Aiken, 1997; Anastasi & Urbina, 1997; Linn & Gronlund, 1995). Wiederholt and Bryant (2001) explained that

grade equivalency norms are determined based on the average scores of all students in

each grade that have been plotted on a graph, smoothed, interpolated, and then

extrapolated into a linear growth pattern to determine normal grade equivalency values

between first and twelfth grade. The primary problem with grade equivalency values is

that growth in cognitive, psychomotor, or affective characteristics is rarely uniform over

the entire range of ages or grades (Aiken, 1998). Thus, two months growth from 2.4 to

2.6 in second grade reading rate is vastly different from two months growth from 8.2 to

8.4 in eighth grade reading rate. Aiken (1998, p. 77) pointed out, "age and grade units

become progressively smaller with increasing age or grade levels" and recommended that

although growth units are more nearly constant across time at the elementary level,

interpretation of age and grade norms should be supplemented with percentile norms and

standard scores. Anastasi and Urbina (1997) noted that a second shortcoming of grade

norms is that since the content and emphasis of instruction varies somewhat from grade

to grade and even within the same grade throughout the year, comparisons using grade

norms are only appropriate for common subjects taught throughout the grade levels

covered by a given test. They cautioned that rapid progress in one particular area might

be the result of the teacher's emphasis placed on that area of learning (Anastasi & Urbina,

1997). Linn and Gronlund (1995) offer warnings about six inappropriate assumptions

which could result in misinterpretations about grade equivalent scores: (1) norms are not

standards of what should be, (2) grade equivalent scores are not good indicators of grade

placement, (3) all students should not be expected to grow one grade equivalent unit per

year, (4) growth units are not equal on different parts of the grade equivalency scale, (5)

grade equivalents from different tests may not be comparable, (6) extreme scores are not

dependable estimates of students normal performance levels. With these cautions noted, and the fact that other educational researchers have found grade equivalency gain comparisons useful (Stahl, Heubach, & Cramond, 1997; Stahl, 2002; Stahl & Heubach, 2006; Samuels & Wu, 2003), the researcher has offered the following analysis and interpretations of the standard scores, percentile ranks, and grade equivalency pretest and posttest comparisons along with gain score comparisons of the data.

Interpretation of the Data

As stated in the previous chapter, a comparison of a variety of measures using standard scores and percentile ranks between the Word Wall group and the Control group revealed no statistically significant results. The same was true for comparisons between the Independent Silent Reading group and the Control group. All groups made statistically significant gains when the researcher examined comparisons of actual gains with anticipated gains of 3 months on all measures on both tests except for the Word Wall group in phonemic decoding efficiency (the actual gain score was equivalent to the anticipated gain for this measure). See Appendix I for a complete table of gains score comparisons. The researcher will address and interpret the results of each measure in turn.

Reading Rate (GORT-4). The rate of reading measured student reading speed or length of time a student required to read a given passage. The average percentile gain for the sample study group was 16.32 points (WW=13.62, ISR=19.45, Control=15.68). Although all groups experienced gains in reading rate over the course of this study, the grade equivalency gain was greatest for the Independent Silent Reading group (1.42) by 5 months over the Word Wall group (0.89) and 3 months over the Control group (1.11). For

beginning second grade students, daily Independent Silent Reading practice appears to help increase the reading rate more than Word Wall activities or than a lack of daily in-class independent silent reading.

Reading Accuracy (GORT-4). The reading accuracy measure refers to the lack of oral reading errors (deviations from print) a student makes while reading a passage aloud. The average percentile gain for the sample study group was 20.18 points (WW=12.26, ISR=22.17, Control=25.82). The grade equivalency gain was greatest for the Control group (1.45) by 7 months over the Word Wall group (0.78) and 2 months over the Independent Silent Reading group (1.27). The daily practice of in-class reading appears to be quite beneficial for the development of reading accuracy whether in the form of independent silent reading practice or in-class reading practice strategies employed in the Control group. The Control group teachers utilized a variety of in-class reading practices (except independent silent reading) including repeated readings, group novel studies with significant peer interaction, group discussion, and comprehension strategy instruction (see Appendix G for a summary of reading strategies employed by the Control group teachers). This may help explain the greater gains in reading accuracy by the Control group over both the Independent Silent Reading group and the Word Wall group.

Reading Fluency (GORT-4). The fluency measure is a combined score of reading rate (speed) and reading accuracy. The average percentile gain for the sample study group was 19.06 points (WW=13.59, ISR=20.38, Control=23). The grade equivalency gain was greatest for the Independent Silent Reading group (1.22) by 5 months over the Word Wall group (0.75) and 1 month over the Control group (1.12). Daily independent silent reading practice and the reading practice experienced by the Control group (see

Appendix G) appear to be very beneficial activity for promoting reading fluency in

beginning second grade students. Stahl and Heubach's (2006) studies of the FORI

approach to reading instruction emphasizing both independent reading practice and a

variety of group reading practice strategies lead to gains in second grade reading rate and

accuracy of 1.8 grade levels over the course of a year and therefore seem to support these

findings. Research undertaken by Kuhn & Schwanenflugel (2006), Kuhn (2005),

Pilgreen (2000), Krashen (2004), Samuels and Wu (2003) support these finding. These

findings run counter to the National Reading Panel's (2000a) suggestion that large

amounts of independent reading do not appear to improve reading achievement including

reading fluency.

      <u>Reading Comprehension (GORT-4)</u>. The number of correctly answered multiple-

choice questions a student answers based on a passage they had just read determined the

reading comprehension score. The average percentile gain for the sample study group

was 23.22 points (WW=25.15, ISR=22.4, Control=22.2). The grade equivalency gains

were relatively the same for all three groups: Word Wall group (1.44), Control group

(1.33), and the Independent Silent Reading group (1.30). These results seem to suggest

that strategies employed by teachers in all three groups were very effective for

developing reading comprehension and therefore might not be related to the intervention

strategies under study. Every teacher reported using reading instruction that emphasized

reading comprehension strategies (see Appendix G). It may also indicate a weakness of

the GORT-4 since a research study published after the completion of this study

challenged the reliability of the comprehension portion of the GORT-4 (Keenan &

Betjemann, 2006). They concluded, "Most questions had passageless accuracies above

chance. . . . the GORT Comprehension Score lacks both content validity and concurrent validity. . .” (Keenan & Betjemann, 2006, p. 363). These results may also lead one to believe that word walls in general or the specific words chosen for these particular word walls may not have been a particularly effective form of vocabulary instruction since the National Reading Panel (2000a) found that vocabulary instruction led to gains in reading comprehension. These findings would support the National Reading Panel's (2000a) notion that independent silent reading practice with minimal guidance or feedback may have little impact on comprehension skill development.

Oral Reading Quotient (GORT-4). The Oral Reading Quotient score on the GORT-4 was touted by the tests' authors (Wiederholt & Bryant, 2001) as the most reliable score of a student's overall reading abilities. They noted that Oral Reading Quotient differences gain of 9 points between Form A and Form B in test-teach-test situations indicates that a reading intervention is effective (Wiederholt & Bryant, 2001). All group mean standard scores for this measure experienced a gain of over 9 points (WW=12.23, ISR=13.78, Control=14.25). The percentile gains for each group were also quite remarkable averaging a gain of 23.67 percentile points (WW=22.33, ISR=25.03, Control=23.65). It is possible to interpret these results in one of two ways: either the specific interventions used in this study made little difference, or they appear to be equally effective.

The fact that both teachers in the Control group reported that they did not use a word wall or independent silent reading for the 12 weeks of the study and that their students experienced the greatest mean standard score point gain for overall reading abilities (GORT-4 Oral Reading Quotient) compared to the experimental groups was

quite revealing. This finding suggests that the daily use of word walls or daily independent silent reading may not be top choices for effective reading instruction approaches for developing overall reading abilities in second grade students. Second grade teachers often rely on a variety of instructional practices to teach and practice the array of reading skills a second grade student needs to develop to become a fluent reader. The selection of reading instruction strategies chosen by the Control group teachers appears to be a little more effective than the strategies employed by the experimental group teachers (see Appendix G for a summary of the reading instruction strategies used by each teacher in this study). The National Reading Panel's (2000a) indifference towards the practice of in-class independent silent reading appears validated by this interpretation of these findings.

Another way to interpret these findings is that they indicate a variety of reading instruction strategies (including the word wall and independent silent reading) can be used effectively to improve overall student reading abilities. This conclusion affirms the Early Reading Expert Panel (2003) report that asserted effective reading instruction involves the development of a variety of interdependent reading skills. They stated, "No single skill in this complex interaction is sufficient on its own, and the teacher must be careful not to overemphasize one skill at the expense of others" (Early Reading Expert Panel, 2003, p.22). Competent readers integrate a variety of skills learned through a variety of methods and strategies (Early Reading Expert Panel, 2003). This interpretation of these findings would support advocates for balanced literacy programs (Cunningham, Hall, & Sigmon, 1999; Cunningham & Allington, 1999).

Knowing the basic reading instruction strategies employed by each teacher during the course of the study (see Appendix G for a summary of each teachers reported reading program), the researcher suggests that these findings may indicate that the reading skill development goals a teacher seeks to accomplish are of paramount importance. Whether they accomplish these goals by using daily practice of independent silent reading, or daily word wall activities or by other reading instruction strategies appears to be of little importance. These findings suggest that daily word wall practice can be effective, daily independent silent reading can be effective, and other reading instruction strategies can be equally or more effective as well. It is imperative for teachers to choose reading instruction practices that help move students from decoding words to automatic recognition of words and phrases while affording students the opportunity to practice the integration of new and developing reading skills. This can be accomplished through a variety of means including reading practice, reading with partners, reading independently and as a group, using word walls and vocabulary instruction, or through various other forms of reading practice. Although both strategies under study appear to be helpful for developing reading skills, neither word walls nor daily independent silent reading appears to be quintessential reading strategies for second grade students.

Sight Word Efficiency (TOWRE). It was evident from the teacher reading instruction surveys and informal posttest teacher interviews (see Appendix G) with the researcher that all six classes in this study had received a solid first grade grounding in phonics. This translated into TOWRE pretest mean scores at the high end of average levels (SWE=106.8, PDE=104.39, TWRE=106.72; average level scores range from 90-110). The sight word efficiency score measured the number of common words students

could read from a given list in 45 seconds. The average percentile gain for the sample

study group was 9 points (WW=10.07, ISR=9.47, Control=7.47). Although all groups

experienced statistically significant gains in reading rate over the course of this study, the

grade equivalency gain was greatest for the Independent Silent Reading group (0.88) by 2

months over both the Word Wall group (0.66) and the Control group (0.67). These

findings suggest that independent silent reading is more effective for building sight word

reading skills than word walls and lack of independent silent reading practice. These

findings support the idea that effective vocabulary instruction involves practicing reading

words in meaningful context (National Reading Panel, 2000a; Early Reading Expert

Panel, 2003; Kuhn, 2005; Stahl, Kuhn, & Pickle, 2006; McKeown & Beck, 2006;

Rasinski, 2003).

Phonemic Decoding Efficiency (TOWRE). Phonemic Decoding Efficiency is a

measure of student ability to decode unknown non-words using phonemic decoding

skills. It is worth noting that although the overall percentile rank gain for the sample

group was 4.13 percentile points (WW=3.79, ISR=3.29, Control=5.30) only the

Independent Silent Reading group (0.93) and the Control group (0.77) experienced

significant gains in grade equivalency over the anticipated gain of 3 months. The Word

Wall group (0.33) experienced a grade equivalency gain almost equal to the anticipated

gain. These findings suggest that word walls may be less effective at developing

phonemic decoding efficiency than independent silent reading practice and other reading

instruction methods.

Total Word Reading Efficiency (TOWRE). The Total Word Reading Efficiency

standard score on the TOWRE was purported by the tests' authors (Torgesen, Wagner, &

Rashotte, 1999) as the most reliable score of a student's overall word reading abilities.

The gains in mean standard scores for all three groups were very small and relatively

similar with an average sample gain of 4.38 (WW=3.51, ISR=5.27, Control=4.35). The

percentile gains for each group averaged a gain of 7.48 percentile points (WW=8.16,

ISR=7.48, Control=6.80). Since all three groups experienced relatively similar but small

gains, these findings suggest that neither intervention appears to be effective for

improving isolated word-reading abilities.

Researcher's Insights into Reading Fluency Development of Second Grade Students

       The researcher's analysis and interpretation for the findings of this research study

were four-fold. He summarized these insights below and explained them in more detail

in the following paragraphs.

1. The beginning of second grade is a key growth period for reading fluency
   development.

2. Since oral reading fluency appears to be a reading skill that grows rapidly
   over a relatively short period, a linear measure of this skill may not be
   appropriate.

3. Numerous reading instruction practices can contribute to the array of skills
   beginning readers must develop to reach the stage of reading fluency. (Daily
   word wall activities or daily independent silent reading may be helpful but are
   not essential for developing these skills.)

4. Effective teachers can adapt and employ a variety of reading instruction
   practices to achieve their goal of helping their students become fluent readers.

All three groups in this study experienced statistically significant grade equivalency gains in the short three-month period of this study. This finding corresponds to the researcher's teaching experience. Each year the researcher taught second grade, the researcher noticed students seemed to experience a very rapid growth in reading skills each fall. It seems reasonable to suggest that the beginning of grade two is a key period of growth and acquisition of reading fluency skills. This notion fits well with Chall's (1996) stages of reading development as the period when children become unglued from print. A majority of students appear to become proficient in alphabetic and phonemic awareness skills in kindergarten, develop effective letter decoding skills in first grade, and become accomplished in reading fluency skills and a certain level of comprehension skills in second grade. Once a skill has been mastered, it appears to become integrated and internalized as an automatic part of a reader's holistic information processing system which a student can seemingly summon as needed. Over time, it is apparent that readers adapt, adopt, change, and employ different reading skills and strategies to the task of deriving meaning from text.

Paris (2006, p. 368) suggested, "some reading skills, such as alphabet knowledge, concepts of print, and oral reading fluency, are developmentally constrained by nonlinear growth patterns that resemble sigmoid curves (i.e., slow initial learning followed by rapid growth followed by decelerating growth as the asymptote is approached)." If this is true, based on the finding of this study, reading skills like oral reading fluency that develop rapidly in a relatively short period need focused assessment tools to monitor progress over weeks and months rather than over months and years. This type of assessment would help teachers isolate and target specific skill development for individual students

who lag in the development of reading fluency. Additionally, it may be that focused, consistent fluency instruction is primarily beneficial for beginning second grade students.

All teachers involved in this study had reading fluency as one of their primary goals for their students. It was evident from the reading logs and reading surveys completed by each teacher and from my posttest interviews that each teacher employed a variety of reading instruction strategies, often very different from one another. The results of this study indicate that word walls and in-class independent silent reading practice are not essential reading instruction strategies for developing reading fluency in second grade students. Focussed group novel studies, repeated reading, guided reading, readers' theater, comprehension instruction, a number of forms of reading practice, and a variety of other reading instruction practices seem to be just as effective and maybe more effective for developing reading fluency in second grade students than word walls and independent silent reading.

The researcher randomly assigned to each group the teachers that agreed to be part of this study. For the 12 weeks of the study, each teacher was required to forgo, using a reading instruction strategy she was in the habit of using (all of the teachers previously used various forms of word walls and independent silent reading). The significant growth of reading abilities by each group suggests that the teachers were able to substitute a variety of other reading instruction practices to achieve their reading development goals for their students. It is quite evident that effective teachers ably employ a variety of reading instruction techniques and strategies to achieve their goals. Word walls and independent silent reading are two reading instruction methods that are not sacrosanct.

Implications for Reading Instruction

Reading practice, whether independent silent reading, group novel studies, or basal reading is essential for affording students the opportunity to practice and integrate their newly acquired reading skills. Teachers have a variety of techniques and strategies to choose from when developing and implementing their respective reading instruction programs. Teachers ought to begin by determining their reading instruction goals for their students and identify the component reading sub-skills they want to develop in their students. Once they have identified these targeted reading sub-skills, they will be better able to choose the appropriate and most effective reading instruction strategies to accomplish their goals. Word walls and independent silent reading are two of many reading instruction strategies that may help teachers accomplish these goals.

Some teachers utilize a word wall in second grade for the purpose of building automaticity of high frequency words and teaching common spelling patterns. The daily use of word walls appears to be one of many effective reading instruction tools that help build reading skills in second grade students. Based on the results of this study, it appears to be an effective but non-essential strategy for the development of reading accuracy, rate, fluency, comprehension, sight word efficiency, and phonemic decoding efficiency skills.

It has been said that reading is often over-taught and under-practiced. Few would argue that reading is a skill that improves with practice, and most educators would like to see their students engaged in more reading. The question arises whether in-class independent silent reading is the best use of limited class time for developing reading fluency. At the second grade level, daily Independent Silent Reading appears to be a

beneficial activity that affords students the opportunity to integrate and practice their

newly developing reading skills. Students in the Independent Silent Reading group of

this study experienced statistically significant gains for reading rate, accuracy, fluency,

comprehension, overall reading skills, sight word efficiency, phonemic decoding

efficiency, and total word reading efficiency scores. Reading fluency gains scores for the

Independent Silent Reading group topped the other groups in four of six reading

measures (rate, fluency, sight word efficiency, phonemic decoding efficiency) with gains

of between 1 year 2.5 months for reading accuracy to 1 year 4 months for reading rate.

Daily independent silent reading at the second grade level should not be viewed as the

only effective form of reading practice for developing reading fluency since the Control

group and the Word Wall group, which did not engage in any independent silent reading

experienced similar (although lower) gains in most reading measures. A variety of

reading practice methods appear to be comparably effective and in some cases (accuracy

and comprehension) may be slightly more effective for second grade students (see

Appendix G for a summary of each teachers reading instruction survey).

<p style="text-align:center;">Delimitations</p>

One should note that this research study focused on a relatively small number of

second grade students, and therefore one must be careful not to over-generalize the

results of this study to all primary grade students in all settings. Another caution one

should consider when using this study to generalize effects is that the sample group was

composed of classes in private independent Christian schools in southern Ontario,

Canada. Generally, the students from these families experience a stable two-parent home

environment. The overwhelming majority of the students in this study are Caucasian,

and the families' socio-economic status is typically in the middle to upper income level range. Since this is the first study of its kind relative to the use of word walls in the development of oral reading fluency, further research in this area would need to be undertaken to validate or challenge the results of this study. Similar studies of independent silent reading exist, and the results of this study ought to be examined in the light of these other studies.

The researcher also recognized that word wall advocates and independent silent reading promoters recommend the use and integration of these approaches as part of a larger, comprehensive language arts program at the primary level (Cunningham, Hall, & Sigmon, 1999). Fifteen minutes of daily word wall activities or 15 minutes of daily independent silent reading alone, is not an adequate reading instruction program and should only be used to supplement a balanced reading instruction program. Refer to Appendix G for additional insight into the general overall reading instruction program used by each teacher in this study. The researcher did not seek to dictate or control the composition of the reading instruction program, although the researcher did ask teachers in the Control group not use word walls or independent silent reading during the 12 weeks of the study. Additionally, the researcher asked teachers in the Word Wall group not to use any independent silent reading during the study, and the researcher asked teachers in the Independent Silent Reading group not to use word walls for the duration of the study. The researcher also asked the teachers to keep an informal journal of their reading instruction methods used during the study to help the researcher understand the nature of the reading program used in each class over the course. At the end of the study, the researcher interviewed each teacher about the reading instruction strategies they did

use during the study (a summary of each posttest interview for each teacher is included in Appendix G). The primary purposes of this study were to isolate the practice of 15 minutes of daily usage of word wall activities and 15 minutes of daily independent silent reading to determine if either strategy was effective at promoting reading fluency development in second grade students.

The author recognized that there are numerous kinds of word walls and various approaches to the use of word walls as well as various ways to conduct an independent silent reading program. This study focused only on the daily use of a combination high-frequency/chunking word wall and daily free independent silent reading time. See Appendix D and E for an outline of seminar training given to teachers in this study regarding how to use a daily word wall program or a daily independent silent reading. One should also note that since students in the Word Wall group only used the word wall daily for 12 weeks, students studied only a selection of high-frequency words (sixty words) during the course of this research study. The researcher gave each teacher in the Word Wall group a standard published second grade word wall resource package with 120 words and each teacher chose which words they wanted to focus on during the 12 weeks of the study (see Appendix C for a list of words from which they made their choices). This study was conducted in the fall, a time when second grade students, according to the researcher's experience, often make the greatest gains in reading skill development. The independent silent reading results from this study should be interpreted in the light of other similar studies. The researcher asked the Independent Silent Reading group teachers to approach this classroom reading time pro-actively to encourage students to read appropriate and interesting material. They did not simply ask

students to take out a book for 15 minutes and read (see Appendix D for an outline of independent silent reading strategies given to the teachers). The researcher did not measure or control the quantity or quality of independent silent reading practice students may have engaged in outside of the classroom during this study.

<div align="center">Recommendations for Additional Research</div>

The researcher is quite confident that each of the teachers employed the word wall intervention and the independent silent reading strategy as requested since their reading logs and reading instruction surveys indicate that they did. It may be that the particular style of word wall or the words chosen for inclusion on the word wall (from a published resource; see Appendix C for a list of the words the teachers could have used) may have been too simple or too difficult to be helpful for improving reading fluency. McKeown and Beck (2006) noted that identifying appropriate target words for vocabulary instruction is very challenging. Additional research on different styles of word walls, focusing on less common words (i.e. tier two words, McKeown & Beck, 2006), and the use of word walls at different grade levels may help answer some of these lingering questions about the effectiveness of word walls for developing oral reading fluency skills.

Beyond the development of automaticity for high frequency words and common spelling patterns to promote reading fluency, the researcher recommends continued research into identifying effective teaching strategies for the development of other sub-skills that contribute to reading fluency development (i.e. phonemic awareness, decoding knowledge, sight word knowledge, word recognition, prosody, and comprehension). Ritchey (2002) and Speece, Mills, and Ritchey (2003) have started to do this for kindergarten students. Paris (2006) also suggested that the reading sub-skills of fluency

and comprehension might be dependent during initial acquisition, but become

independent after mastery of one of the skills. This direction of research may help to

reveal effective strategies for targeting these sub-skills.

The Independent Silent Reading group teachers indicated that the length of

independent reading practice time seemed to be appropriate for their second grade

students and suggested that they might be able to read silently and independently for up

to 30 minutes per day but no longer. Samuels and Wu (2003) did comparisons of the

length of independent silent reading (15 minutes versus 45 minutes) for third and fifth

grade students. Additional research on length of in-class independent silent reading

practice time at a variety of grade levels as the National Reading Panel (2000a) has

recommended may also prove useful to help determine when along the continuum of

reading development independent silent reading practice is most beneficial. Kuhn's

(2005) approach of using a Control group within a class that is undergoing a reading

treatment seems to be an effective way to control for most other factors affecting reading

instruction. Since this study demonstrated in-class independent silent reading is not the

only form of effective reading practice, the researcher also recommends addition research

to investigate the effectiveness of some of the other forms of in-class reading practice

employed by the Control group teachers in this study (i.e. group novel studies with

repeated readings, in-depth comprehension activities, partner reading, and reader's

theatre; see Appendix G).

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APPENDIX A

The 107 Most Frequently Used Words in Written English (Zeno et al., 1995)

the	at	we	many	first	know
of	or	what	these	new	little
and	from	about	no	very	such
to	had	up	time	my	even
a	I	said	been	also	much
in	not	out	who	down	our
is	have	if	like	make	must
that	this	some	could	now	it
but	would	has	way	was	by
so	him	each	for	were	people
how	called	you	one	them	than
did	he	all	other	two	just
on	she	more	may	after	as
when	will	only	water	are	an
into	most	through	they	their	your
its	get	with	there	which	made
because	be	her	do	over	back
his	can	then	see	where	

APPENDIX B

Fry's List of 300 Instant Sight Words (Fry & Kress, 2006)

First Hundred

a	can	her	many	see	us
about	come	here	me	she	very
after	day	him	much	so	was
again	did	his	my	some	we
all	do	how	new	take	were
an	down	I	no	that	what
and	eat	if	not	the	when
any	for	in	of	their	which
are	from	is	old	them	who
as	get	it	on	then	will
at	give	just	one	there	with
be	go	know	or	they	work
been	good	like	other	this	would
before	had	little	our	three	you
boy	has	long	out	to	your
but	have	make	put	two	
by	he	man	said	up	

Second Hundred

also	color	home	must	red	think
am	could	house	name	right	too
another	dear	into	near	run	tree
away	each	kind	never	saw	under
back	ear	last	next	say	until
ball	end	leave	night	school	upon
because	far	left	only	seem	use
best	find	let	open	shall	want
better	first	live	over	should	way
big	five	look	own	soon	where
black	found	made	people	stand	while
book	four	may	play	such	white
both	friend	men	please	sure	wish
box	girl	more	present	tell	why
bring	got	morning	pretty	than	year
call	hand	most	ran	these	
came	high	mother	read	thing	

Third Hundred

along	didn't	food	keep	sat	though
always	does	full	letter	second	today
anything	dog	funny	longer	set	took
around	don't	gave	love	seven	town
ask	door	goes	might	show	try
ate	dress	green	money	sing	turn
bed	early	grow	myself	sister	walk
brown	eight	hat	now	sit	warm
buy	every	happy	o'clock	six	wash
car	eyes	hard	off	sleep	water
carry	face	head	once	small	woman
clean	fall	hear	order	start	write
close	fast	help	pair	stop	yellow
clothes	fat	hold	part	ten	yes
coat	fine	hope	ride	thank	yesterday
cold	fire	hot	round	third	
cut	fly	jump	same	those	

APPENDIX C

Published Word Wall List Resource
The Four Blocks Literacy Model—Word Wall "Plus" for Second Grade (A published word wall resource) (Hall & Cunningham, 2003).

Teachers in the word wall group were provided with "The Four-Blocks[R] Literacy Model—Word Wall "Plus" for Second Grade" resource which included five starfish with vowels, 21 fish with consonants, 120 high frequency word cards, 7 homophone clue cards, 7 charts, and an eight-page teacher resource guide with directions for utilizing Word Wall "Plus" in the classroom. Teacher's chose to introduce 5 new words to their classroom word wall from this list during the 12 weeks of the study for a total of 60 word wall words by the end of the study. Boldfaced words in the following list indicate words often used on first grade word walls while the underlined word segments are common spelling patterns (as noted in the teacher resource guide).

about	friends	or	their
after	**girl**	other	**them**
again	green	our	then
are	gym	outside	**there**
beautiful	**have**	**people**	they
because	**here**	phone	they're
before	**house**	played	**thing**
best	**how**	**pretty**	those
black	hurt	**quit**	**to**
boy	**I**	**rain**	too
brothers	into	really	trip
bug	it's	**ride**	truck
can't	joke	right	two
car	**jump**	said	use
caught	junk	sale	**very**
children	kicked	**saw**	wanted
city	knew	**school**	**was**
clock	line	shook	**went**
could	**little**	**sister**	were
crash	**made**	skate	**what**
crashes	mail	slow	**when**
didn't	**make**	small	**where**
don't	many	snap	**who**
drink	more	sometimes	**why**
eating	name	sports	**will**
every	new	stop	**with**
favorite	**nice**	**tell**	won
first	**not**	than	**won't**
float	**off**	thank	write
found	one	that's	writing

APPENDIX D

Outline of Daily Word Wall Treatment Group Training Seminar

1. What are Word Wall?

    a. Rise to popularity

    b. 3 Purposes/Categories of Word Walls

        i. Primary reading and writing instruction

        ii. Building content vocabulary

        iii. Providing structure and process reminders

    c. Kinds of Primary Reading and Writing Instruction Word Walls

        i. ABC

        ii. High-Frequency

        iii. Chunking

        iv. Combination

        v. Dictionary

        vi. Phonetic Feature

        vii. Name Wall

        viii. Portable

        ix. Word Family

        x. Help Wall

2. Theory Behind Word Walls

    a. Edward Dolch—220 Sight Words; Fry—300 instant sight words; Zeno—

       107 words

    b. LaBerge & Samuels (1974)--Automaticity Theory

     c. Adams (1990) Phonics and Chunking

     d. Patricia Cunningham (1991, 2000)—Chunking/Common Spelling Patterns

3. Style of Word Wall to Be Used in this Study

     a. High-Frequency/Chunking Word Walls

     b. Appearance in Your Classroom

4. Selection of Word Wall Words

     a. Various Approaches

          i. High Frequency (often unusual spelling patterns)

          ii. Word Families (grouped by common vowel patterns, rimes, or endings)

          iii. Common consonant blends and letter combinations

          iv. Common Contractions

          v. Common Homophones

     b. For this Study (including list of words and word wall resource)

     Teachers will choose from one hundred twenty high frequency/common spelling pattern words. They will add five of these words to their word wall each week for 12 weeks. Sixty words will be on their word wall by the end of the 12 week study.

5. Introduction of Word Wall to Students

6. Typical Weekly Pattern

     a. Monday—Introduce New Words

     b. Tuesday—Review and work with new words

     c. Wednesday—Review, work and play with all word wall words

    d. Thursday—Review, work and play with all word wall words

    e. Friday--Review, work and play with all word wall words

7. Introducing New Words at the Beginning of Each Week (5 each week)

    a. Features of New Words

        i. Shape

        ii. Syllables

        iii. Spelling

        iv. Sound(s)

        v. Matching sounds

        vi. Rhyming Words

        vii. Common Spelling Patterns (onset blends, vowel digraphs, rimes)

        viii. Unique spelling

    b. Meaning and Use of Words in Context

        i. Definition(s)

        ii. Usage

        iii. Synonyms/Antonyms

    c. Methods to Introduce New Words

        i. Visual—Locate word, Show picture

        ii. Auditory-- Chants, Cheers

        iii. Kinesthetic--Hopping, Clapping, Writing, Tracing, etc.

8. Activities for Using, Reviewing, and Playing with Word Wall Words

    a. WORDO

    b. Mind Reader

     c. Guess the Missing Word

     d. Word Families

     e. Rhyming Words

     f. Making and Sorting Words

     g. Using common spelling patterns

     h. Sparkle

     i. Word Scramble

     j. 20 Questions

9. Keeping an Annotated Journal

     a. Words you have added on the first day of each week.

     b. Time spent each day using word wall.

     c. Activities you used for introduction, instruction, and review.

10. Questions About Research Study

APPENDIX E

Outline of Daily Independent Silent Reading Treatment Group Training Seminar

1. Introduction

    a. What Do We Call It?

    b. Three Basic Categories of Independent Silent Reading

        i. Sustained Silent Reading (SSR)

        ii. Self-Selected Reading

        iii. Extensive Reading

    c. A Brief History of Independent Silent Reading

2. Theoretical Basis for the Practice of Independent Silent Reading

    a. The Matthew Effects for Reading Development (Stanovich 1986, Samuels & Wu, 2003, Allington, 2006)

    b. Free Voluntary Reading (Krashen, 2004, Pilgreen 2000)

3. Style of Independent Silent Reading to Be Used in this Study: Daily Sustained Silent Reading

    Characteristics—

    a. Students choose own reading material

    b. No accountability (quiz, report, questions) or record-keeping for what students read

    c. Teacher provides students with a wide range of reading materials at multiple reading levels

    d. 15-minutes of daily, uninterrupted, silent reading time is allocated

    e. The entire class (including the teacher) reads silently during this time

4. Selection of Reading Materials in Classroom for This Study

    a. Broad Variety of Topics (appealing to both boys and girls)

    b. Wide Range of Reading Levels

    c. Various forms of Reading Materials (i.e. books, magazines, comic books, etc.)

5. Eight Factors for SSR Success (Pilgreen, 2000—"Stacked for Success" SSR Program)

        i. Access

        ii. Appeal

        iii. Conducive Environment

        iv. Encouragement

        v. Staff Training

        vi. Non-accountability

        vii. Follow-up Activities

        viii. Distributed Time To Read

6. Reading Incentives That Work (Krashen, 2004)

    a. Greater access to variety of high interest reading materials

    b. Quiet, comfortable reading environment

    c. Read to children (read-a-louds)

    d. Having a positive reading experience

    e. Provide a positive role model of reading

    f. More classroom time to read

    g. Direct encouragement of interesting reading materials

       h.   Discuss what is read

       i.   Positive peer pressure

       j.   Book displays

       k.   Light Reading Materials

7. Introduction of Daily Sustained Silent Reading Program to Students

       a.   Students will catch your enthusiasm

       b.   Suggested Rules for practice:

          i.   Find a comfortable place and get plenty to read.

          ii.   Take care of health issues (washroom breaks/drinks) before or

              after SSR.

          iii.   Don't sit by friends or enemies.

          iv.   Don't notice anything else—just read.

          v.   Don't make a sound.

          vi.   Don't move around.

(Suggestions from "Sustained Silent Reading: Try it, you'll like it!" by Cynthia

Anderson, 2000.)

8. Typical Daily Pattern

       a.   Recommend allocating the same 15-minute period of SSR per day for the

          12-week period of the study.

       b.   First week, explain the SSR routine and reinforce the 5 characteristics.

          Establish your SSR rules. May need to start with 5 or 10 minute reading

          times and build to 15 minutes by the beginning of the second week.

9. Keeping an Annotated Reading Log

    a. Record the day and time spent on SSR each day (i.e. September 30—

       10:30-10:45).

    b. Record the number of books (and other reading materials) you decide to

       make available to your students.

    c. Note when you change the selection of reading materials offered.

    d. Record anything else unusual or interesting.

10. Summary of ISR Training

    a. 'The more a child reads, the better the become at reading.' Matthew Effect

    b. Selection of reading material:

       i. Variety of topics (appeals to boys and girls)

       ii. Include wide range of reading levels

       iii. Consider various forms of reading materials

    c. 8 Factors for SSR Success

    d. Establish your SSR routine early and record times in log

11. Review of SSR Practice During the Research Study

    a. Students choose own reading material

    b. No accountability (quiz, report, questions) or record-keeping of reading

    c. Teacher provides students with a wide range of reading materials at

       multiple reading levels

    d. 15-minutes of daily, uninterrupted, silent reading time is allocated

    e. The entire class (including the teacher) reads silently during this time

12. Questions About Research Study

APPENDIX F

Overall Reading Program Survey. Given at the end of the study regarding reading instruction strategies used by each teacher during the course of the research study.

1. In a general way, describe the overall reading instruction program you have used during the 12 weeks of this research study.

    _____

    _____

    _____

    _____

2. On average, estimate how often and how much time you spent using each of the following reading instruction strategies, techniques, or activities over the course of the 12 weeks of this study.

Reading Instruction Strategies, Techniques, or Activities	Average Daily Usage (in minutes)	Average Weekly Usage (in minutes)	Estimated Total Usage (min.) Over The 12-Week Study
Word Wall			
Teaching Sight Words			
Independent Silent Reading			
Independent Reading Homework-book bags			
Phonemic Awareness Skills			
Direct/Explicit Phonics Instruction			
Embedded Phonics Instruction			
Word/Vocabulary Study			
Group or Individual Novel Study			

Book Reports (oral or written)			
Read-a-louds (teacher reads a book aloud to the class)			
Books on Tape/CD			
Shared Reading (i.e. Big Book, choral reading, etc.)			
Repeated Reading (same text numerous times till proficient)			
Basal Readers			
Round Robin Reading			
Guided Oral Reading (small group by ability, teacher supported)			
Guided Pairs (skilled reader models then reads in unison with less skilled reader)			
Partner Reading (read aloud to partner, feedback, re-read)			
Individual Coaching by teacher or assistant			
Readers' Theater (dramatic reading, perform a play)			
Guided Comprehension (previewing, reflection, self-questioning, linking)			
Comprehension Questions			
Story Structures/ Graphic organizers			
Summarizing/Key Details			

APPENDIX G

Summary of the Overall Reading Programs Used by Teachers During the 12-week Study

Teacher A

This teacher was part of the Word Wall group and had a class of 21 second-grade students (9 males, 12 females). She had over ten years experience teaching second grade. During the study, she reported using word wall activities for 15 minutes every day. She also noted that she taught direct sight words for 5 minutes each day, taught phonemic awareness skills for 5 minutes each day and taught phonics directly through her spelling program (Modern Curriculum Press) for 10 minutes each day introducing on average 15 spelling words each week. She did not use any independent silent reading nor did she assign any independent reading homework over the 12 weeks of the study. This teacher reported that she had the students do group novel studies about 15 minutes each day and she noted that she also did about 15 minutes of read-a-louds each day. She used the Journey's Series of basal readers (consisting of a mixture of poems and stories) to have students engage in shared class reading about twice each week, round robin reading 2 or 3 times each week, and with guided repeated reading of two stories each week. Each student read with a grade six 'reading buddy' for 15 minutes each week and individually supported by the teacher for 5 minutes each week. The teacher also spent minimal time each week discussing story structures, sequencing, mapping, and finding details in stories.

Teacher B

This teacher was part of the Word Wall group and had a class of 18 second-grade students (11 males, 7 females). She had less than 5 years experience teaching second

grade. During the study, she reported using word wall activities for 15 minutes every

day. She also noted that she taught direct sight words for 10 minutes each day, taught

phonemic awareness skills and phonic directly 20 minutes each day using the Modern

Curriculum Press series, and she taught a self-developed spelling program for 20 minutes

each day based on books and stories read in class. She did not use any in-class

independent silent reading during the 12-week study but she did assign 10 minutes per

night of independent reading homework in which children would self-select books related

to a theme. This teacher reported that she did not have students do any group novel

studies but she noted that she also did about 15 minutes of read-a-louds each day. She

said that her reading program (separate from her phonics, word wall, word study time)

consisted of about 35 minutes per day. Reading lessons and stories were taken from the

Collections Series (Prentice Hall Ginn) and generally involved 1 or 2 stories each week.

She noted that daily lessons focused on sequencing, character sketches, plots,

comprehension strategies, and fluency instruction. She reported that shared reading,

repeated reading, round robin reading, guided oral reading, guided paired reading, and

partner reading were strategies that she used sporadically an average of 15 minutes each

week. About thirty minutes each week were devoted to individual coaching, guided

comprehension, comprehension questions, and story structures while summarizing and

identifying key details activities received sixty minutes of attention each week.

Teacher C

        This teacher was part of the Independent Silent Reading group and had a class of

23 second-grade students (11 males, 12 females). She had over 5 but less than 10 years

experience teaching second grade. She reported that she did not use a word wall and that

she did not teach any sight words or assign independent reading homework. She had students engage in 15 minutes of free, self-selected, silent reading each day and she provided students with a variety of 40-50 new non-fiction and fiction books every two weeks (from the local public library and her school library) in addition to her class library, school library, and collection of children's magazines. She used the A Beka Publishing phonics program and the Bob Jones University Press spelling program noting that phonemic awareness, direction phonics instruction, and embedded phonics instruction take up about 1 hour per week. She noted that word study involved about 20 minutes each week. She stated that group novel studies were at the core of her reading program. They focussed on a new novel every 2-3 weeks and completed 5 group novel studies over the course of this 12-week research study. She used Readers' Theatre for each novel for a total of 2.5 hours over the 12 weeks of the study. The teacher engaged in read-a-louds about 10 minutes each day and daily shared choral reading (primarily of the Bible) for a total of 30 minutes each week. She used basal readers (A Beka Publishing) 20 minutes per week and partner reading about 30 minutes each week. She reported spending a lot of time working on reading and listening comprehension skills (1 hour per week) and a total of about 2 hours over the course of the 12-week study on story structures, summarizing, and finding details. A total of 2 hours was spent listening to books on tape/cd.

Teacher D

This teacher was part of the Independent Silent Reading group and had a class of 19 second-grade students (6 males, 13 females). She had over 10 years experience teaching second grade. She reported that she did not use a word wall and that she did not

teach any sight words. She had students engage in 15 minutes of free, self-selected, silent reading each day and she provided students with variety of between 800-1000 books in their classroom library including 500 picture books, 300 chapter books, 150 leveled easy reader books, 10-15 children's magazines, and 5 comic books. The classroom library contained a wide variety of genres including both fiction and non-fiction. In addition, they could sign out two books each week during their weekly visits to their school library (3000 books). In addition to the in-class silent reading time, she expected 10-15 minutes of independent reading homework using books selected by the teacher and sent home in book bags. She reported that she taught about 15 minutes of phonics each day using a self-developed program loosely based on Month-by-Month Phonics (McCracken). She also used a self-designed spelling program loosely based on the Impressions reading series (her basal readers) for word study about 5 minutes each day. She engaged in 5-10 minutes of teacher read-a-louds each day. The listening centre contained numerous books on tape that were used an average of ten minutes per week. She noted the following reading strategies were used between 10 and 15 minutes per day: shared reading, repeated reading, basal readers (Impressions: Literacy 2000), partner-reading, readers' theatre, comprehension questions, story structures, summarizing and details. She reported using guided comprehension 40 minutes per week. She noted that they did not do any novel studies during these 12 weeks.

Teacher E

This teacher was part of the Control group and had a class of 16 second-grade students (10 males, 6 females). She had over 10 years experience teaching second grade. She reported that she did not use a word wall or in-class independent silent reading

during the 12-week course of the study. She did note that she required all students to keep an at home reading log with the goal of reading ten books per month (most students reported completing this month reading homework). She reported that 20 minutes each week included the teaching of some sight words as part of the teacher-developed spelling based on the Collections-2 basal reading series. She also used sixty minutes of weekly teacher-developed phonics instruction. She noted that she engaged students in 10-15 minutes of teacher lead read-a-louds each day. The teacher reported using basal reader for instruction 30 minutes per week, and partner reading for 20 minutes each week. She stated that she used guided comprehension and summarizing strategies about 30 minutes each week. She noted that guided reading of basal readers was the core of the reading program used over the 12 weeks of the study. She stated that she would discuss high frequency words with the students before each story and test them as they completed each reader (3 readers were completed during the 12-week study). The teacher reported that generally, she read aloud the basal story, had students practice reading the stories in a number of ways, and then have students do various comprehension activities related to the stories.

Teacher F

This teacher was part of the Control group and had a class of 24 second-grade students (11 males, 13 females). She had less than 3 years experience teaching second grade. She reported that she did not use a word wall, teach sight words, or use in-class independent silent reading during the 12-week course of the study. She noted that independent reading at home was encouraged but not enforced. The teacher stated that her scheduled reading instruction period is 30 minutes per day, four days per week. She

explained that during this time, they do a group novel study, reading and interacting with the book for 2-3 weeks. She estimated that by the end of the novel study, they had read the book about 10 times. She added that she also taught reading comprehension separately for 20 minutes each week. She noted that reading practice occurs in many other subject areas. She used the A Beka Publishing phonics program about 35 minutes per day and word study based on their novel study books about 15 minutes per week. She reported that she used group novel study activities about 30 minutes each day, teacher read-a-louds 10 minutes per day, and shared reading (primarily choral reading of the Bible) for ten minutes each day. She also noted that she used whole class round robin reading 30 minutes per day and partner reading 10 minutes per day. She used various comprehension strategies such as sequencing, guided comprehension, questions, story structures, summarizing, and details a total of about 10 hours during the period of this research study. She stated that she used a total of 2 hours of readers' theatre during the 12-week study.

APPENDIX H

Table 13

Mean Standard Scores Gains and Mean Percentile Ranks Gains Comparisons (WW, ISR, Control, N=121)

Variable	Group	Standard Scores			Percentile Rank		
		Pretest	Posttest	Gain Score	Pretest	Posttest	Gain Score
GORT-4							
Rate	WW	9.74	10.97	1.23	46.56	60.18	13.62
	ISR	10.64	12.76	2.12	55.48	74.93	19.45
	Control	10.15	11.73	1.58	50.60	66.28	15.68
Accuracy	WW	9.74	11.00	1.26	47.41	59.67	12.26
	ISR	9.21	11.60	2.39	41.43	63.60	22.17
	Control	9.18	11.75	2.57	41.43	67.25	25.82
Fluency	WW	9.46	10.79	1.33	44.31	57.90	13.59
	ISR	9.76	12.02	2.27	46.19	66.57	20.38
	Control	9.35	11.73	2.38	43.10	66.10	23.00
Comp.	WW	9.10	11.85	2.75	41.23	66.38	25.15
	ISR	10.55	12.88	2.33	56.00	78.40	22.40
	Control	10.35	12.68	2.33	53.20	75.40	22.20
Oral Reading Quotient	WW	95.69	107.92	12.23	41.31	63.64	22.33
	ISR	100.93	114.71	13.78	52.40	77.43	25.03

	Control	99.03	113.28	14.25	49.43	73.08	23.65
TOWRE							
Sight Word Efficiency	WW	104.10	108.92	4.82	58.49	68.56	10.07
	ISR	109.36	114.95	5.59	69.60	79.07	9.47
	Control	106.93	111.28	4.35	65.08	72.55	7.47
Phonemic Decoding Efficiency	WW	102.44	103.77	1.33	54.31	58.10	3.79
	ISR	106.26	109.26	3.00	63.50	66.79	3.29
	Control	104.48	107.48	3.00	59.40	64.70	5.30
Total Word Reading Efficiency	WW	103.97	107.48	3.51	57.46	65.62	8.16
	ISR	109.33	114.60	5.27	68.12	75.60	7.48
	Control	106.85	111.20	4.35	63.85	70.65	6.80

Note. Oral Reading Quotient Standard Scores of 90-110 indicate average level reading skills. A difference of 9 points between pre-test (Form A) and post-test (Form B) scores is considered statistically significant by the test authors. Total Word Reading Efficiency Standard Scores of 90-110 indicates average level word-reading skills. Word Wall group N=39, Independent Silent Reading group N=42, Control group N=40.

APPENDIX I

Timeline of the Research Study

May 31, 2006—Permission to study second grade students from between two and six classes was requested and obtained by the researcher.

June 30, 2006—Four research assistants were chosen, trained, and involved in a practice session using the assessment tools with a number of grade two students.

August 2006—Teachers and their respective classes were randomly assigned to experimental and Control groups. Teachers in the experimental groups were trained in either the daily use of the high frequency/chunking word walls or in the use of independent silent reading they would use throughout the course of this study.

September 12-14, 2006—During the second week of school, all second grade students were individually pretested for oral reading fluency using Form A of the GORT-4 and Form A of the TOWRE.

September 18th, 2006--All teachers in the experimental treatment groups begin 15 minutes of daily word wall instruction or 15 minutes of daily independent silent reading.

December 8, 2006—The 12-week study is complete.

December 11-15, 2006--All students in both the Control group and experimental groups were individually posttested for oral reading fluency using Form B of the GORT-4 and and Form B of the TOWRE. The researcher also collected the teacher's annotated reading instruction logs and interviewed each teacher about their reading instruction program during the 12 weeks of the study.

December 15, 2006-January 31, 2007—The researcher analyzed and interpreted the data collected during the study.