TRADE BOOKS: HOW THEY SIGNIFICANTLY INCREASE STUDENTS' VOCABULARY, COMPREHENSION, FLUENCY, AND POSITIVE ATTITUDES TOWARD READING

Institute for Literacy Enhance Research Report 1739-004

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Executive Summary

The purpose of the research reported in this document was to identify the effects of trade books, workbooks, thematic studies, and basal readers on students' vocabulary development, reading comprehension abilities, fluency rates, and positive attitudes toward reading. The goal was to document which practices are effective in closing the ever-increasing literacy achievement gap that exists in the United States and other English-speaking nations. The need for these data has high significance in light of No Child Left Behind Legislation, and the ever-increasing number of school districts that are adding 20 additional minutes of supplemental reading instruction to their basic literacy program. Findings from this study can assist educators to select the most advantageous methods of increasing students' literacy achievement, paying particular attention to the fact that some of their students will be reading above, on, or below their grade level placements.

Five specific hypotheses were tested by exposing 436 experimental subjects from second, third, fourth and sixth grades to four distinct, experimental treatments. Every subject received all treatments so as to employ the most stringent experimental statistical model. In addition, 303 matched-group control subjects were utilized. In the controlled conditions, subjects were allowed to continue in their traditional, basal reading program during the time period in which experimental subjects received treatments. This design was selected so that time variables could be controlled. The assignment of subjects to

treatments, and the order in which treatments were delivered, were randomized and counterbalanced.

At the end of the study, the treatment that resulted in the highest percentage of students that increased in total reading achievement (as identified by scores on the Stanford Nine Achievement Test, book tests, and teacher pre and post-test rankings of students' overall reading achievement) was the reading of two non-fictional books back-to-back. This treatment resulted in a 10% gain in overall reading ability for the total population.

An additional twenty-three specific positive effects of using trade books to increase reading achievement for above, on, and below grade level students were also found to be statistically significant. These data document that incorporating an additional twenty minutes of trade book reading into the daily reading program of second, third, fourth, and sixth graders significantly increased students' overall reading abilities, vocabulary development, comprehension abilities, fluency, and positive attitudes toward reading in more than 23 statistically significant manners.

Equally important, the reading of two, non-fictional trade books back-to-back that are on the same subject, significantly increased the reading abilities of above, average, and below-grade level readers in fourteen statistically significant ways. Similarly, allowing students to select the book that they want to read and engaging in teacher-monitored, student-regulated sustained silent reading periods increased these groups of students' reading abilities in nine statistically significant ways. Only when the total number of positive effects obtained from (a) continued basal reading, (b) work book reading, (c) teacher-selected fictional reading, and (d) sustained silent reading with

teacher-direction to practice only the strategy that students were just taught are totaled together does the number of statistically significant effects upon above, on, and below grade level readers' achievement equal nine statistically significant results.

Asking students to work for an additional 20 minutes in recently-published, supplemental workbooks that were written to increase students' vocabulary, comprehension, fluency, and positive attitudes (i.e., reading short stories and answering questions about them) did not result in statistically significant gains in overall reading achievement.

The effects of individual treatments upon different ethnic groups, genders, and grade levels were also analyzed. There were no statistically significant effects when ethnic group was the fixed variable. There were 12 statistically significant effects of individual treatments upon second graders' reading abilities; 13 statistically significant effects upon third graders' reading abilities; 12 statistically significant effects upon fourth graders' reading abilities; and, 12 statistically significant effects upon sixth graders' reading abilities.

Many anecdotal, informal measures of the effects of each treatment were also collected. For instance, in some second grade experimental classes, reports were obtained that students read for fun more while they were engaged in trade book treatments at school. They also reported to discuss what they had read with their families, and talked about these reading treatments with family members. Some parents were so pleased by the progress, which they had witnessed in their children's reading growth, that they purchased the books that their children were most enthusiastic about reading. Caregivers reported to reread these books to their children repeatedly at home. It was

also apparent to many parents that their children were learning very vital information from nonfiction books and enjoying these books.

Another informal observation occurred. It was noted by teachers and researchers that students' highest quality writing products were obtained when students were engaged in the experimental treatments that employed high quality trade books. Thus, the effects of trade book reading on the amount of out-of-school, self-selected leisure time reading, and on students' writing abilities need to be tested empirically. Other implications for future research and practice are cited in this research report.

TRADE BOOKS: HOW THEY SIGNIFICANTLY INCREASE STUDENTS' VOCABULARY, COMPREHENSION, FLUENCY, AND POSITIVE ATTITUDES TOWARD READING

A recent synthesis of six major, multimillion U.S. research studies reaffirmed what educators have sought to prove for forty years: no program can be equally effective for all children, nor can one method be all things for all teachers (Cowen, 2003). Cohen based this finding on the research undertaken by:

- The Cooperative Research Program in First Grade Reading Instruction [The First Grade Studies] (Bond & Dykstra, 1967 & reprinted Bond & Dykstra, 1997);
- Learning to Read: The Great Debate (Chall, 1967);
- Becoming A Nation of Readers: The Report of the Commission Reading (Anderson, Hiebert, Scott & Wilkinson, 1985);
- Beginning to Read: Thinking and Learning About Print (Adams, 1990);
- Preventing Reading Difficulties in Young Children (Snow, Burns & Griffin, 1998); and,
- Report of the National Reading Panel: Teaching Children to Read (NICHD, 2000).

Despite these expenditures, educators and policy makers have not identified the most effective methods of closing the literacy achievement gap. As the National Assessment of Educational Progress (NAEP) found, forty percent of fourth graders, thirty percent of eighth graders, and twenty-five percent of twelfth graders are presently reading below grade level. (Williams, Reese, Campbell, Mazzeo, & Phillips, 1995). Five years

later, in NAEP's next report, the achievement gap between the most advanced and most at-risk readers had increased so significantly that the economic differences between the halves and have-nots were greater than at any other time in history since 1929 (Neuman (2001). The research study reported in ILE Research Report 1739-004 was undertaken to identify the reasons why all students are not learning to read well, and methods by which this ever-widening literacy achievement gap could be closed.

Closing the Literacy Achievement Gap

Many researchers have hypothesized that one reason for low literacy achievement rests in individuals not having an adequate variety of high quality materials (at home and school) to spark interest and encourage them to exert the effort to learn to read better (e.g., Block & Mangieri, 2002). Other less able readers may not have enough time in the school day to practice reading high quality, extended expository and narrative texts. Other researchers have theorized that today's pupils are not receiving enough instruction in how to read information trade book (Reutzel & DeBoer, 2002).

Before the achievement gap can be closed, other instructional issues must be resolved. For instruction, what is the most effective methods of using trade books in developmental and remedial reading programs? Should teachers allow students to select books for silent reading practice sessions? The idea of allowing children to choose their books, in theory, is motivating because it "honors their individuality and helps them to take ownership of their own learning" (Dutro, 2003, p. 494). However, research indicates that book choosing has created situations in which boys intimidate others, and children become marginalized in subsequent reading classes. Thus, practices that provide students with choice in reading "need to be closely examined, for what looks like choice on the

surface . . .become even more complicated when the social positions of pupils is considered" (Dutro, 2003, p. 495).

Should teachers give instructions before students reading independently? Should these instructions encourage pupils to practice the decoding, vocabulary, comprehension or fluency strategies that they had been taught that day, or is it more advantageous to refrain from providing any direction, allowing readers to engage whatever efferent/affective strategies they select? For example, is it a more effective practice for teachers to ask their students to keep in mind "how to find the main idea" when reading silently for a 20-minute period? Should teachers pair books based on a thematic topic so that the vocabulary learned in one book can be used to increase comprehension when students read a second book on the same subject? How often should teachers vary the content and volumes of books from which students select? How often should students read expository text and narratives? Should two expository texts on the same topic be read back-to-back (Galda & Liang, 2003)? Prior to the study described in this ILE Research Report 1739-004, these questions have not been tested in an empirically based setting.

Another reason for the low reading abilities of some students could be that poorer readers conceptualize reading as a matter of merely decoding to a significantly greater degree than more proficient readers (Block & Mangieri, 2003). Some theorists posit that this misconception could be altered if struggling readers could have more authentic reading experiences infused into the developmental and remedial reading program. This group of educators espouses reading for meaning and the use of children's literature instead of basal readers and worksheets. They argue that these practices have the

potential benefits of teaching literacy skills in the context of reading rather than in isolation, but their claims have not been assessed in a controlled, experimental setting (e.g., Cunningham & Allington, 1999; Goodman, 1986; Wagner, 1989; Weaver, 1998).

On the other hand, advocates of direct instruction believe that children must be given sequential, teacher-guided instruction before all readers can increase their literacy achievement (e.g., Adams, 1995; Chall, 1989; Flesch, 1955, 1981). Still others state that effective reading instruction is balanced (Pressley, 1998; Cowen, 2003). This compromise position seeks to combine explicit and systematic skill instruction with many opportunities for authentic reading and writing (Adams, 1995; Adams & Bruck, 1995; Boyer, 1996; Clay, 2001; Cooper & Kriger, 2001; Pressley, 1998; Ruddell, 1999). Unfortunately, the optimal combination of these approaches in grades 2, 3, 4, and 6 has not been determined, nor has the optimal method been identified of advancing above grade level, on grade level, or at-risk students' literacy. Therefore, researchers need to examine the effects of inviting more authentic reading into today's classrooms.

Further, results from the Progress in International Reading Literacy Study (PISA) documented that motivation to read and amount of time spent reading are important contributors to the gap between good and poor readers" (PISA, 2003). Reading engagement appears to compensate for risk-of-failure characteristics, such as low socio-economic status and male. This study concluded that every effort should be made to provide all students, especially adolescent boys, with opportunities to read books that model advanced language schemes so that text can "enlist their active participation, capture their imaginations, and provide them tools for controlling their own academic destinies" (PISA, 2002, p. 17). Interest is mounting in examining other gender-based

issues that could explain causes for some students' low performances in literacy tasks (Blackburn, 2003; Dutro, 2003).

In addition, students report that they are not encouraged to "read a great deal", need more adults to model how reading can provide "great pleasure" and that deciding to read is choosing "to do something that is fun" (Block & Mangieri, 2003). Similarly, many researchers who study comprehension processing are asking for increased study of instructional methods that encourage students to become more strategic readers, and how then can become self-regulated readers. Perhaps if that emphasis on self-regulation were heightened, there would be more automatic transfer of mental comprehension processes to novel texts. Yes, we sometimes see evidence of it (Bogner, Raphael, & Pressley, 2002), but much more often, we have witnessed students carrying out processes only when prompted by the teacher to do so (Block, Gambrell & Pressley, 2003; Block & Pressley, 2002).

Another instructional challenge in the 21st century classroom is that children read many more stories than expository texts, yet the world demands that readers be able to deal with informational texts that provide the vast amount of new information and ideas entering the marketplace daily. Moreover, while 92% of U.S. fourth-graders report reading for information at least once a month (a higher percentage than those who report reading either literacy fiction, 79%, or comics 43%) overall U.S. students ranked 13th on ability to comprehend informational texts (PIRLS, 2003). We need to explore new methods of increasing students' abilities to comprehend expository text.

Finally, another explanation that is posited for some students' inadequate reading skills is that they have to read much more and faster than any other prior generation. The

information is also being presented to them in both traditional media (e.g., books) and recently invented media (e.g., the Internet). The barrage of messages in the Internet alone, for example, demands more advanced reading abilities than ever before. For instance, Internet texts are not vetted nearly as carefully as traditional print. Hence, readers must learn to verify, and to apply better discernment skills to recognize what needs to be book marked later (e.g., with post-it notes, electronic and otherwise), for much information needs to be retrievable later, when it is needed, rather than read now.

In summary, the repertoire of comprehension processes being taught to students must expand as the volume of text types and processing demands increases. Much research needs to be done to invent even more effective instructional approaches to assist students to effectively comprehend our ever-increasing variety of textual formats, to overcome the ever-increasing achievement gap, and to assist all students' to reach their highest reading capabilities.

Effect Of More Reading On Reading Ability

Another issue that the research reported in this document was designed to examine was the effect of more reading on reading ability. Students who reported reading more pages daily, either in-school or at-home, as well as students who reported they were asked to write about their reading, were higher achievers than their peers. To cite a specific example, the highest achievers in 5th grade read up to 200 times as many minutes per day than did the lowest achievers (Anderson, Wilson & Fielding, 1988). Fifth grade readers who score at the ninetieth percentile on standardized tests read approximately 200 times more text per year than peers who score at the tenth percentile (California Department of Education, 1996).

Similarly, students who reported reading for fun, discussing the books they studied with families, or talking about reading with caregivers had higher reading achievement than peers who did not engaged in such activities (see Block, Gambrell, & Pressley, 2003 for a synopsis of these studies). Moreover, there is a positive relationship between the amount of voluntary reading and gains on standardized reading achievement tests (Pearson, 1993). However, if teachers mandate that students read silently for 20 minutes a day, will it increase their reading? Moreover, is this instructional method more effective in developing vocabulary, comprehension, fluency, and positive attitudes toward reading than spending an equal amount of time in reading from basal readers or workbooks?

While data suggests that students who "interact daily with print, read what others have written, and write to others regularly come to value reading as tools for leaning, enjoyment, and personal insight" (Pearson, 1993, p. 509), can the same results occur if students who do not interact daily with print have extra time during the school day to read more text. In like manner, students who read more demonstrate (a) better reading fluency (Binkley, 1989), (b) greater ability to monitor their own reading (Pinnell, 1989), and (c) greater inclination to read independently (Ingham, 1982). However, are students who read more merely the better readers among their peers? Can we use trade books more effectively to entice less able readers to read more, and ultimately become better readers?

In other words, abundant reading is a common activity among good readers and goes hand in hand with reading achievement. High levels of reading achievement are associated with large amounts of voluntary reading and this positive relationship has been demonstrated on standardized tests (Pearson and Fielding, 1991; Anderson, Wilson and

Fielding, 1988)." However, if we mandate increased reading of trade books everyday for every student, will the effects lead to higher achievement for all students?

Effect of Extended Reading On Vocabulary Development

Research also indicates that vocabulary development can be directly related to how much students read, and to direct teaching in meaningful contexts (Beck & McKeown, 1991; Beck, McKeown, & Kucan, 2002; Scott & Nagy, 1997; Stanovich, 1993-94). Research describes a significant connection between comprehension and vocabulary: vocabulary knowledge helps students understand what they read and reading comprehension is enhanced when students understand the meanings of words. Reading comprehension and vocabulary mutually benefit each other and this relationship is important in reading development (Rupley, Logan, and Nichols, 1998)."

Even a moderate amount of daily reading can have a positive impact on vocabulary development and students at all levels can learn new words as a by-product of doing more reading (Anderson and Nagy, 1993)—just fifteen minutes of independent reading a day exposes students to over a million words per year. Students who read one million words will encounter almost 20,000 new words. The 5 percent of those words that become part of the student's vocabulary illustrate how extensive reading qualitatively and quantitatively enhances a student's word power (Rouk, nd). Based on these data, it can reasonably be concluded that a significant amount of reading needs to be accomplished in order to learn a substantial number of new words (Cunningham and Stanovich, 1998).

However, increased opportunities to read does not eliminate the role for direct instruction that taps into the reader's experience, makes connections between known and

unknown words, and encourages students to apply their new word knowledge in a variety of situations (Rupley, Logan, and Nichols, 1998). Typically, direct instruction may contribute hundreds of words to a student's word bank. The combination and balance of direct instruction and wide reading may help maximize students' opportunities to increase their vocabularies, however, research has not been undertaken to determine the best mix of these methods to increase all students' vocabulary development.

Fukkink (2002) explores the effect of instruction on deriving word meaning from written context and incidental word learning in a randomized, experimental program based on the direct instruction of a strategy. His experimental program produced neither a significant improvement in the skill of deriving word meaning from context nor an increase in the incidental word learning rate of the fourth grade, below-average readers. Fukkink claims that an effect of instruction on the skill of deriving word meaning from context and incidental word learning has previously been a challenge to achieve (Fukkink, 2002). Thus, one of the purposes of the research reported in this document was to examine the most effective methods of building students' vocabulary.

This need is exacerbated by other ongoing issues in the field, in particular (a) the increased use of socially mediated instruction (the reason for the opposing contentions that trade books may or may not work well for less able readers), (b) the need to teach multiple strategies so that students can improve their comprehension, and (c) controversies in how important it is to teach specific strategies explicitly versus providing flexible frameworks to merely dialogue about texts read (Gersten, et al., 2001). Love and Hamston (2001) presume that the discourses of critical literacy have yet to find their way into educational practice at either the school level or the home level. They also posit that

"a question remains about where and how critical such a practice is taught, valued, and encouraged" (Love and Hamston, 2001, p 345).

Scott and Nagy (1997) raise other important questions about the way new vocabulary is taught. They concluded their review of prior research by stating: "it seems inappropriate to ask students to look up new words in the dictionary without additional support or scaffolding, particularly if they have not been taught how to read definitions" (Scott & Nagy, 1997, p. 114). Based on their findings, other methods of teaching vocabulary need to be tested empirically. The research reported in this document included other ways for students to learn vocabulary words without having to look up definitions.

Effects of Various Time-On-Task Activities Upon Students' Higher Level Comprehension Abilities

Taxonomies of comprehension abilities often categorize strategies as occurring higher or lower in the language processing chain. Such a system can be useful for identifying the earliest point of reading difficulty. This model has been used to explain the finding that, for certain populations, limited word reading ability and vocabulary knowledge decrease reading comprehension. However, we should not dismiss the influence of higher-level processing skills in this chain. Of interest in the current study was the investigation of whether lower-level processes wholly account for individual differences in text comprehension, or whether higher-level processing and knowledge variables could play an independent role.

Past researchers have demonstrated that the determination of comprehension level and the predictive ability of comprehenders are not fully explained by lower-level skills. Inference making and other comprehension abilities are necessary once the contribution

made by lower-level skills has been taken into account (Blok, Oostdam, Otter & Overmaat, 2002; Sadoski & Paivio, 2001). As early as 1967, Chall (1967) reported that lower socioeconomic students need to read challenging literature to raise their reading comprehension. Chall (1967) also found that children need to practice newly introduced reading skills by using texts that are at their independent reading level.

The National Reading Panel (NICHD, 2000) found that reading comprehension improvement was greatly attributable to vocabulary and fluency improvement. Block and Mangeri's (2002) study on recreational reading shows students who spent more time in recreational reading activities (a) scored higher on comprehension tests in grades 2, 4, 8, and 12; (b) had significantly higher grade point averages; and (c) developed more sophisticated writing styles than peers who did not engage in recreational reading. A purpose of the research reported in this document was to identify the effects of trade book, workbook, thematic, and basal reading on students' reading comprehension.

Fluency

Recently, the National Assessment of Educational Progress reported 44% of our nation's fourth graders lack the fluency necessary to comprehend grade-level text. Similarly, Kuhn and Stahl's (2003) review of fluency research concluded that although assisted reading, repeated reading, or approaches that integrated a number of activities into a classroom lesson were effective, it is not clear why they were. Specifically, it is not clear whether their effects arose due to any particular instructional activities, or merely through the general mechanism of increasing the volume of children's reading. Thus, fluency instruction may work only by increasing the amount of reading children do

relative to the amount of time spent in teacher-directed, traditional instruction. This hypothesis needs to be examined empirically.

Kuhn and Stahl's (2003) work further found that "some have argued that having children read easy text improves fluency (e.g., Clay, 1993), but it seems that the most successful approaches involved children reading instructional-level text or even text at the frustration level with strong support (see Stahl et al., 1997)" (Kuhn and Stahl, 2003, p. 118). Mathes and Fuchs (1993), however, used both relatively easy and relatively difficult texts and found no [significant] effect for text difficulty. More directed work needs to be done to assess the effects of the relative difficulty of text on increasing fluency.

Next, both practice and support are essential to the development of fluent reading and can be provided either through repeated reading or modeling. Whether this provision comes through the use of taped narrations, another individual, or repetition seems to be less crucial a matter than the fact that it exists. Such support seems to allow learners to work within their zone of proximal development (Vygotsky, 1978), offering the scaffolding that allows learners to successfully move beyond the point at which they are able to work independently (Kuhn & Stahl, 2003). Which type of support produces maximum reading growth had not been tested prior to the research reported in this document.

Motivation

Motivation is essential for maintaining students' sustained attention on reading. Researchers have posited that children need a variety of books made available to them in the classroom and library (Gambrell, 1996). This contention has not been tested

empirically. Other instructional issues need to be examined as well, such as how often teachers need to provide variety of books from which students are to self-select? How often should teachers or librarians advise/restrict students" picks among books?

Self-selection has demonstrated to impact students' motivation because it helps to increase reading interest value (Eccles et al., 1983; Wigfield, 1994; Wigfield and Eccles, 1992). Another factor that affects motivation is attainment value (Guthrie and Wigfield, 1997; Guthrie, 2003). Students will not recognize reading as an important aspect of their life unless success in reading is attainable. Matching students with the appropriate level of challenge—not to easy or not to hard—has been offered as one mechanism for successful reading experiences (Gambrell, Palmer, and Codling, 1993; Gambrell, Almasi, Xie and Heland, 1995; Morrow, 1996). However, does matching or self-selection result in students' greatest increases in motivation to read, and learn how to read better.

Purpose and Hypothesis of This Study

The purpose of this research study was to examine the effects of several methods of reading instruction upon the literacy achievement of high, average, and less able readers. The need for these data has high significance in light of No Child Left Behind Legislation, and the ever-increasing number of school districts that are adding 20 additional minutes of reading instruction to their basic reading programs in the past three years. Findings can also assist teachers to select the most advantageous methods of increasing students' literacy achievement, regardless of whether those individuals are reading above, on, or below their grade level placements. The specific hypotheses addressed in this study follow.

Hypothesis 1: Should above, on, and below grade level readers be allocated more time to (a) complete basal reading activities; (b) engaged in sustained silent reading of self-selected books; (c) writing workbook exercises designed to build vocabulary, comprehension, and fluency; or, (d) read from two consecutive fictional or non-fictional trade books on a central theme?

Hypothesis 2: How can we plan the best content for early finishers, on grade level, urban, below grade level, Hispanic, and other minority language background students to engage with trade books in school tutoring, in school interventions, after school tutoring, summer school, and after school interventions, especially as No Child Left Behind legislation is leading many schools to ask students to participate in special instructional programs after school if they do not pass benchmarks early in the school year and in preparation for statewide, high-stake-literacy tests?

Hypothesis 3: What are the effects on vocabulary development, main idea identity, comprehension, recall of details, higher level thinking, fluency, attitudes toward reading, and overall reading achievement when 20 minute interventions occur for two-thirds of one school year?

Hypothesis 4: With the increased emphasis during school hours to pass competency based tests, the increased competition for students' attention after school hours, and the decrease in time to read books at school and home interfere with students' reading power, can an added, required 20 minutes of reading time added to the school curriculum assist educators to close the literacy achievement gap?

Hypothesis 5: If time on task makes a difference in students' literacy achievement, which types of instructional methods implemented for 20 minutes a day

significantly increase students' vocabulary, main idea identity, higher level comprehension abilities, recall of details, fluency, positive attitudes toward reading, and overall standardized test scores?

Procedures

The study occurred in four school districts in the Southwestern United States. Before the study began, in each elementary and middle school, second, third, fourth, and sixth grade subjects were randomly assigned to experimental or control groups. Subjects attended (1) a school in a high socio-economic suburban neighborhood; (2) a school in a bedroom community comprised of middle socio-economic housing developments; (3) an inner-city, low socio-economic school; or, (4) a small-town school where many parents were unemployed or lived on limited incomes. These schools were chosen because they represented the spectrum of public school settings that exist in many English-speaking nations. Every school principal randomly assigned six teachers in each school---three became experimental and three educators became control teachers. Sixth grade teachers were departmentalized so that every control and experimental teacher lead three reading classrooms each. In total, thirty classrooms were involved in this study.

The study involved 146 second graders, 123 third graders, 151 fourth graders, and 318 sixth graders. Of that group, we had 438 experimental and 300 control subjects who completed the entire study. Among this population were 168 Hispanic students, 345 Caucasian students, 180 African American students, 28 Asian students, and 17 students who represented other nationalities.

Students were randomly assigned to experimental or control conditions before the study began. All subjects received pretests and posttests.

The study began on September 23, 2002 and continued until January 24, 2003, one-half of a school year. During 80 days of instruction, all control teachers implemented the basal reading curriculum that had been adopted by that school district, following teacher manual guidelines, for 90 minutes. All experimental teachers implemented the same basal reading curriculum for 70 minutes, and an experimental treatment for 20 minutes daily. For the twenty minutes of experimental treatments, subjects received one of four treatments for four weeks until all students had received all treatments. During this same twenty-minute period every day, control subjects in each school continued to engage in standard basal reading instruction. Three different basal reading programs were the curriculum for control subjects in this study.

Experimental treatments were rotated to control for the time variable. At every grade level, one or more experimental groups received one of the treatments on a rotational basis, so that at every grade level during every month of the study, subjects at each grade level were engaged in one of the following treatments.

The first treatment employed students' silent seatwork with one of five supplemental workbooks that were published by a company that was not the same as the publisher of the basal reading program that was followed in the district's standard reading program. Every workbook had been published within the last few years and was designed as a general, all-encompassing supplemental workbook designed to increase students' vocabulary, fluency, and comprehension. The workbook contained short stories written at the grade and interest level of experimental subjects. This experimental treatment was chosen because many school districts are turning to this curriculum to assist students who need additional reading instruction.

The second treatment was a sustained silent reading period (SSR) in which teachers did not provide any instruction or assistance. In this treatment, students selected a book *that they wanted to read* for 20 minutes of uninterrupted sustained silent reading. This treatment was selected because this instructional method has been recommended for 40 years, but research to document its effectiveness has been inconclusive. The third treatment was a modified sustained silent reading instructional approach (SSR with instruction). This adaptation was based on the research finding that SSR may have increased value if students have a purpose to share about books read (Au, 2002). Students chose a book that they wanted to read. Before reading that book, however, experimental teachers gave the direction that as students read the book, they were to keep the objective they had just been taught in their basal reading program on their mind and to practice it while they read. Students in both sustained silent reading groups completed the same story (book) test used in all treatments when they finished reading a book.

The fourth treatment was an intervention in which students read two nonfiction books on the same subject back to back. Students were to select the topic of their choice with 15-20 topics being available every month, depending upon subject's grade level with more topics being available to younger subjects because their trade books were shorter and could be read more rapidly. After completing a book, subjects completed a book test that contained the same four questions described above that were designed as work samples to assess how much they remembered from the experience of reading two, high quality nonfictional trade books on the same topic consecutively. The reason this treatment was chosen because many school districts are desiring additional time for students to read non-fictional materials, because more than 60% of the passages on high-

stakes tests are non-fictional selections. Students were required to read two books on the same topic back-to-back based on findings from prior research that such in-depth reading strengthens students' reading abilities.

The last treatment was to correlate the topics read in nonfiction books with fiction books on the same subject. Students who had just completed the reading of several different topics of nonfiction then read about the same topic in fiction books. Students were to read two fiction books on the same subject and complete book tests to record how much they had learned from these books. This treatment was selected because many above grade level readers enjoy and profit from reading more than one book by the same author or related to the same subject matter. This study was designed to examine if the same benefits would occur for average and less able readers.

After every story (for the workbook treatment) and every trade book (for the SSR, SSR with instructions, Non-fiction, and Fiction) was read, students took a workbook story or boot test, which included the following questions and became one of the assessments of the effects of each treatment:

1. Write the **NEW** words that you learned from the story (book in treatments 2-5) that you just read (Immediate Recall of New Vocabulary Words Measure).
2. What was the **MOST** important thing that you learned from this story (book)? (Immediate Recall of Main Ideas Measure)
3. List three things that you learned about the topic (Immediate Recall of Details Measure).

4. What did this book help you think about? (Immediate Higher Level Comprehension Measure)

5. I read this story (book)_____ (Circle One). (Students Self-report of Fluency Rate)

   a. faster than other stories(books) I read in class

   b. just like I read my other stories (books) in class

   c. slowly so that I could learn a lot, and I liked the story (book)

   d. slowly so I could learn new words

   e. slowly because I did not like the story (book)

6. Rate this story (book). Circle the number of stars that tells your answer. (Students Self-report of Attitude toward Selection Read)

   * = not good

   ** = okay

   *** = good

   **** = very good

   ***** = great

Experimental subjects averaged 10.2 workbook story or book tests shown in which were administered one per week for the 80 school days in which the treatments occurred for each student. All tests were graded and scores for the number of vocabulary words, details, main idea, higher level thinking, recognition, attitude, and fluency were entered into the data base, resulting in 4,480 experimental subjects' data entries.

Teachers in the experimental groups kept a log for 80 days. They recorded the exact time that students participated in the experimental treatment every day. Each

treatment continued for 20 days, often taking a full 5-6 week grading period to account for school-and district-wide interferences with this study. Students maintained a book log in which they listed the title of the book they read on a specific day as well as the number of pages completed that day. Students were held accountable to document the number of pages read every day, and book logs were collected at the end of the study.

Prior to beginning the study all subjects received a pretest. The pretest was a book test that contained the six immediate recall questions that would be used in every treatment. These questions were to determine children's ability to (1) learn vocabulary, (2) identify main ideas, (3) remember details, (4) think on higher levels, (5) increase their fluency, and (6) improve their attitude towards reading as a result of one day's reading experience. The pretest was based on the content that the students had experienced from the standard basal reading curriculum adopted in that school district, through a lesson that the teacher normally conducted from their traditional reading program. At the end of the study, control and experimental subjects completed a post story (book) test based on the last story (book) that they had read. Thus, the experimental subjects' post book test was based on the last book they read for sustained silent reading, non-fictional, or fictional treatment groups, or the last workbook story if they were ending the study as a workbook treatment group. The control subjects' post book test was based on the last basal reading activity completed by the control teacher that day.

In addition to this story (book) posttest, control and experimental subjects completed a fluency test in which each student read a book of choice for two minutes. Then, subjects counted how many words they read in that two-minute period. (Researchers later computed the average rate for one minute's reading.) Next, students

closed their books and wrote a retelling of everything they remembered from that two-minute reading experience. This retelling became the recall post-test measure. Last, subjects wrote new vocabulary words that they remembered from this timed-reading selection.

Another set of pretest and posttest measures were obtained. Prior to beginning the student, every teacher submitted a list of every control and experimental subjects' last year's standardized reading achievement scores. At the end of the study, teachers reported the assessment data that they had received from their districts' high-stakes or standardized reading achievement test that had been administered as a regularly scheduled component of their school district's reading program. These date were used to determine if any student had increased or decreased in overall reading ability by mid-school year.

In addition, the Stanford Nine Achievement Test's Vocabulary, Comprehension, and Spelling Subtests were administered within three weeks of study's end.

Data Analysis

Data from each of the assessment measures described above were analyzed statistically through multivariate analyses of variance, chi-square, and covariate analyses of analyses. An ANOVA was conducted between experimental and control subjects on pretest measures. There were no significant differences between experimental and control subjects in their pre-study overall scores on vocabulary development $F(4, 518)= 8.143$, $p=.0001$; and, main ideas $F(4,518)= 2.798$, $p=.090$. There were no significant differences between experimental and control subjects in their prestudy overall scores on reading levels $F(5,507)=2.274$, $p=.083$, higher level comprehension skills $F(1, 507)=.069$,

p=.842, fluency F(1, 2094)=9.996, p=.156, ability to remember details F(1,507)=1.414, p=.235, or attitudes toward reading F(1,2094)=189.59, p=.083.

An ANOVA was conducted on posttest measures between experiment and control subjects. Experimental subjects significantly outperformed control subjects on every post-test measure. Experimental subjects scored higher on vocabulary F(5, 3107)=9.875, p<.0001, comprehension F(5, 3107)=13.596, p<.0001, and spelling subtests of the Stanford Nine Achievement Test F(5, 3107)=2.612, p=.023, post-study reading achievement levels F(1,545)= 9.625, p= .002, vocabulary words learned from reading F(5,5806)=101.313, p= .0001, with an effect size of .492; details recalled F(5, 1104) = 5.224, p < .0001, with an effect size of .777; main ideas remembered F(5,5806)= 77.085, p= .0001, with and effect size of .670; higher level comprehension F(5,1104)= 13.163, p <.0001; attitudes toward reading F(5,1104)= 13.573, p<.0001, and fluency, measured by number of words read in an averaged one-minute's reading F(1,455) =20.356, p = .0001, number of ideas recalled from a two-minute timed test F(1,455), 1.336, p= .248; and, number of new vocabulary words learned during a two-minute timed reading F(1.455) = .944, p = .332.

Once significant differences between experimental and control subjects was found, scores obtained by each experimental subject were analyzed to determine which treatment resulted in largest gains for each student.

Results

Results from these statistical analyses, as they speak to the five hypotheses of this research study, follow.

The effects of experimental and control treatments on overall reading achievement, as well as their strength in closing the literacy achievement gap, follow. At the end of the study, control groups were reading slightly below grade level (2.0 indicated on-grade level reading) at 1.90 and experimental groups were reading slightly above grade level (at 2.15). These scores indicate that control teachers' assessments of the amount of growth in reading ability from the beginning of the year (when teachers ranked students as above, on or below grade level and re-ranked them at the end of the study in the same manner) was below the average amount of growth expected (2.0), and the experimental teachers' assessments of the amount of growth in reading ability was above the average amount of growth expected.

Without teacher monitoring, SSR and the reading of self-selected materials were too easy for less able readers above grade two. At the end of the study, in total, however, the number of students who increased in overall reading ability, the treatment that had the highest percent of students to increase was the thematic reading of two non-fictional books back-to-back, which resulted in a 10% gain in overall reading ability for the total population. Spending 20 additional minutes working in the basal reader or engaging in self-selected, teacher-monitored sustained, silent reading were the second most powerful method for increasing students' overall reading achievement, resulting in a 7.5% average gain in overall reading ability. Teacher-assigned reading of two fiction books in a thematic approach ranked third in effectiveness of increasing students' overall reading achievement, resulting in a 6% gain. Asking students to reading silently from books of their choice but instructing them to practice only the strategy that was just taught was ineffective in producing gains in overall reading, resulting in a –6% gain. These

differences were statistically significant $F(5, 4850) = 5.116$, $p < .0001$. Asking students to work 20 minutes in recently constructed supplemental workbook programs that are designed to increase students' vocabulary, comprehension, fluency, and positive attitudes by reading short stories and answering questions about them ranked fourth in effectiveness did not resulting in gain in overall reading achievement, as all other experimental and the control group outperformed workbook treatment groups ($p < .003$) in overall growth in reading ability.

Using the Stanford Achievement Test scores as a measure of overall achievement, the post hoc analyses using the Bonferroni procedure indicated that the ability to identify details increased significantly with experimental groups outperforming control groups. To identify which experimental group outperformed other treatments, we conducted a post hoc Bonferroni test. SSR with instructions retained significantly less details than SSR, teacher-chosen fiction and non-fiction, with SSR with instruction having $X= 1.59$, SSR's $X=1.99$, non-fiction's $X = 1.91$, and teacher-chosen fiction X's = 1.94 details retained ($p= .027$ when compared to SSR,, the reading of two fiction books chosen by teacher, $p = .007$; and, non-fiction, $p = .028$).

Ability to answer higher level comprehension questions increased significantly with experimental groups outperforming control groups. To identify which experimental group outperformed other treatments, we conducted a post hoc Bonferroni test. All treatments except SSR scored significantly higher than workbooks ($X=.95$ for control; $X= .89$ for non-fiction; $X = .83$ for teacher-chosen fiction; and, $X= .75$ for SSR with instruction). Non-fiction also scored significantly higher than either SSR groups.

Attitudes increased significantly, with experimental groups outperforming control groups ($p < .01$).

To identify which experimental group outperformed other treatments in vocabulary development, comprehension, fluency, and attitude, we conducted post hoc Bonferroni tests, which resulted in the following data.

- There were no significant differences between control and experimental subjects on all pretest measures.
- Experimental group comparisons to control groups revealed that after one-half year of treatment experimental groups significantly outperformed controls on (a) the Stanford Nine Comprehension and Spelling Subtests ($p = .0001$; and $p = .001$ respectively), (b) three fluency measures, (c) attitude measures, (d) immediate recall assessments of vocabulary, main idea, detail retention, and higher level comprehension, as well as (e) mid-year reading ability, as measured by high stakes or standardized reading achievement tests. Data indicate that 20 minutes of daily trade book or short story reading from a program that was distinct from the district's adopted basal reading program significantly increases students' reading abilities as compared to spending an additional 20 minutes working toward basal reading program objectives. Implications for practice are that twenty minutes of daily trade book or short story reading significantly increase students' reading achievement. An additional 20 minutes of trade book reading holds the potential to increase students' reading abilities when used as a tutorial, after school, remedial, and in-class reading periods. Such achievement gains can be expected to occur after only one-half year of reading instruction, a finding that holds

potential as an instructional intervention to improve reading skills of students who need to increase their reading abilities before a year's end.

- Experimental groups significantly out-preformed control groups, indicating that an additional twenty minutes of reading experience significantly increases students' positive reading attitudes and their speed of reading.
- When significant differences were found between experimental and control subjects, analyses were conducted to compare which experimental treatment(s) significantly increased vocabulary, main idea identification, detail retention, higher level comprehension abilities, attitudes toward reading, and fluency. Data concerning the differences between students' pre and post immediate vocabulary, main idea, detail, high level comprehension, attitude, and fluency assessments were analyzed. Experimental groups outperformed the control groups in all areas expect vocabulary development, in which no group performed significantly better.
- Experimental groups increased significantly above control groups in midyear overall reading ability increases, fluency rates, the number of words they could recall and the number of vocabulary words they could remember. Experimental students ranked their level of fluency and their attitude towards reading increased significantly above control subjects from beginning to the end of the study.
- In the area of vocabulary development, results were grade sensitive. Second graders learned significantly more vocabulary words through SSR but the least through SSR with instructions. Third graders learned significantly more through SSR with instructions than from other treatments. Fourth as well as sixth graders increased their vocabulary significantly through the reading of two non-fiction

trade books on the same topic back to back. The implications of these data are that the effects of one-half year of reading instructional methods are grade sensitive, influenced by students' developmental reading needs. Post hoc analyses of the book reading logs that experimental subjects kept identified that students in grades two and three tended to select significantly more appropriately leveled books that had the capacity to increase their vocabulary knowledge, whereas fourth and sixth graders learned least vocabulary through SSR and SSR with instruction because they do not select books that were challenging enough to expand their vocabulary development. However, SSR, SSR with instruction, Non-fiction and Fiction treatment groups (all types of treatments involving trade book reading) were significantly greater than the control group and the use of workbooks for an extended period of time on immediate vocabulary learning.

- When looking at students' ability to recognize and retain main ideas, students at all grade levels identified significantly more main ideas when they read non-fiction trade books back to back than with any other instructional intervention or control treatment.
- When analyzing reading instructional methods' influence on students' abilities to remember details, data indicate that treatments are grade specific. Second graders retained significantly more details when engaged in SSR than in other treatments, and the use of workbooks was the least effective method and no more effective than continuing in the standard basal reading curriculum for an additional 20 minutes. Third, fourth and sixth graders retained significantly more details when they read two non-fiction trade books back to back. The least effective for third

graders was workbooks; fourth graders experienced least growth through SSR with instructions. Sixth graders had all other treatments than reading two non-fiction trade books back to back to fall beneath the mean for experimental groups, indicating that there were no significant differences between the effects of SSR, SSR with instructions, workbooks or treatments on detail retention. For the total group, the least effective treatments were SSR with instruction and workbooks, in which students remembered an average of 1.89 details per 20 minute reading period from workbooks, and an average of 1.63 details when engaged in 20 minutes of SSR with instructions to pay attention to other strategies other than attending to details (significantly lower than other treatments). The highest number of details retained from reading occurred in the non-fictional group, 2.19, the next highest occurred in SSR, 2.16, and in the fiction group, 2.07. The differences between these three treatment groups, as related to detail analysis retention of details, are nonsignificant. The differences between the number of details remembered in all treatments (except for the treatment of SSR with instructions) were significantly greater than SSR with instructions, which suggests that students do attend to the instructions their teachers give as to what is important for an upcoming reading period. If those instructions were different from looking for details, which the majority of the time they were in this study, students' retention of the number of details remembered at every grade level decreased significantly. Data also suggest that future meta-analyses of research studies should be conducted by individual grade levels of subjects, to control for grade level sensitivities of individual instructional methods.

- To assess students' ability to think on higher levels, the most effective treatment for all grade levels was the use of nonfiction books. This treatment was significantly greater than all other treatments. There were no significant differences between SSR, SSR with instruction, and reading two fictional books in their ability to assist students to think on high levels. However, the mean scores of all these treatments were significantly higher than the workbook group.
- When data from treatment groups were analyzed by the effects upon students who represented a variety of ethnic groups, no significant treatment by ethnicity interactions occurred for the six immediate recall assessments of vocabulary, main idea, details, higher level comprehension, attitudes and rate; post-study attitudes, post-study fluency levels, or treatment by ethnicity interactions on the Stanford Nine Comprehension Vocabulary, Comprehension or Spelling Subtests.
- If school districts have to select one treatment, data were analyzed as to the treatment that produced most significant gains on Stanford Nine subtests at each grade level. Significant differences for experimental treatment effects occurred at every grade level for Stanford Nine Vocabulary, Comprehension, and Spelling Subtest Scores ($p = .001$, $p = .001$, and $p = .011$ respectively). When analyses of variance were conducted to compare treatment effects between treatments, three treatments accounted for these differences. SSR (grades 2 and 4), Non-fiction (Grades 3 & 4), Fiction (Grade 3), and workbooks (Grade 6) resulted in significantly higher long-term transfer of vocabulary knowledge than did other treatments. As a total group of all grade levels together, workbooks were

significantly less able to increase students' vocabulary than SSR, and non-fiction book reading (p= .0001).

- The experimental treatments that produced significantly higher gains on the Stanford Comprehension Subtest were SSR for Grade 2, Non-fiction for Grades 3 and 6, with the cell sizes being too small at Grade 4 to conduct an accurate analyses of variance. The cell sizes were so small at Grade 4 because of an extended ice and sleet storm in which the three schools in which testing was to have occurred were closed for several days and could not be rescheduled the testing due to the need for all schools to administer previously scheduled district-wide tests when students returned to school. When fourth grade subjects were included in the total sample, as a group, all subjects were least affected in their comprehension growth by workbooks and two fiction books back to back (p = .000l and p = .000l respectively), and significantly less than SSR and two non-fiction reading treatments (p = .0001 and p = .0001). SSR was significantly stronger than reading two fiction books (p = .012). Non-fiction treatments were significantly more powerful than either the reading of two fiction books back to back (p = .027) or using workbooks (p = .001) for the total group.
- While the total subjects' grade by Stanford Nine Spelling Test resulted in a statically significant interaction (p = .004), post hoc analyses revealed that no experimental treatment significantly outperformed any other single treatment at any grade level, except that all significantly outperformed control groups at every grade level. When Stanford Spelling Subtest was the measure being analyzed.

- Because many school districts seek research-based data upon which to base their selecting of the best treatments for less able, average, and above average readers, data from the Stanford Nine Achievement Test was analyzed as to be most significant treatment effects for above, on, and below grade level readers. The treatment by grade by ability interaction was significant for Stanford Vocabulary Subtest scores (p =.001), Stanford Comprehension Subtest Scores (.0001), and Spelling Subtest Scores (p = .011). Overall, for all grade by ability interactions, SSR (mean = 25.8% missed) and non-fiction (27.5% missed) created significant gains in long-term vocabulary growth on Stanford Vocabulary growth above fictional book treatment (35%), control (35.1%), SSR with instruction (35.8% missed) and workbooks (36.6% missed. Similarly, for the total treatment by grade by ability interaction, the best treatments (in rank order) for long term comprehension growth, as measured by scores on the Stanford Comprehension Subtest was SSR (30.7% missed, p = .0001), non-fiction reading (33.2% missed), workbooks (38.7% missed), fiction (39.5% missed, SSR with instructions 41% missed, and control (48.4% missed). All three ability levels were significantly different on long term spelling growth as measured by scores on the Stanford Spelling Subtest (p = .011). However, the reason for the statistical significance in the treatment by ability interactions was because workbooks and SSR treatments reduced on-grade level readers' abilities in spelling to levels that were significantly below the abilities of students whom read below grade level. On grade level readers in workbook and SSR treatment periods missed significantly more items on the spelling subtest. Specifically, students in workbook treatments

who read on-grade level missed 47.5%; below grade level missed 39.6%; and, above grade level missed 32.8%. Students in SSR treatments who read on-grade level missed 42.3; below grade level readers missed 41.6; and, above grade level readers missed 31.8. As a result, when means for all ability levels were analyzed no significant differences resulted when ability level was the covariate. Implications for this study are that the data from this study indicate that the reason why past research studies have demonstrated to produced positive effects of (a) "practice reading" and having less able readers read alone, silently for 15-20 minutes, and (b) silent seatwork with workbooks for this population could have been produced from the significant decrease in average readers' abilities in these instructional approaches rather than the significantly positive growths that were experienced by less able readers. Perhaps without the significant decline of average and lack of substantial gain in ability by above average grade levels, workbooks or SSR may not have demonstrated such positive results for less able readers. This is the statistical explanation for these two treatments' effects on the 618 less able readers in this study.

- Least able readers benefited significantly more on long-term vocabulary growth (when scores on Stanford Nine Vocabulary are the measure analyzed) through 20 minutes of SSR (37.9% missed), than reading of two non-fiction (46.3%), fiction books back to back (50.4%), workbooks (53.1% missed), control conditions (51.2%), or SSR with instruction to focus on the day's objective (62.9% missed). For on grade level readers, SSR (32.6%) and reading of two non-fiction books back to back (35.9% missed) were significantly better at increasing vocabulary

development than the reading of two fiction trade books back to back (40.6% missed), SSR with instructions (45.5%) and workbooks (45.5%). For above grade level readers, SSR (21.6%) was significantly greater than workbooks (24.9%), non-fiction trade books (25.7%); SSR with instructions (27.2%) or fiction trade books (31.2%).

- On the Stanford Comprehension Subtest, less able readers profited most by SSR (43.2% missed), followed by non-fiction (50.6% missed), workbooks (51.2% missed), SSR with instructions (57.3%) and the reading of two fiction books back to back (61.4%). Non-fictional trade book reading was significantly better at increasing scores for less able readers on the Stanford Comprehension Subtest than the reading of two fiction books back to back for less able readers. On grade level readers benefited equally and significantly from SSR (34.4% missed) and the reading of two non-fiction books (34.4% missed). Above grade level readers profited significantly and equally from the workbooks (28.9%) and reading two non-fictional books back to back (29.8%), SSR (30.6% missed), reading two fictional books back to back (31.2%), and SSR with instruction (34.3% missed). above other experimental an control treatments.
- There were no significant interactions for grade by ability level by treatment effects on the Stanford Spelling Subtest.
- At second-grade, the reading of short stories in workbooks was significantly better at increasing the number of words that students could read in one minute. Third-graders benefited significantly by SSR and the reading of two non-fiction books back to back. Fourth and sixth graders profited significantly by all

experimental treatments and control conditions above SSR with instructions. However, when all students at every ability level and grade level ranked the reading of two fiction books significantly higher than other experimental and control treatments in its ability to read faster. These data coupled with data as to the lack of the reading of teacher-selected fiction books to build vocabulary, retention of details, and main idea retention indicated that students may scan and skim a second fictional book on the same topic when teachers selected the books and topic to be read. This minimal focus on vocabulary, main ideas, and details was not present in SSR treatments, in which students selected their own books and topics.

- When post attitude scores were analyzed, no significant differences existed between the effects of any treatment except workbooks. Workbook treatment was ranked significantly lower generating positive attitudes toward reading for all ability groups and grade levels ($p = .0001$).
- When data were analyzed according to differences between genders, girls retained significantly more new words from the timed readings at end of study ($p = .00l$). The differences between genders on number of words read and retelling abilities did not differ between girls and boys.
- When mean scores between experimental subjects by grade were analyzed, fourth graders scored significantly higher attitudes toward reading
- When data were analyzed by grade level and ability level, data indicated that students who had increased significantly in their reading ability levels by mid-year, grew significantly more in their abilities to retain details and apply higher

level comprehension abilities and the interaction between experimental treatment was significant for details (p= .00l) and higher level (p= .002).

- Within experimental treatments, the treatment that had the largest number of students to decrease in overall reading ability by midyear was the control and SSR with instructions for a total of 9%, followed by workbook treatment with 4%; 1% for reading of two non-fiction trade books back to back; 1% for the reading of two fiction trade books back to back, 1%, and SSR for 0% decrease.
- Treatments that led to greatest number of students to increase in reading ability by midyear were 17% for control groups; 8% for workbooks; 11% for the reading of two non-fiction trade books back to back; 7% for SSR and 7% for the reading two fiction trade books back to back; and, 3% for SSR with instructions.
- When we subtract the percent of students who decreased in reading ability from the percent who increased, the net gain in midyear reading ability by treatment groups was 10% for the reading of two non fiction trade books, 8% for engagement in extended reading of basal reader assignments; 7% for SSR, 6% for the reading of two fiction trade books back to back; 4% for working in workbooks; and a –6% decrease for SSR with instructions to attend to the objective that was taught that day.

Treatment Effects by Grade Level

Data analyses revealed that many of the significant effects of each treatment were grade specific. The following statistically significant differences occurred between treatments for Grade 2, 3, 4 and 6.

Second Grade

1. SSR, when student booklists are monitored every month for the grade level appropriateness of books read, increased students' vocabulary significantly.
2. The reading of two non-fiction trade books on the same topic back to back significantly increased students' abilities to identify main ideas.
3. SSR, when student booklists are monitored every month for the grade level appropriateness of books read, significantly increased the number of details second graders retained. Workbooks and continuing to be involved in basal reading lesson were the least effective instructional methods of increasing second graders' retention of details.
4. The reading of two non fiction trade books back to back on the same topic significantly increased students higher level thinking, and workbooks were significantly lower than all other treatments.
5. SSR was significantly greater at increasing second graders' scores on the Stanford Vocabulary Subtest (29.3% missed). All other treatments were significantly less able to create vocabulary growth (38.9% missed for non fiction; 40.6% for fiction; 41.5% for workbooks; 43.4% for control; and 45.5% for SSR with instructions).
6. Three treatments were equally effective in increasing students' performance on the Stanford Comprehension Subtest (SSR, 33.7%; reading two fiction trade books back to back, 37.6%; and reading two non-fiction books back to back on the same topic, 37.7%). These were significantly better than workbooks (40.6%; SSR with instructions (47%) or control groups (49.8%).

7. No experimental treatment significantly distinguished itself in its ability to increase students Stanford Spelling subtest but all were significantly better than control treatments.
8. Reading short stories in workbooks significantly increased fluency on a two-minute reading.
9. Second graders ranked the reading of two fictional trade books on the same topic as the treatment that they read faster than in other treatments.
10. Workbooks and the control treatment significantly decreased second graders' positive attitudes toward reading ($p = .001$ and .001 respectively.
11. Second graders scored significantly lower on posttest positive attitudes toward reading than fourth graders.
12. There was no significantly difference between the effects of treatments by gender or ethnicity on any measure except that girls learned significantly more new vocabulary words on a timed reading than boys ($p = .001$).

Third Grade

1. SSR with instructions to attend to the objective studies, when student booklists are monitored each month to check that books read are grade appropriate, significantly increased third graders' immediate recall of vocabulary words.
2. The reading of two non-fiction trade books on the same topic back to back significantly increased third graders' abilities to identify main ideas.
3. SSR, when student booklists are monitored every month for the grade level appropriateness of books read, significantly increased the number of details third graders retained. Workbooks and continuing to be involved in basal reading

lesson were the least effective instructional methods of increasing third graders' retention of details.

4. The reading of two non fiction trade books back to back on the same topic significantly increased third graders' higher level thinking, and workbooks were significantly lower than all other treatments.
5. The reading of two non fiction trade back to back on the same topic significantly increased third graders' performance on Stanford Vocabulary subtest (17.1% missed) than other treatments (SSR was 20.7%; workbooks was 23%; SSR with instructions 35.8%; and reading two teacher selected fiction books back to back 37.4%).
6. SSR, with student booklists monitored monthly to ensure that books read are grade appropriate, significantly increased third graders' abilities to comprehend, as measured by the Stanford Nine Comprehension Subtest.
7. No experimental treatment significantly distinguished itself in its ability to increase students Stanford Spelling subtest but all were significantly better than control treatments.
8. SSR, when student booklists were monitored monthly to ensure that books read are grade appropriate, and the reading of two non fiction books on the same topic back to back are equally effective in increasing third graders' fluency significantly above the growth experienced when reading two fiction books, workbooks, and SSR with instructions.
9. Third graders ranked the reading of two fictional trade books on the same topic as the treatment that they read faster than other treatments.

10. Workbooks and the control treatment significantly decreased third graders' positive attitudes toward reading (p = .001 and .001 respectively).
11. Third graders scored significantly lower on posttest positive attitudes toward reading than fourth graders.
13. There was no significantly difference between the effects of treatments by gender or ethnicity on any measure except that girls learned significantly more new vocabulary words on a timed reading than boys (p = .001).

Fourth Grade

1. When two non-fiction trade books on the same topic are read back to back, fourth graders significantly increased their immediate recall of new vocabulary.
2. The reading of two non-fiction trade books on the same topic back to back significantly increased fourth graders' abilities to identify main ideas.
3. SSR, when student booklists are monitored every month for the grade level appropriateness of books read, significantly increased the number of details second graders retained. SSR with instruction and control treatments were the least effective instructional methods of increasing fourth graders' retention of details.
4. The reading of two non fiction trade books back to back on the same topic significantly increased third graders' higher level thinking, and workbooks were significantly lower than all other treatments.
5. Cell sizes were too small to identify significant differences between treatments on fourth graders' scores on Stanford Nine Vocabulary Subtest.

6. The reading of two non-fictional trade books back to back (13.9% missed) and SSR (14.6% missed) significantly increased fourth graders scores on the Stanford Nine Comprehension Subtest, and these treatments were significantly greater in effect than controls (33.2% missed). Cell sizes were too small to determine reliably the effects of workbooks, SSR with instructions, and the reading of two fiction trade books back to back upon Stanford Nine Comprehension Subtest scores.
7. No experimental treatment significantly distinguished itself in its ability to increase students' Stanford Nine Spelling Subtest scores but all were significantly better than control treatments.
8. All treatments (including controls) were significantly better at increased fourth graders' fluency on a two- minute reading than SSR with instructions.
9. Fourth graders ranked the reading of two fictional trade books on the same topic as the treatment that they read faster than in other treatments.
10. Workbooks and the control treatment significantly decreased fourth graders' positive attitudes toward reading ($p = .001$ and .001 respectively.
11. Fourth graders scored significantly higher on post-test measures of positive attitudes toward reading than second, third or sixth graders.
12. There was no significantly difference between the effects of treatments by gender or ethnicity on any measure except that girls learned significantly more new vocabulary words on a timed reading than boys ($p = .001$).

Sixth Graders

1. When two non-fiction trade books on the same topic are read back to back, sixth graders significantly increased their immediate recall of new vocabulary.
2. The reading of two non-fiction trade books on the same topic back to back significantly increased students' abilities to identify main ideas.
3. The reading of two non-fiction trade books on the same topic back to back significantly increased sixth graders' abilities to retain details, and all other treatments fell below the mean of experimental groups and were non-significantly different from each other.
4. The reading of two non fiction trade books back to back on the same topic significantly increased sixth graders' higher level thinking, and workbooks were significantly lower than all other treatments.
5. The reading of two non fiction trade books back to back on the same topic (35.5% missed) significantly increased sixth graders' scores on the Stanford Nine Vocabulary Subtest above the effects of SSR (36.6% missed); control (37% missed); reading two teacher-selected fiction trade books back to back (37.4% missed; workbooks (40.2% missed), and SSR with instructions cell sizes were too small to determine reliable effect sizes.
6. The reading of short stories in workbooks (35.5% missed) was significantly increased sixth graders' scores on the Stanford Nine Comprehension Subtest above other treatment effects, with non-fiction treatment resulting in 44% missed; SSR with 44.9% missed, Fiction with 47.8% missed, control with 59.2%, with

cell sizes for SSR with instruction being too small to reliable determine effect sizes.

7. No experimental treatment significantly distinguished itself in its ability to increase students' Stanford Nine Spelling Subtest scores but all were significantly better than control treatments.
8. All treatments (including controls) were significantly better at increased sixth graders' fluency on a two- minute reading than SSR with instructions.
9. Fourth graders ranked the reading of two fictional trade books on the same topic as the treatment that they read faster than in other treatments.
10. Workbooks and the control treatment significantly decreased fourth graders' positive attitudes toward reading ($p = .001$ and .001 respectively).
11. Sixth graders scored significantly lower on post-test measures of positive attitudes toward reading than fourth graders.
12. No significant difference existed between the effects of treatments by gender or ethnicity on any measure except that girls learned significantly more new vocabulary words on a timed reading than boys ($p = .001$).

<u>All Grade Levels As A Total Group</u>

1. Four treatments using trade books reading (SSR, SSR with instructions, fiction books, and nonfiction) significantly outperformed workbooks or basals in developing immediate vocabulary development.
2. The reading of two nonfiction books on the same topic back to back was significantly better at increasing students' immediate identification and recall of main idea above all other treatments.

3. The reading of two nonfiction books on the same topic back to back was significantly better at increasing students' immediate identification and recall of details (2.19 details retained); SSR (2.16 details), fiction (2.07), workbooks (1.89) and SSR with instructions (1.63 details).
4. The reading of two non fiction trade books back to back on the same topic significantly increased students higher level thinking, and workbooks were significantly lower than all other treatments.
5. SSR was significantly better than workbooks and fiction treatments for increasing Stanford Nine Vocabulary Subtest Scores, and Nonfiction reading was significantly more effective than workbooks and Fiction treatments for increasing long-term transfer of vocabulary ability.
6. SSR and Nonfiction treatment groups were significantly better than workbooks, fiction, and control groups for increasing students' comprehension abilities when measured by scores on the Stanford Nine Comprehension Subtest. Cell sizes were two small in some cells to determine the effects of SSR with Grades 4 and 6.
7. No significant differences existed between experimental treatments in their abilities to significantly increase students' scores on the Stanford Nine Spelling Subtest.

Treatment-By-Treatment Effects

To understand the total effects of each treatment, each treatment is described individually in this section.

Control

1. No significant difference on Stanford Nine Achievement Vocabulary Subtest above experimental groups, but on all other measures the control group scored significantly lower than the experimental groups as a whole.
2. Control groups experienced the greatest percentage of students to decrease from above grade level to on grade level, and from on grade level to below grade level in one-half year than any experimental treatment.
3. Control groups experienced the greatest percentage of students to increase from below grade level to on grade level, and from on grade level to above grade level, but because of the accompanying large percentage of decrease, control groups did not experience the greatest net gain in reading growth.
4. Control groups and workbook experimental groups were significantly greater in decreasing students' positive attitudes to reading.

Workbooks

1. Sixth grade students in workbook treatment experienced significant growths in long-term transfer of vocabulary development as measured by significant differences on Stanford Nine Vocabulary Subtest scores.
2. Workbook treatment was equal in its abilities with the reading of two non-fiction trade books on the same topic back to back to assist above grade level readers increase their comprehension, as indicated by significantly greater scores on Stanford Nine Comprehension Subtest.

3. Workbook treatments were the most significantly effective method of increasing above grade level readers' spelling abilities, as measured by scores on the Stanford Nine Spelling Subtest.

The first two treatments are similar in that they did not involve the reading of trade books. The last four treatments are alike in that they did involve the reading of trade books in four types of instructional methodologies.

SSR With Instructions to Practice Objective that Had Just Been Taught

1. SSR with instructions treatments were significantly less effective than any other experimental or control treatment in increasing fourth and sixth graders fluency, as measured by the number of words that can be read during a two-minute period.
2. No significant differences on Stanford Nine Vocabulary Subtest from any other experimental treatment or control treatment.
3. SSR with instructions was the most effective method of increasing third graders immediate recall of new vocabulary terms, and was significantly greater than any other treatment for this population.

Reading Two Teacher-Selected Fictional Trade Books on the Same Topic Back to Back

1. Fictional trade book treatments were significantly better at increasing Grade 3 subjects' abilities to score higher on the Stanford Nine Vocabulary Subtest.
2. Fictional and non-fictional trade book treatments were equally and significantly better than all other treatments in reducing the number of students who decreased from above grade level to on grade level, and from on grade level to below grade level.

SSR (Reading Fiction and Non-fiction Trade Books that Students' Selected)

SSR was the best treatment to significantly increase second graders immediate recall of vocabulary and details. As early as 1967, Chall (1967) reported that lower socioeconomic students need to read challenging literature to raise reading comprehension. This could explain why SSR does not significantly increase students' achievement at grade 4 and above --- the books students choose are not challenging enough to build reading power. It is important to remember that in this study SSR treatments also included continuous teacher monitoring—not only during student selection of books but during the silent reading of them. When appropriate, teachers suggested books that were more difficult to challenge students, and students were required to self-monitor their reading goals, by recording their participation in SSR by documenting the number of pages and time spent reading each day in reading logs (contentions posited to increased SSR's benefits by Braunger and Lewis, 1998). Self-monitoring proved to help students realize the progress they were making as readers when they were engaged in SSR.

1. SSR was the best treatment for second and fourth graders to significantly increase abilities for long-term transfer of vocabulary abilities, as measured by scores on the Stanford Nine Vocabulary Subtest.
2. SSR was significantly more effective in increasing second graders' performance on the Stanford Nine Comprehension Subtest.
3. SSR was significantly more effective than reading two teacher-selected fiction books back to back at all grade levels for increasing Stanford Comprehension Subtest scores than was workbooks. The ability of SSR

to effect these comprehension scores were equal to the nonfiction trade book treatment.

4. SSR benefited less able and on grade level readers to score significantly higher than peers in other treatments on the Stanford Nine Vocabulary Subtest.
5. SSR enabled less able readers on Stanford Nine Comprehension Subtest to score significantly higher than peers in other treatments.
6. SSR was equally effective as non-fiction treatment at significantly increasing on-grade level readers' scores on the Stanford Nine Comprehension Subtest.
7. SSR was equal to the control treatment in producing the largest number of students to decrease from on grade level to below grade level in overall reading ability, and from above grade level to on grade level by midyear.
8. SSR was the treatment that resulted in the largest net decrease in the number of students who decreased in their overall reading abilities, so that the number of students who decreased was 6% greater than those who increased.
9. SSR was equally effective as the non-fiction treatment in increasing third graders' fluency, when rate is determined through the reading of a two-minute passage.

Non-fiction Trade Books on the Same Subject Read Back to Back

1. Non-fiction trade books significantly increased fourth and sixth graders immediate vocabulary recall.

2. Non-fiction trade books significantly increased all readers' abilities to retain main ideas.
3. Non-fiction trade books significantly increased third, fourth, and sixth graders abilities to recall details.
4. Non-fiction trade books significantly increased all students' abilities to think on higher levels immediately after completing a reading.
5. Non-fiction trade books significantly increased third and fourth graders' scores on the Stanford Nine Vocabulary Subtest.
6. Non-fiction trade books significantly increased sixth graders' scores on the Stanford Nine Comprehension Subtest.
7. Non-fiction trade books' effects on all students' scores on the Stanford Nine Comprehension Subtest were significantly greater than effects of fiction trade books that teachers select for students to read.
8. Non-fiction trade books were equal with SSR and significantly more effective in increasing on-grade level students' scores on the Stanford Nine Vocabulary Subtest.
9. Non-fiction trade books were significant more effective in increasing less able readers' scores on the Stanford Nine Comprehension Subtest.
10. Non-fiction trade books were equal with SSR and significantly more effective at increasing on-grade level readers' scores on the Stanford Nine Comprehension Subtest.

11. Non-fiction trade books were equal with workbooks and significantly more effective in increasing above grade level readers' scores on the Stanford Nine Comprehension Subtest.
12. Non-fiction trade books had the lowest number of students to decrease in their overall reading abilities from above grade level to on grade level, and from on grade level to below grade level by mid-school year.
13. Non-fiction trade books had the largest net gain in overall reading ability by mid-year, as 10% of students in this treatment increased in overall reading ability after 20 days of daily reading experiences.
14. Non-fiction trade books were equal with SSR and significantly more effective in increasing third graders' fluency rates by mid-year.

Fluency Effects

On post tests, students fluency rates rose significantly for all treatment groups above control groups, with non-fiction treatment groups scoring the highest gains. This indicates that allowing students 20 minutes of extra reading of trade books will increase fluency abilities significantly more than requiring students to spend an additional 20 minutes in their traditional, basic reading program.

Gender and Ethnicity Effects

There were no significant effects upon the effectiveness of any experimental treatment due to the ethnicity of students. Girls were significantly better able to recall newly learned vocabulary words after a two-minute timed reading than boys. No other significant effects existed between genders as to the effectiveness of any experimental treatment.

Discussion and Implications for Future Research

Many anecdotal, informal measures of the effects of each treatment were collected. For instance, in our study, second grade experimental class reported reading for fun more often at home, discussing what they had read with their families, and talking about our reading project with family members. The parents were so pleased by the progress that they witnessed in their children's reading growth that they sought out to find where they could also obtain some of these books their children were so enthusiastic about reading. Many of these parents went on to buy some of their children's favorites, and they read them to their children at home. It was very apparent to the parents that their children were truly learning some very vital information from our nonfiction books and enjoying it. Non-fiction books such as, Independence Day, were their children's favorites. As a result, the transfer effects of the treatments in this study need to be further examined.

In addition, another informal observation occurred during this study. It was noted by teachers and researchers that the highest quality writing experiences by students occurred during the reading of the highest quality trade books. Thus, the effects of trade book reading on the subsequent writing abilities of students needs to be further tested empirically.

The data that Quickreads , Chills, and Shocks did not increase comprehension were also found, as relates to Quickreads, in Hiebert & Fisher (in press). Because the newly-created workbooks that have been developed (as a response to NCLB Legislation) to simultaneously increase students' vocabulary, comprehension, and fluency need to be

empirically-tested. The data in this study suggest that three different types of these workbooks are not realizing this goal.

If we know that wide reading helps students to become engaged in reading, why has SSR not proven beyond a shadow of a doubt that SSR works? Our research suggests the reason is due to a lack of: monitoring, choices broad enough, 30 new books every four weeks, accountability from the teachers, in-depth ideas presented in the books, and nonfiction themes. SSR must be monitored everyday and teachers must answer their students' questions as the students ask them, otherwise the students will become disengaged from their book.

Past researchers have noted, it is not a particular method or material that matters, however, we have found that looking at it specifically by grade level and ability level, method and material does matter. Therefore, future research studies that synthesize prior research studies or conduct meta-analyses may need to be sensitive to grade-level effects, and collapse data that are common grade-level by grade-level. It may be true that for students' reading achievements to grow, the reading level and conceptual level must be matched to the students. In general, the problem of student underachievement cannot be framed simply as 'bad programs,' but should be conceptualized, in the future as to how inappropriate one type treatment is for students in a specific contexts. This was a finding that also occurred for English learners in low-income urban schools, as reported by Monzo & Rueda (2002).

Implications for Future Practice

Based on the data that general, all encompassing workbook treatments (designed to increase vocabulary, comprehension, and decoding) restrained students' growth in

fluency more than any other treatment, and the great need for less able readers to increase their fluency, workbook usage for 20 minutes daily for less able readers may significantly retard reading growth in fluency and overall.

The results for SSR were mixed, demonstrating that SSR has significant effects in specific objective and with particular populations in positive ways, but with other objectives and populations in negative manners. For years, researchers have attempted to document the effects of SSR, and their work has been inconclusive. Those that support this treatment point to case studies that demonstrated significant changes in individual children as a result of SSR.

Supporters argue that more sensitive and different assessment measures would reveal the subtle but important effects of SSR on students' achievement levels. Those who do not support SSR argue that students do not select materials that challenge and impact their breadth and depth of reading power and that direct instruction is a better means to reach that gal. Practice, practice, and practice does not reach perfection. Therefore, data from this study suggests that SSR with instructions created instructional objectives that were dissimilar, explaining the lack of effectiveness of this treatment. Data indicated that for students to enjoy SSR, they must select their own books and pursue objectives of their choice. When teachers direct students to pay attention to objectives that are not students own, students' pleasure from reading and students' abilities to build decoding, vocabulary, comprehension, higher level thinking, positive attitudes, and fluency do not increase significantly.

Data from SSR and the reading two fiction books on the same topic that teachers' select treatments (as would occur in thematic units) were distinct in their effects. Data

suggest students grow more if they can freely choose fictional topics and the objective to which they want to attend than if students read two teacher-selected fictional books on the same topic back to back. Perhaps free choice overrides challenge and thematic familiarity when reading fiction. Data suggest that these factors did not appear to interfere with the amount that students gain when they are asked to read two non-fiction trade books on the same topic that teachers select. The lack of significant effects of SSR with instructions on students' reading achievement may demonstrate the detrimental effects of mixing philosophically disparate goals in a single lesson. SSR is designed to increase recreational reading will, and superimposing teacher directions to attend to a specific objective prior to reading is an entirely different focus for reading. Students in this study appeared to have difficulty accomplishing both goals at once.

The only treatment that was ranked significantly higher for all grade levels was when students were asked in which treatment did they read the fastest. Because the reading of two teacher-selected fiction trade books was cited significantly more often by all students than other treatment groups, coupled with the lack of retention of details, main ideas, vocabulary, and higher level thinking of this treatment, suggests that students at every grade level quickly scan and skim two fiction books when asked to read two that are presented by their teacher in a thematic fashion. Thematic units that include non-fiction trade books had greater effects on reading achievement. The scanning and skimming that occurred during the reading of two teacher-selected fiction book did not increase students' fluency rates. SSR and non-fiction treatments for grades 2 and 3 did significantly increase the rate of reading on timed tests. Thus, for second and third

graders, at least, fiction reading can increase fluency rates if the books and topic read are student selected and thematically-based, required reading.

Because no treatment created statistically significant differences on students' scores on the Stanford Nine Vocabulary Subtest, research needs to be conducted to determine if a more targeted, supplemental program, designed specifically to increase students' vocabulary can impact students' long-term vocabulary growth and how long it takes to create such significant growth. One-half year of trade book reading (in four distinct forms), consistent work in an all-encompassing workbook, and basal reading instruction were insufficient to create such growth.

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