The Effects of Assisted Repeated Reading on Students of Varying Reading Ability: A Single-Subject Experimental Research Study

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The present study tested the effects of assisted-repeated reading on four first-grade students – a special education student, an at-risk, student, an English as a Second Language (ESL) student, and a general education student. The students engaged in echo and assisted-repeated reading two times a week for eight weeks. Each session lasted between 10 to 15 minutes. A baseline was established prior to the start of the intervention. Cold and final readings were recorded at each session. The findings of this study support the positive effect that assisted-repeated reading has on reading rate, however, the focus of this study was twofold: the effect on each subject and a comparison amongst the subjects.

Definition

Oral reading fluency is the ability to read text smoothly and effortlessly with correct phrasing and intonation. In Birsch's (1999) book , A Multisensory Teaching of Language Skills, Carreker (1999) defines fluency as "the rapid, prosodic flow with which a skilled reader reads. When a fluent reader reads aloud, it sounds as though he or she is speaking. His or her reading is fluid and accurate, with adequate speed, appropriate phrasing, and correct intonation" (Birsch 1999, p. 175; Carreker, 1999). Kuhn and Stahl (2003) found three primary areas of fluency: "(a) accuracy in decoding, (b) automaticity in word recognition, and (c) the appropriate use of prosodic features such as stress, pitch,

and appropriate text phrasing" (Kuhn and Stahl 2003, p. 5). A deficiency in any area may compromise reading fluency.

Description

A disfluent reader can be characterized by his/her inability to read smoothly with intonation. When a fluent reader reads it should sound as if he or she is speaking. Students may become hesitant, uncomfortable, and evasive when the subject of reading is introduced if they are disfluent The reason for the disfluency may be attributed to the student's inability to decode at a normal rate. When the student is not able to make the connection between graphemes and phonemes, or when this process is labored, the outcome is disfluent reading. Disfluent reading also has an effect on the student's comprehension (O'Shea & Sindelar, 1983; Levy, Abello, & Lysynchuk, 1997; Lefly & Pennington, 1991).

In a study conducted by Fleisher, Jenkins, and Pany (1979), the researchers state that a shared capacity or bottleneck hypothesis may account for the effect that low decoding ability has on speed and comprehension. Fleisher, Jenkins, and Pany state that "The basic notion is that individuals possess limited amounts of processing space, and that decoding and comprehension are separate but interrelated tasks both requiring space. The more space consumed by decoding, the less space available for comprehension. Thus, inefficient decoding can detract from comprehension" (Fleisher, Jenkins, and Pany, 1979, p.31).

History

As far back as 1676, the idea of word blindness and associated symptoms have been studied. In Shaywitz's book (2003) it is stated that a German physician, Dr. Johann

Schmidt, published observations of a man who had lost his ability to read. More cases became evident and a greater interest in reading difficulties and a variety of aspects of reading was spawned. In 1872 a British neurologist, Sir William Broadbent, discussed a case of a man who developed acquired alexia (Shaywitz, 2003).

As time progressed so did the study of reading. Shaywitz (2003) stated that in 1877 Adolf Kussmaul "came to the realization that a complete text-blindness may exist, although the power of sight, the intellect and the powers of speech are in tact" (Shaywitz, 2003, p.15). In 1895 one of the most significant studies was reported by Dr. Hinshelwood, an opthamologist, who clearly described the existence of reading disabilities as being separate from those that are associated with vision impairment (Shaywitz, 2003).

The first stage of identification was completed centuries ago, however, strategies to improve fluency have surfaced somewhat more recently. Samuels (1979) was one the first to implement and measure the results of an intervention targeted to increase reading rate and other components of fluency.

Methods of Instruction

Early studies focused on repeated reading to increase fluency. One of the earliest studies was completed by Samuels (1979). Samuels believed there were three levels of word recognition skills necessary in order to become a fluent reader. "The first level is what may be called the non-accurate stage. The student has great difficulty in recognizing words, even when a reasonable amount of time in provided. The second level is the accuracy stage. The student is able to recognize printed words with accuracy

but attention is required. The third and most advanced level is what we call the automatic stage. At the automatic stage, the student is able to recognize printed words without attention" (Samuels, 1979, p.406). In Samuel's study, students read an easy, short selection that was repeated until a rate of 85 wpm was reached. This research showed that reading speed increased while the number of word recognition errors decreased (Samuels, 1979). Samuels' research also showed a transfer of fluency between texts.

This method of repeated reading was also supported by studies conducted by Allington, (1983), Anderson (1981), Herman (1985), Homan, Klesius, and Hite (1993), Kuhn (2003), O'Shea, Sindelar and O'Shea (1985), Rashotte and Torgensen (1985), Rasinski and Zutell (1990), Stoddard, Valcante, Sindelar, O'Shea, and Algozzine (1993), and Dowhower (1987).

In Allington's article, Fluency: The Neglected Reading Goal (1983), he discussed the topic of practice vs. decoding instruction. Allington stated the students' fluency improved with practice, such as repeated reading, rather than instruction of word recognition. He believed that too much emphasis was put on instruction of sound/symbol relationship. Students needed more practice.

This idea has been supported in research completed by Rashotte and Torgesen (1985). In their research, they cite findings by Lesgold and Resnick (1982), "The attainment of reading fluency has meant an emphasis on word attack skills and development of word accuracy. Recent research has suggested that in order to improve the reading fluency and comprehension of many poor readers, reading instruction must also focus on ways to increase the speed of word recognition" (Rashotte & Torgesen, 1985, p. 181; Lesgold & Resnick, 1982).

In a study completed by Herman (1985) the results of research supported the theory that repeated reading has a significant effect on students' fluency. Her focal point for the study included specific research designed to show the effect of repeated reading on rate, speech pausals, fluency, and word recognition accuracy. The results of rate showed a significant increase within practiced stories and between the initial reading of story one and the initial reading of story five. The increase within the same story showed that practice increased speed, and the increase between stories indicated that practice affected the carry over from one story to another. The number of speech pauses dropped significantly but only within practiced stories. The total number of miscues dropped from 17% on initial reading of story one to 6.5% on final reading of story one. By story five, students' initial reading contained 11% miscues and 7% for the final reading. The results of combined accuracy show a significant improvement between the initial reading of story one and the initial reading of story five. Students' scores increased from 87% to 92% accuracy. The difference in accuracy for story five increased from 92% to 96% (Herman, 1985). Simple practices of repeated reading can be an effective supplementary method for increasing reading fluency. Other researchers have developed variations of repeated reading.

Assisted repeated reading takes many forms. The first to be discussed in this review is repeated listening-while-reading texts (Rasinski, 1990). The researcher selected 20 students from third grades in various elementary schools in the southeastern United States. "The subjects were paired with students of equal reading ability (identified by the classroom teacher who relied on personal judgment and the subjects' scores on a standardized reading test). Subject pairs represented high, average, and low reading

ability levels" (Rasinski, 1990, p. 148). The subjects received two cycles of treatment. Each treatment lasted four days. On Day one each group received a pretest. On days two and three group A received repeated reading, and group B received repeated listening. Day four consisted of a posttest. The second treatment cycle was the same, but the groups received the opposite treatment. Rasinski found that the gains made from pretest to posttest for both treatments were significant for both reading speed and reading accuracy, however he did not find significant differences between treatments from repeated reading or listening-while reading.

Rasinski's (1990) research indicates that both repeated reading and listening-while-reading are effective treatments. Rasinski states that teachers may be more familiar with repeated reading, and research on the listening-while reading approach may offer teachers an alternative method. Rasinski (1990) reported that in research by Johnston and Winograd (1985) and Winograd and Smith (1987) "listening-while-reading activities can be particularly beneficial for those students characterized as experiencing passive failure in reading by helping them to learn to take personal command of their own growth in reading" (Rasinski, 1990, p.149; Johnston & Winograd, 1985; Winograd & Smith, 1987).

Kuhn and Stahl (2003) also researched studies by Chomsky (1978) and Carbo (1981) in which reading-while-listening strategies were employed. The results of Chomsky's study indicated growth in fluency, however, this growth was a 6-month gain in 10 months (Kuhn & Stahl, 2003; Chomsky, 1978). Carbo's approach was somewhat modified to stress phrases, and students were instructed to use a point to text method.

The results of Carbo's study indicated that students gained 4 to 15 months in word recognition in a three month period (Kuhn & Stahl, 2003; Carbo 1981).

The difference between the results of each study may be attributed to the level of reading materials the students were using, as well as the speed of the tape. Carbo's tape speed was slow and the material was slightly higher than student ability. Chomsky used commercially distributed tapes at an ordinary speed. The level of difficulty was not measured (Kuhn & Stahl, 2003).

Another variation of assisted reading was reported by Anderson (1981). Her research presented methods that are appropriate at various stages. "Stage 1 starts at about age 4 or 5 with the teacher or parent reading aloud and the child repeating it as in echo reading. The teacher runs her finger along the print while either she reads or the child rereads. In Stage 2 the teacher reads aloud and leaves out words she thinks the child can supply. Role switching characterizes Stage 3, with the child reading most of the material and the teacher supplying any needed words to maintain fluency" (Anderson, 1981 p. 175).

Kuhn and Stahl (2003) reported findings of another variation of repeated reading that is more practical in its use in a classroom as compared to repeated reading. "Hollingsworth (1970) redesigned the procedure so that it could be used with up to eight students simultaneously. By using a wireless system, children could listen to a tape recording of a text while allowing the teacher to monitor their reading." (Kuhn & Stahl, 2003, p. 9; Hollingsworth, 1970). The results of this study showed no significant difference on the students' performance between those who received the intervention and the control group. "Hollingsworth (1970) considered the students' ability to read at grade

level the most likely explanation for the seeming ineffectiveness of the intervention" (Kuhn & Stahl, 2003, p.9; Hollingsworth, 1970). He performed the study again using a different population (Kuhn & Stahl, 2003).

The population for the second study consisted of 20 fourth-, fifth-, and sixth-grade remedial readers (Kuhn & Stahl, 2003). Hollingsworth (1978) increased the duration of the study from 30 to 62 sessions. The rest of the procedure was the same as his previous study. Kuhn and Stahl (2003) state that the findings from Hollingsworth's (1978) study showed a significant effect on the standardized comprehension test. The students receiving the intervention made one year's growth over one semester as compared to the other students who made 0.04 year's growth over one semester. This research indicates that assisted reading combined with implementing a longer intervention period was an effective approach to increase fluency for students with reading difficulties. It was not effective for those students who were reading at grade level (Kuhn & Stahl, 2003; Hollingsworth, 1978).

In a study conducted by Koskinen, Wilson and Jensema (1985) and reported by Kuhn and Stahl (2003), closed-caption television was employed to increase students' reading fluency. The 35 subjects ranged in grade level from second through sixth grades. They were instructed by 10 clinicians during a summer reading clinic. Portions of the script were used to develop fluency. "Because the study was exploratory in nature, no statistical measures were provided. However, many of these 'turned off learners' (Kosinen et al., 1985, p. 5) not only enjoyed the lessons but felt they benefited from the strategy. The clinicians considered the lessons effective in promoting the learners' fluency" (Kuhn & Stahl, 2003, p.13; Kosinen et al., 1985).

This change in attitude was also supported in a study that implemented a supported oral reading intervention. This study conducted by Morris and Nelson (1992) reported that students' improvement equaled increased motivation and a better attitude toward reading. This study took place in the southern Chicago school district. The researchers worked with one second-grade class of twenty-two students to implement a three-part intervention. All students were screened with the use of a word list. The test results revealed the same placement of students as the teacher had determined. The low group had great difficulty reading the second-grade basal, therefore it was this group of ten students who received the intervention. The teacher was resistant to relinquishing control and discarding the basal, therefore the intervention was implemented as a supplement to the reading program.

The new, three-day a week intervention began in early November. On Day one, the students participated in an echo reading of an appropriate level text. On Day two, the students read the same text in pairs. On Day three, the students read independently, "expert reading" (Morris & Nelson, 1992, p. 55). The students read 19 stories throughout the intervention that ran from November through May. The researchers began the intervention, and shortly thereafter the classroom teacher continued implementation of the program.

The results showed that the students scored between 95% and 98% in oral reading accuracy (Morris & Nelson, 1992). The researchers observed the lessons once a week and, in addition to an increase in reading accuracy, found that there was a positive change in the students' and the teacher's attitude. The students were proud and actually enjoyed reading. The teacher was also motivated by the students' improvement. The effect of the

change in attitude was reciprocal. After six months of this intervention the students were reading on a 1-2 level. The researchers stated that this strategy was easy to implement in the classroom and could be modified to suit a number of classroom situations. This strategy is an effective alternative to round-robin reading (Morris & Nelson, 1992).

The round robin reading strategy has been a popular approach for developing reading fluency in many classrooms in past years. In this method students take turns reading aloud. The drawbacks to this approach are lack of support, one-level text, and students' preoccupation with the section that they will be reading rather than listening to what is being read. Therefore, teachers are moving away from this fluency strategy (Reutzel & Hollingsworth, 1993). In Reutzel and Hollingsworth's study, the researchers compared the round robin method to the oral recitation lesson developed by Hoffman (1987). The Oral Recitation Lesson was also compared to the Shared Book Experience developed by Holdaway (1981). The discussion will begin with the results of a comparison between the oral recitation lesson and round robin.

The researchers, Reutzel and Hollingsworth (1993) studied 78-second grade students from two elementary schools in the Rocky Mountain region. The students' backgrounds included African American, Hispanic, Asian, American Indian, and Caucasian. Twenty-five percent of the students received free or reduced lunch. "Each of four classrooms in the two schools were randomly assigned to one of the two conditions or groups: a control group round robin reading (RR) and the oral recitation lesson (ORL) group. Thirty-nine students were randomly assigned to the RR group, and 39 students were randomly assigned to the ORL group" (Reutzel & Hollingsworth, 1993, p. 326-327). The researchers administered the Iowa Test of Basic Skills to the subjects.

The procedure for the round robin fluency intervention included a turn taking style. The two teachers who were randomly assigned to this control group already used this technique, and, therefore, were unaware that they were the control group for this study. The students were divided into three ability groups within the class and were assigned the same books as the ORL students. The intervention lasted for a period of four months. The feedback provided by these two teachers included a "sound it out" approach (Reutzel & Hollingsworth, 1993, p. 327; Daly & Hoffman, 1982). Two books were read each week by each group. On Day one the new book was read; Day two the same book was reread; Day three a new book was read; Day four that book was reread; and Day five the teacher read any previously read material (Reutzel & Hollingsworth, 1993).

The procedure for the Oral Recitation Lesson consisted of three routines. The first routine was the reading and presentation phase that consisted of introduction of the story, title, setting, and making predictions. The teacher read the story while the students made comments. Personal responses were encouraged after completion of the story. The teacher then led a discussion focusing on story elements. A story summary was made by the teacher, and students were invited to make their own. Finally, new vocabulary was discussed (Reutzel & Hollingsworth, 1993).

Reutzel and Hollingsworth (1993) described the second routine as the rehearsal and practice phase. First, the teacher reviewed the story as described in the first routine. Next, the teacher reminded the students that they were to practice for fluency. The teacher modeled the story, and then reread the story with the students. Individual word miscues were corrected after a student read independently. Assignments were set for the next day. Finally, students were allowed time to practice.

The third routine in the Oral Recitation Lesson was the performance and recitation phase. The students were informed that they would read orally for classmates. The teacher read first and when he/she came to a section that was assigned to a student, the student would then take over the reading. The teacher and other students would comment on the reading. This would continue until all assigned sections had been read (Reutzel & Hollingsworth, 1993). At the end of the study students were administered the ITBS. The following day, a running record, as well as the reading rate, was taken for each student, along with a retell section and comprehension questions.

The results indicated that the students provided with the ORL intervention performed significantly higher than those students who were provided with the round robin intervention in all areas with the exception of the comprehension subtest of the ITBS in which there was no significant difference (Reutzel & Hollingsworth, 1993). The results of this study indicate that "(a) the ORL is an effective means of developing second-grade students' oral reading fluency as measured by errors per minute, and (b) the performance of students in the ORL group was superior to that of the RR group in three out of the four comprehension measures, showing a strong effect of fluency development on second-graders' reading comprehension" (Reutzel & Hollingsworth, 1993, p. 329).

In a study in which the Oral Recitation Lesson was compared to another fluency intervention, The Shared Book Experience developed by Holdaway (), the ORL proved to be advantageous with regard to fluency (Reutzel, Hollingsworth, & Eldredge, 1994). The Shared Book Experience procedure involves reading and rereading entire stories, rather than passages, along with a tape or an individual in large and small groups. Fluency is developed through teacher modeling, small group repeated reading , and

supported reading with a tape or the teacher. The reading material is easy and predictable. Patterns are taught when rereading the large text with the whole class. Vocabulary is discussed and developed, and comprehension is a result of reading and responding to text. Reutzel, Hollingsworth, & Eldredge (1994) state that Holdaway believed that "children must be able to see the print, receive guidance and support through the print, and participate in oral reading to properly benefit from sharing books. Hence "big books" were developed specifically for the use in the Shared Book Experience which allowed teachers to read aloud a book that was large enough so that groups of children could all see the print and join in the reading" (p.43).

The study aimed to answer the following four questions: "1) Can instruction on and practice with oral renditions enhance comprehension of text? 2) How can oral reading instruction be organized and delivered more effectively in large groups with the classroom teacher as the instructor? 3) What are the differential effects of the two oral reading instructional routines, if any, on reader development ?(e.g., fluency, self-correction, accuracy, comprehension, and benefit to readers of differing ability), and 4) If differential effects are found between the two oral reading instructional routines related to reader development, how can the two routines be brought closer together to represent potentially optimal oral reading instructional practice?" (Reutzel, Hollingsworth, & Eldredge, 1994, p. 45).

Thirty-nine second-grade students were randomly assigned to the Shared Book Experience (SBE) and forty second-grade students were assigned to the Oral Recitation Lesson (ORL). The study was designed to control any quantitative differences among the four teachers. The Iowa Tests of Basic Skills standardized test and a researcher-

constructed oral reading/retelling test were used for this study. The teachers were trained and provided with materials and lessons for planning and implementing the procedure. Basal reading time was 50 minutes per day. The ORL and SBE oral reading instruction was 30 minutes per day for four months (Reutzel, Hollingsworth, & Eldredge, 1994).

In a SBE lesson, students previewed the book by looking at the big book's cover and discussing their thoughts. Traditional sized books were used for independent reading as well as audio tapes for assistance. In an ORL, students were seated at their desks facing the teacher. The teacher led a discussion to introduce the story. Next, she modeled for the students by reading with expression while students followed along. The students and the teacher discussed the story. When that was completed, the teacher summarized the story. The students then summarized and shared with a classmate. After summarizing, vocabulary was discussed. Skills were varied throughout the week (Reutzel, Hollingsworth, & Eldredge, 1994).

The four major findings of this study are as follows: " 1) There were no differences on comprehension between the SBE and the ORL instructional routines with the exception of answers to text/script-implicit questions; 2) The SBE routine appeared to be, of the two selected for this study, the better overall reading instructional routine for organizing and delivering oral reading instruction in larger groups with the teacher as instructor; 3) The SBE and ORL routines showed differential effects on word analysis and comprehension but not on the vocabulary and fluency measures used in this study; and 4) No interactions were noted between treatment and ability blocks, with the exception of nonsemantic/syntactic oral reading errors" (Reutzel, Hollingsworth, and Eldredge, 1994, p. 54).

This study found two major differences between ORL and SBE. "First, a significant difference was found on measures of word analysis ability and nonsemantic/syntactic oral reading errors favoring SBE over ORL. And second, a significant difference was found on measures of ability to answer text/script-implicit comprehension questions, again favoring SBE over the ORL" (Reutzel et al., 1994, p.56). Limitations noted included research perspectives, grade level, and limited post treatment assessment of oral reading growth.

Rasinski, Padak, Linek and Sturtevant (1994) combined the Oral Recitation Lesson developed by Hoffman, and paired repeated reading, and developed an intervention titled Fluency Development Lesson (FDL). This intervention takes only 10-15 minutes per day and includes the following steps:

"1. Teacher introduces the text and invites predictions; 2. Teacher models fluent reading by orally reading text to the whole class; 3. Teacher leads class in discussion of the text content and the teacher's oral reading of the text. Particular attention is given to the teachers' rate, phrasing, and expression and intonation during reading; 4. Teacher leads whole class in several choral readings of the text; 5. Teacher divides class into pairs and directs each pair to find a reasonably quiet and distraction-free place in the classroom or hallway. Each student reads the text three times to his or her partner, and then roles are reversed. The listening partner's role is to provide positive feedback to and support for the reader. Students are provided evaluations and comments about their partners' reading; 6. Teacher calls students back to their places after paired reading practice

and invites individuals, paors, or small groups to perform the text for the class; 7. Students place the text in a folder and are encouraged to practice reading on their own and to read the text for their parents" (Rasinski, et al., 1994, p. 160).

The subjects for this study consisted of second-graders from two elementary schools in a large urban school district. "School A had 14 students participate in the experimental treatment and 16 in the control. In School B there were 14 experimental participants and 10 control participants" (Rasinski, et al., 1994, p. 160). The duration of the intervention was six and one-half months. Pre- and posttests were administered. The results indicated that "greater gains in instructional reading level and reading rates were made by the experimental treatment group" (Rasinski, et al., 1994, p. 161). The authors also found that "experimental group students, especially those from School B, may have gained in rate to the limit of their physical capability. They nearly doubled their reading rate at each level of passage difficulty from pre- to posttest: actual gains over the pretest ranged from 81.7% to 93.6% for primer through Grade 3 passages. Gains by control groups were much less impressive, ranging from 34.2% to 49.2%" (Rasinski, et al., 1994, p. 162). This study clearly indicates the positive effect of repeated-paired reading on fluency development.

An adaptation of the Fluency Development Lesson is Fast Start Reading, also developed by Rasinski (1995). It is a "school-coordinated parental involvement in reading program for primary-grade students, designed to get children off to a successful start through intensive and systematic parental involvement in word decoding and fluency instruction.

It attempts to incorporate elements of effective parental involvement programs identified by previous scholars" (Rasinski & Stevenson, 2005, p. 111).

The subjects for this study included 30 first grade students at one elementary school in a suburban Ohio school district in which the majority of students were Caucasian. They were randomly assigned to Treatment and Control groups by reading skill levels. Parents and their child attended a sixty-minute training session. They were provided with the first 11 weeks of instructional materials and ideas about developing successful readers. The procedure for this intervention is as follows: the parent and child point to the text, the parent reads the same text to the child several times and discusses the passage, parent and child choral read that same passage several times to increase word recognition, the child reads independently and parent can support when necessary, and the parent and child work on related activities (Rasinski & Stevenson, 2005). Pre- and posttests were administered using The Letter/Word Identification test and three curriculum-based measurement probes. Information was gathered through phone conversations with the 15 parents of the Experimental group that was later used in the evaluation process. Parents in the Control group were sent a survey. These surveys were compared with the responses from the Experimental group.

The results indicated that the at-risk students showed significantly greater growth in reading skills than those students in the Control group, with a strong correlation between reading success and parental involvement. The researchers also discussed the idea of using the intervention during kindergarten (Rasinski & Stevenson, 2005).

Another program based on Hoffman's (1987) Oral Recitation Lesson was developed by Stahl, Heubach and Cramond (1997). This program, the Fluency-Oriented Reading

Instruction program, uses repeated reading in the classroom to develop students' automatic word recognition. The program incorporated three areas of instruction - "a redesigned basal reading lesson, a free reading period, and a home reading program" (Kuhn and Stahl, 2003, p. 16).

The researchers redesigned the story from the basal reader. On the first day the teacher read and discussed the story with the students. Key vocabulary and comprehension were addressed regarding the story. Echo reading and practice reading were additional approaches. The story was sent home to be read with parents. On Day two, the students reread the story with a partner. This cycle would begin again on the following day. This intervention was expanded over two years to increase from implementation with four teachers to ten teachers. "In both years, children gained, on the average, nearly 2 years in reading growth over the course of their second-grade year, as measured by an informal reading inventory. What was more gratifying were the effects that this intensive reading experience had on struggling readers. Over 2 years, all of the children but 2 who had began the second-grade year reading at a primer level (out of a total of 105) or higher were reading at a second-grade level or higher at the end of the year" (Kuhn and Stahl, 2003, p. 16). These results support the positive effect of repeated reading in a classroom setting.

As stated in the study by Stahl, Heubach, and Cramond (1997), Echo Reading is another form of repeated reading used with a whole group, small group, or an individualized instruction to increase oral reading fluency. Anderson (1981) described this method of intervention as implemented in studies by Schneeberg (1977) and Chomsky (1976). In this approach the teacher reads first and the student then repeats what has been read. The

teacher models with clarity and expression, and the student echoes not only the words but the intonation. In Schneeberg's study, this approach was used to introduce books. He also incorporated tapes to reinforce the skill. In Chomsky took a different approach with echo reading. She used a short book at the student's instructional level. The story was taped, and the student listened repeatedly while following along with the book. The student read the section to the teacher when he/she was able to read the section fluently. "Chomsky developed the method with five remedial readers from a third-grade class. They worked with the taped books and activities for 4 months and achieved overall reading gains ranging for 1 to 9 months. More impressive than the pre-and posttest scores were the changes in attitude toward reading and the improvement in self-concept regarding their ability to read. The students felt that they could and would read following the echo reading activities" (Anderson, 1981, p. 175). This form of independent assisted repeated reading was further studied by Hasbrouck, Ihnot, and Rogers, (1999).

In this study, an intervention program, "Read Naturally", is described and tested. The Read Naturally strategy combines the three "empirically-supported techniques: reading from a model, repeated readings, and progress monitoring" (Hasbrouck, Ihnot, & Rogers, 1999, p. 29). In step one of the program the student reads an unpracticed passage. The student is timed and then the student graphs the words correct per minute. Step two incorporates practice reading of the same passage. The student reads along three to four times with a tape. In step three the student reads independently until he or she reaches a predetermined words correct per minute (wcpm). When they have reached this goal, the teacher will time the student's reading. In order to pass, the student must reach the wcpm, have three or fewer errors, and read with correct phrasing. If these criteria are not

met, the student will continue practicing the same story. This is step four (Hasbrouck et al., 1999).

In the same study, Ihnot (1999) collected oral reading fluency data from 214 second and third grade students for an average of 32 weeks using this method. The intervention lasted 25 minutes per day, five days per week. The results indicated that "the average gain in oral reading for these low-performing remedial 2nd graders (1.68 wcpm/week) exceeded the "typical" goal for reading performance improvement (1.5 wcpm/week) defined by Fuchs, Fuchs, Hamlett, Walz, and Germann (1993), and the gain of the 3rd grade students (1.60 wcpm/week) exceeded the "ambitious" goals for third graders (1.5 wcpm/week) (Hasbrouck, et al 1993, p. 32; Fuchs, et al, 1993).

The third researcher in this study used the Read Naturally program with eight sixth-grade special education students in southeast Texas. The students received instruction for 45 minutes per day, four days per week. "Three of these students with LD gained one full year on the comprehension assessment, two improved by two years, two students gained three years, and one gained six years. The student who has been a non-reader in the fall performed at the 5th grade level on the comprehension measure in the spring" (Hasbrouck, et al., 1999, p. 33).

This study also showed an increase in the areas of student self-esteem and independence.

One of the earliest interventions was developed by Heckelman (1966, 1969) entitled the Neurological Impress Method. Kuhn and Stahl (2003) state in their research that the title of Heckelman's (1969) intervention reveals the lack of knowledge about neurology. This method was "suppose to impress the words directly into the student's "brain" (Kuhn & Stahl, 2003, p. 9). Anderson's research stated that Heckelman's (1966) method included

an area in which the student takes the lead when he/she gains more ability and confidence (Anderson, 1981). The procedure of the Neurological Impress Method (NIM) consists of choral reading between the teacher and the student. The teacher sits behind the student while reading into the student's ear. The teacher points to the text while reading to reinforce the sound symbol relationship. Heckelman (1969) applied this intervention with 24 seventh through tenth grade students. The students' reading levels were three years behind their grade level. During a summer program, these students received instruction for 15 minutes a day, five days a week (Kuhn & Stahl, 2003). The results of Heckelman's study indicated a mean gain of 1.9 years in oral reading fluency and comprehension. This study showed a gain in comprehension even though the method did not directly apply a comprehension component. Flood, Lapp and Fisher's (2005) study adapted Heckelman's NIM to include a comprehension component.

The Neurological Impress Method Plus (Flood, Lapp & Fisher, 2005) follows the same steps developed in Heckelman's NIM, however, the NIM Plus includes a final step. "The student retells the text to the teacher at the completion of the NIM intervention and answers comprehension questions (Flood, et al., 2005, p. 149). The present research consists of two studies.

The first study consisted of 20 students in a suburban area, five from each grade 3rd through 6th. These students read below grade level. Twenty student teachers worked with the students. The students orally read one minute probes and errors were subtracted from the total words read to determine a baseline for words correct per minute (wcpm). Comprehension was measured using an informal reading inventory. Students received instruction for 10 minutes a day, four days a week for five weeks.

The results indicated that all three areas, oral fluency, silent reading fluency, and comprehension showed statistical improvement after 5 weeks –3.3 hours- of NIM intervention. Statistically significant gains are unlikely after such a short amount of time unless the intervention was effective (Flood, et al., 2005).

The second study consisted of 20 3rd through 6th grade students in an urban area. All received 100% free lunch, and read below grade level readers. Of the 20 students, 11 were native Spanish speakers, 4 were African-American, and the remaining were non-English speakers. Instructors, other than the teachers, were hired using Title I money. Tutors were required to have six credits in reading/language arts. The students received NIM instruction for 10 minutes a day, four days a week. The procedure was similar to the first study, however there were differences in demographics and research observation. The researchers observed over 100 sessions (Flood, et al., 2005).

The results were also similar to the first study. Statistically significant gains were seen in all three areas indicating that this fluency intervention also increased comprehension (Flood, et al., 2005).

Research on the effectiveness of Readers Theatre in the development of reading fluency was presented in a study conducted by Keehn (2003). Keehn supports this claim through a comparative study of two different approaches to Readers Theatre. Keehn supported the benefits of this intervention by citing additional studies completed by Busching (1981), Edminston, Enciso, & King (1987), Forsythe (1995), Winegarden (1978), Young, (1991), and Martinez, Roser and Strecker (1999). The purpose of this study was to determine the effectiveness of Readers Theatre as an intervention for the development of reading fluency.

The subjects of this study were 66 second-grade students from a rural Texas school district. Pretests and Posttests were given to all participants. Treatment group I received mini-lessons and strategies to increase fluency in addition to the implementation of Readers Theatre. Treatment group two received instruction in Readers Theatre only (Keehn, 2003).

The results indicated that "both treatment groups made statistically significant growth in oral reading fluency during the nine-week Readers Theatre intervention" (Keehn, 2003, 49). Keehn's study also indicated that explicit instruction in fluency in addition to Readers Theatre did not show a significant difference in outcome. The reason for this lack of difference could be that teachers are prone to assist their students even though they were instructed not to do so (Keehn, 2003).

Major Areas of Agreement

One major area of agreement is that repeated reading, in various forms such as assisted repeated reading, proves to be an effective intervention for the development of reading fluency. Researchers also agree that the use of appropriate level text for fluency development is necessary to promote reading fluency. The research states that a student must be able to decode what he/she is reading so that the energy can be spent on practice of intonation and prosody as well as reading rate, rather than expending the energy on sound by sound, word by word decoding (Keehn, 2003; Heckelman, 1969; Flood, Lapp and Fisher, 2005; Kuhn and Stahl, 2003; Anderson, 1981; Hasbrouck, Ihnot and Rogers, 1999; Chomsky, 1976; Schneeberg, 1977; Stahl, Heubach and Cramond, 1977; Rasinski, Padak, Linek, and Sturtevant, 1994; Reutzel and Hollingsworth, 1993), Reutzel, Hollingsworth, and Eldredge, 1994; Hollingsworth, 1978; Rasinski, 1990; Herman, 1985;

Allington, 1983; Samuels, 1979; Homan, Klesius and Hite, 193; Rasinski and Zutell, 1990; O'Shea, Sindelar, and O'Shea, 1985; Carbo, 1981; Rasinski and Stevenson, 2005; Kuhn and Stahl, 2003; Kuhn, 2005).

Researchers also state the positive effect of increased fluency on students' attitude toward reading (Morris & Nelson, 1992; Kuhn & Stahl, 2003; Hasbrouck, Ihnot, & Rogers, 1999; Anderson, 1981).

Major Areas of Disagreement

One area of disagreement in fluency research resides in the appropriate age of implementation. In a study by Rasinski and Stevenson (2005) the subjects studied were first graders. In another study by Rasinski, Padak, Linek and Sturtevant, (1994) the subjects were second graders. In Rasinski's (1990) study the subjects were third graders. Reutzel, Hollingsworth and Eldredge also studied third-grade students in their intervention (1994). In all studies, the effects of the fluency interventions were significant, however, the researchers suggest that earlier intervention may produce similar outcomes.

Method

As the above literature review indicates, fluency instruction is a necessary component of reading acquisition; however, the research that has been done has not studied students of various reading abilities. Therefore, the following study was designed to address this area of need.

The method used in this study was single-subject experimental research. This type of research establishes the effects of an intervention on a single subject, rather than an average of scores. It provides a personalized evaluation of the data. The present study

was designed to extend the results of previous studies by including students in the same grade level but of varying reading abilities.

The purpose of the study was to collect, analyze, and compare the data that assisted-repeated reading had on students' oral reading fluency.

Subjects

The study took place in a first-grade classroom in a small, low-socioeconomic school district. The four subjects consisted of three boys and one girl.

The first subject is a student who is classified as a specific learning disabled student. His age at the start of the intervention was seven years eight months. This subject has four siblings, three of which are of school age. The oldest sibling is an eighth-grade male who is considered an at-risk student. The second oldest sibling is an fourth-grade male who is also classified as specific learning disabled. The younger sibling is a male kindergarten student who has been referred to the child study team and is currently being evaluated for a learning disability. The youngest sibling is a female of less than one year old. The first subject is a friendly boy who gets along well with his classmates. He is conscientious of his schoolwork; however, his homework is never completed. Excessive absenteeism is an issue with all siblings. This subject is struggling with reading. He has a very difficult time decoding words that contain vowel digraphs. His comprehension and recall are areas of strength. He is a pleasant child with whom to work.

The second subject is an English as a Second Language student. His age at the start of the intervention was six years three months. He is from a Hispanic background. He has a younger male sibling who attends Pre-K at the same elementary school. This subject's deficiency lies in the area of oral language. His processing is delayed. He was recently

referred to the Intervention and Referral Services Committee. He is not in danger of being retained; however support is required for this student. He has become more outgoing as time has passed. He has become more comfortable with his surroundings. His decoding is improving; however his comprehension and response to oral instruction is low.

The third subject is an at-risk male student. His age at the start of the intervention was seven years. He is an only child from a one-parent household. His mother is involved in his education. She is supportive at home, and is in contact with his teachers on a regular basis. This subject is an outgoing boy who likes to play and be involved in all classroom activities. He is active and has some trouble staying on-task. He is eager to learn and responds well to praise. He is interested in learning to read. Decoding is challenging, but he does not give up easily.

The fourth subject is a general-education female student. Her age at the start of the intervention was seven years. She is of Polish ethnicity. Her mother's primary language is Polish. She has a younger female sibling who is not of school age. She is a kind, hard-working student who is quite competent in the area of language. She speaks, reads, and comprehends at an average to above-average level. This subject interacts well with her classmates and has a positive attitude.

All kindergarten through third-grade students were tested in October by Basic Skills teachers in the district using the DIBELS test. The results of this information, along with teacher observation and classroom performance, aided in the selection of these students.

Materials

Leveled reading books were used to establish a baseline score for each student. Leveled books were also used to record each student's reading rate. Passages of 100 words were marked, and the data were graphed for cold and final readings for each passage. Reading expression and ease were noted for each student. The students graphed each of their cold and final readings using graph paper and crayons.

Procedure

After a baseline was established, each student completed a cold reading on his/her instructional level.. The student read for one minute and the student then graphed his or her score. Each student then listened to the teacher model the passage. He or she echoed the teacher's reading. The teacher and the student completed two sessions of repeated reading. The student completed a final reading of the passage within a one-minute period. The words correct per minute were recorded by the student on a graph. This procedure was repeated for each student. The average time for this intervention was 10-15 minutes per student. The intervention was administered twice a week for eight weeks. The duration of the intervention, including the baseline, was nine weeks.

Data Analysis

Reading rates were graphed for each student for each passage read. A cold and final reading were recorded for each passage. The results from the graphs were used to compare the student's individual progress throughout the intervention. In addition, the data collected was used to compare the effect of the intervention across the subjects to determine if the intervention was more effective when targeting a specific ability level.

Results

The results of the fluency intervention are presented in Figures 1-6.

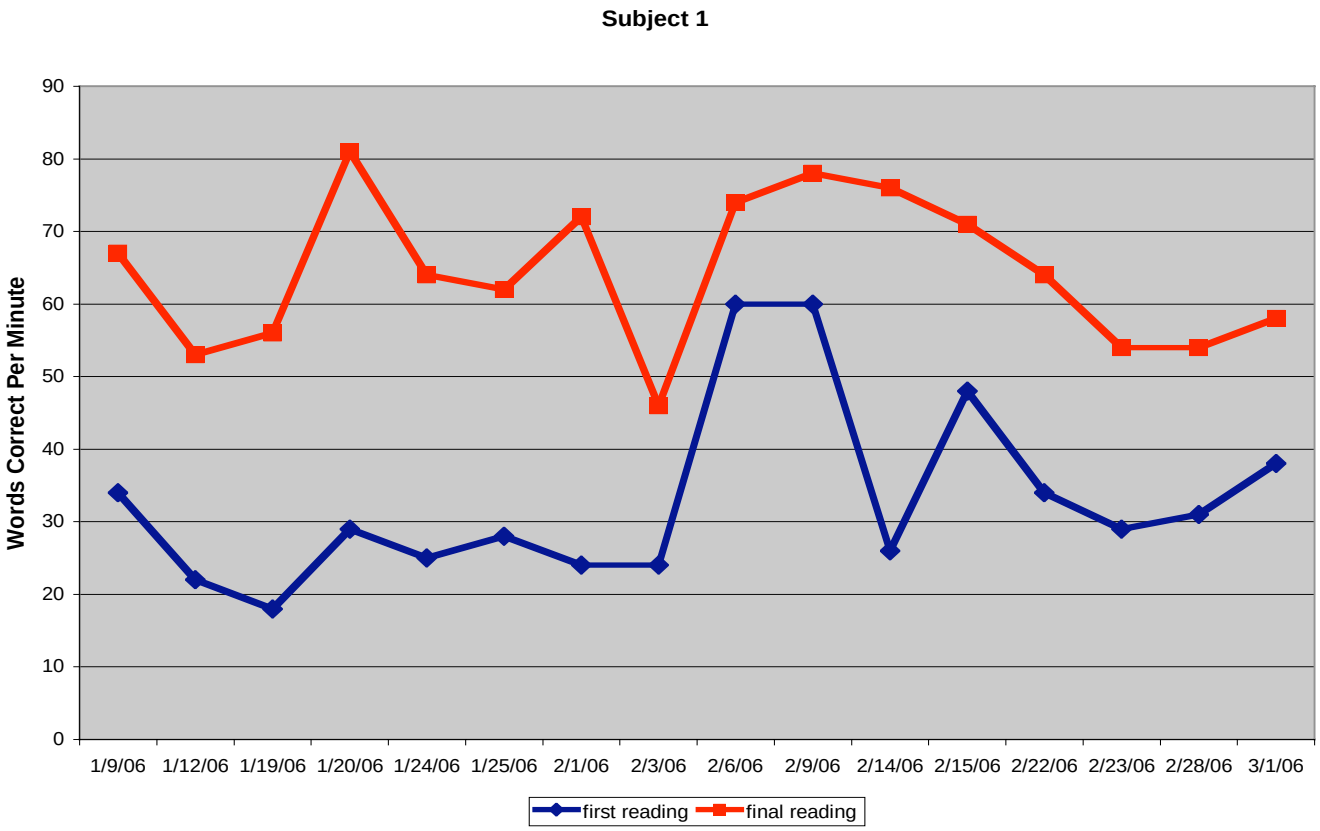
Subject 1
Words Correct Per Minute
90
80
70
60
50
40
30
20
10
0
1/9/06
1/12/06
1/19/06
1/20/06
1/24/06
1/25/06
2/1/06
2/3/06
2/6/06
2/9/06
2/14/06
2/15/06
2/22/06
2/23/06
2/28/06
3/1/06
first reading
final reading

Figure one

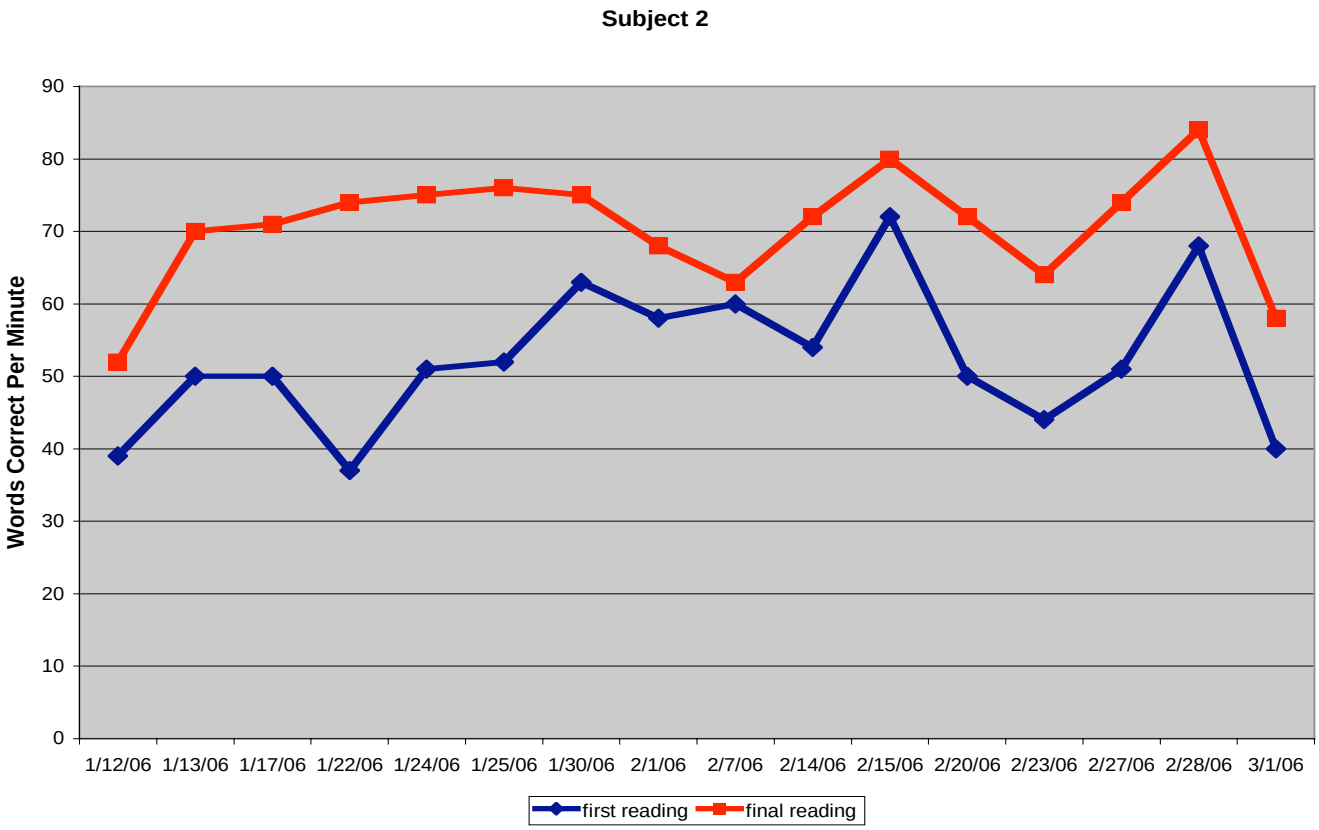
Subject 2
Words Correct Per Minute
90
80
70
60
50
40
30
20
10
0
1/12/06
1/13/06
1/17/06
1/22/06
1/24/06
1/25/06
1/30/06
2/1/06
2/7/06
2/14/06
2/15/06
2/20/06
2/23/06
2/27/06
2/28/06
3/1/06
first reading
final reading

Figure two

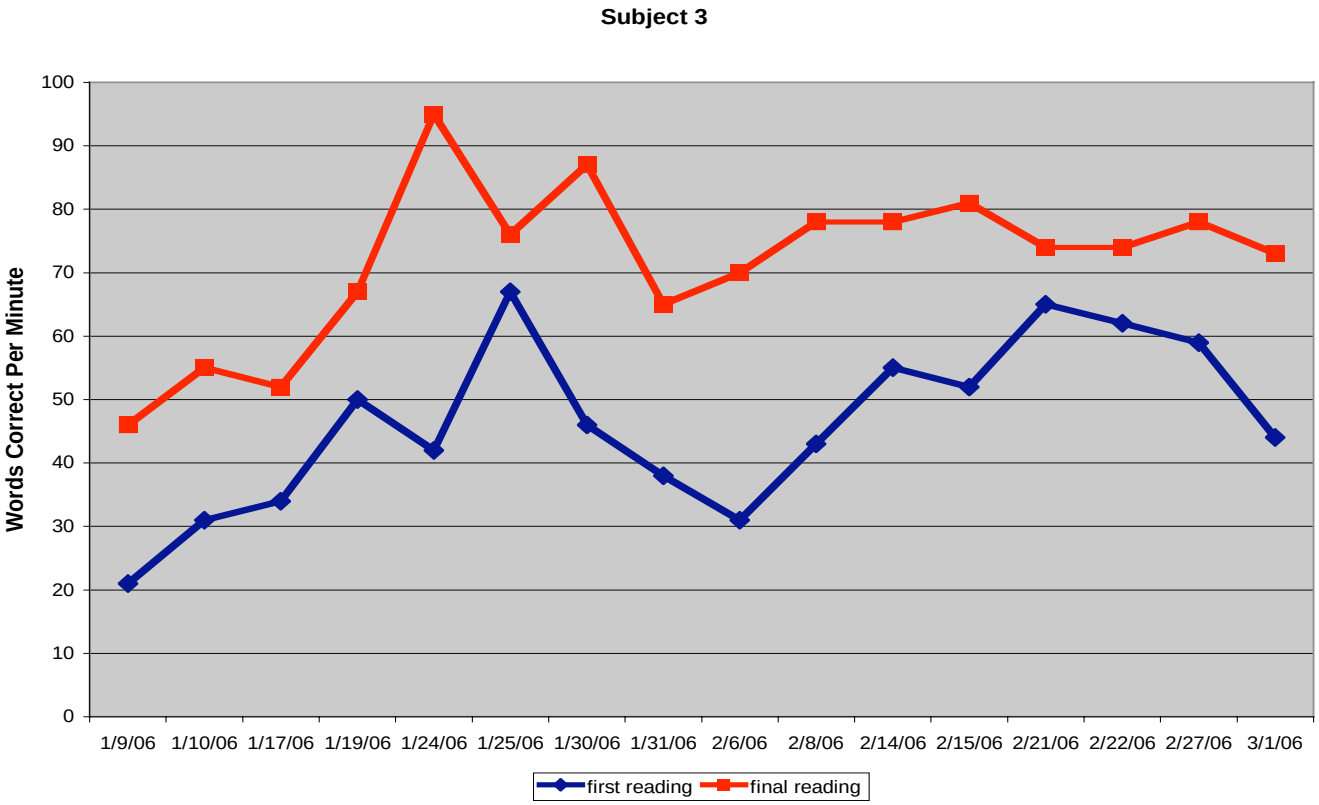

Figure three

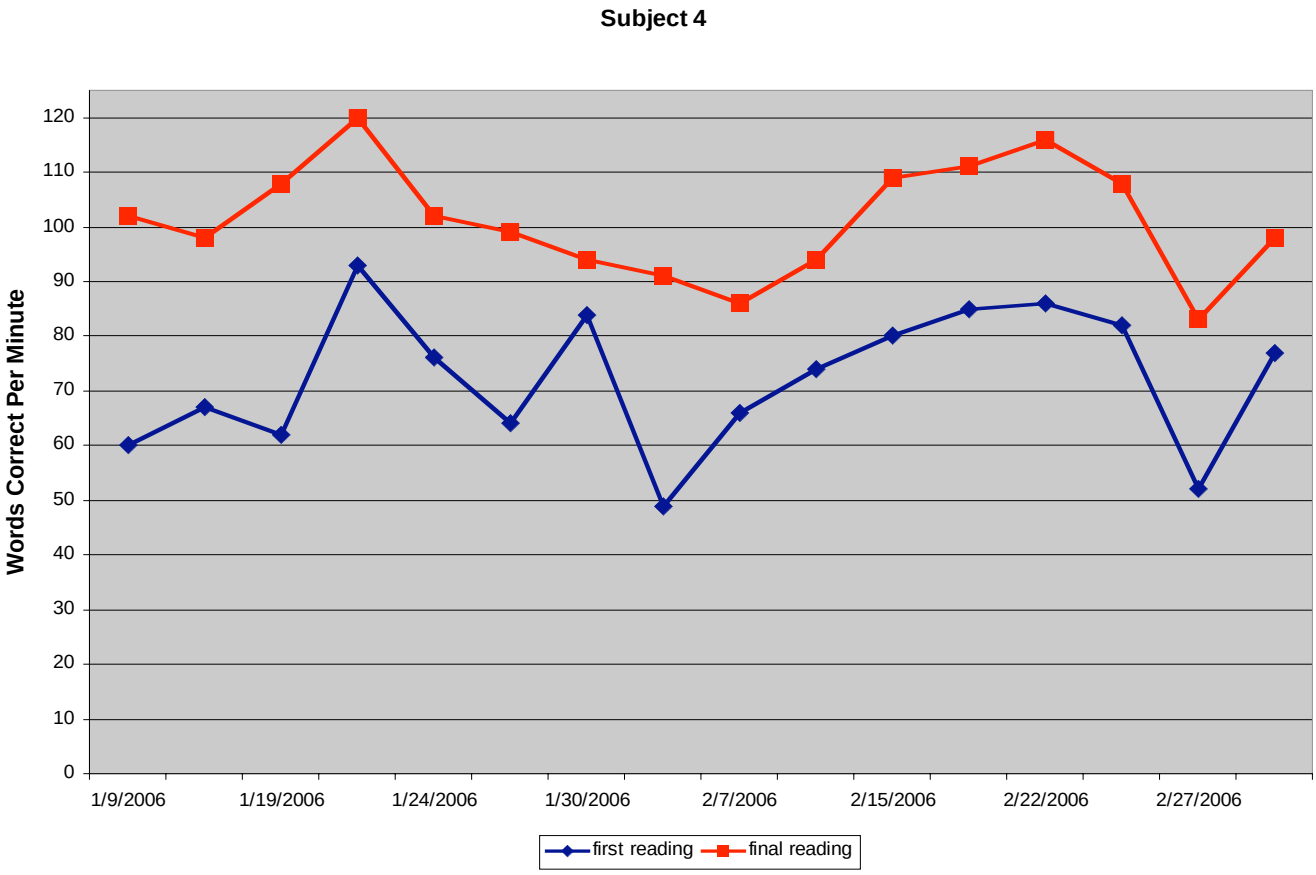
Subject 4
Words Correct Per Minute
120
110
100
90
80
70
60
50
40
30
20
10
0
1/9/2006
1/19/2006
1/24/2006
1/30/2006
2/7/2006
2/15/2006
2/22/2006
2/27/2006
first reading
final reading

Figure four

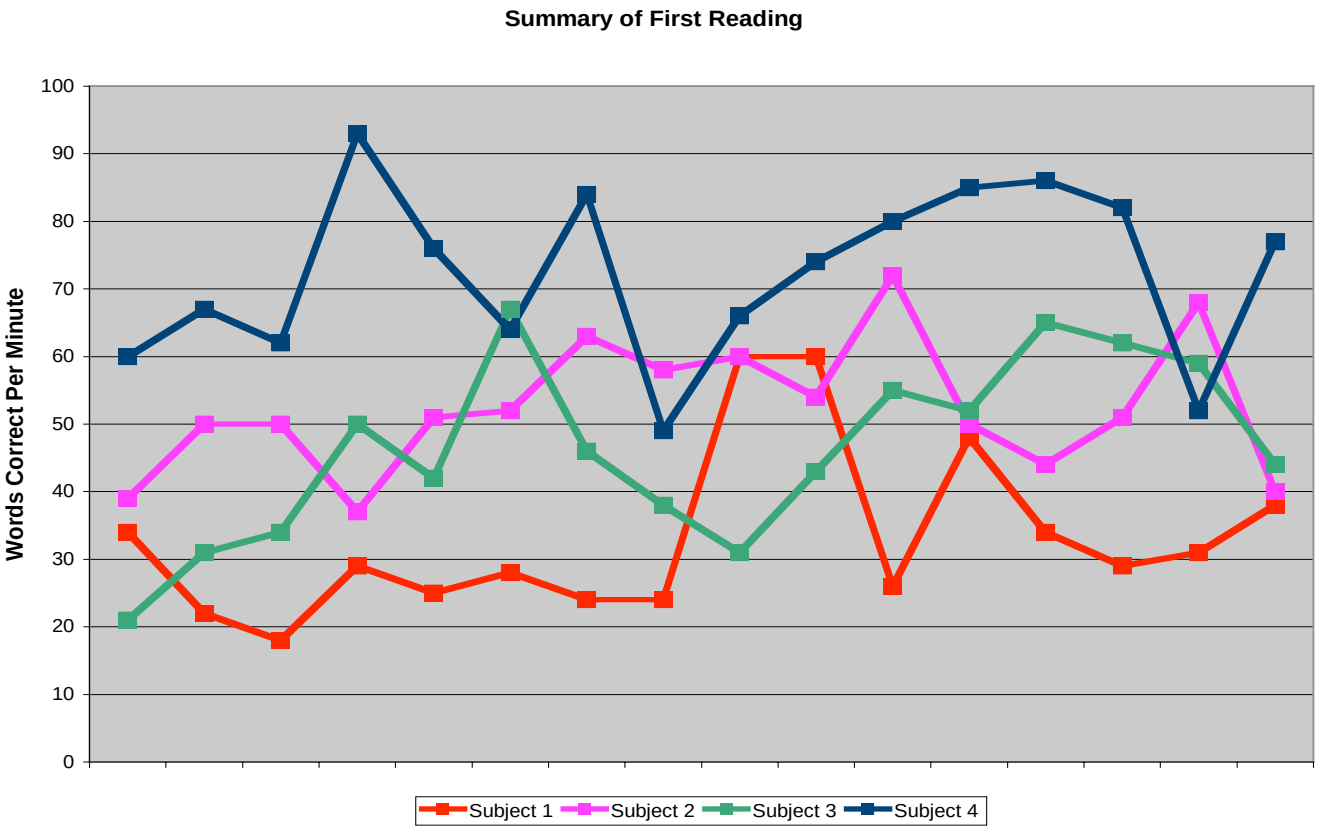
Summary of First Reading
Words Correct Per Minute
100
90
80
70
60
50
40
30
20
10
0
Subject 1
Subject 2
Subject 3
Subject 4

Figure five

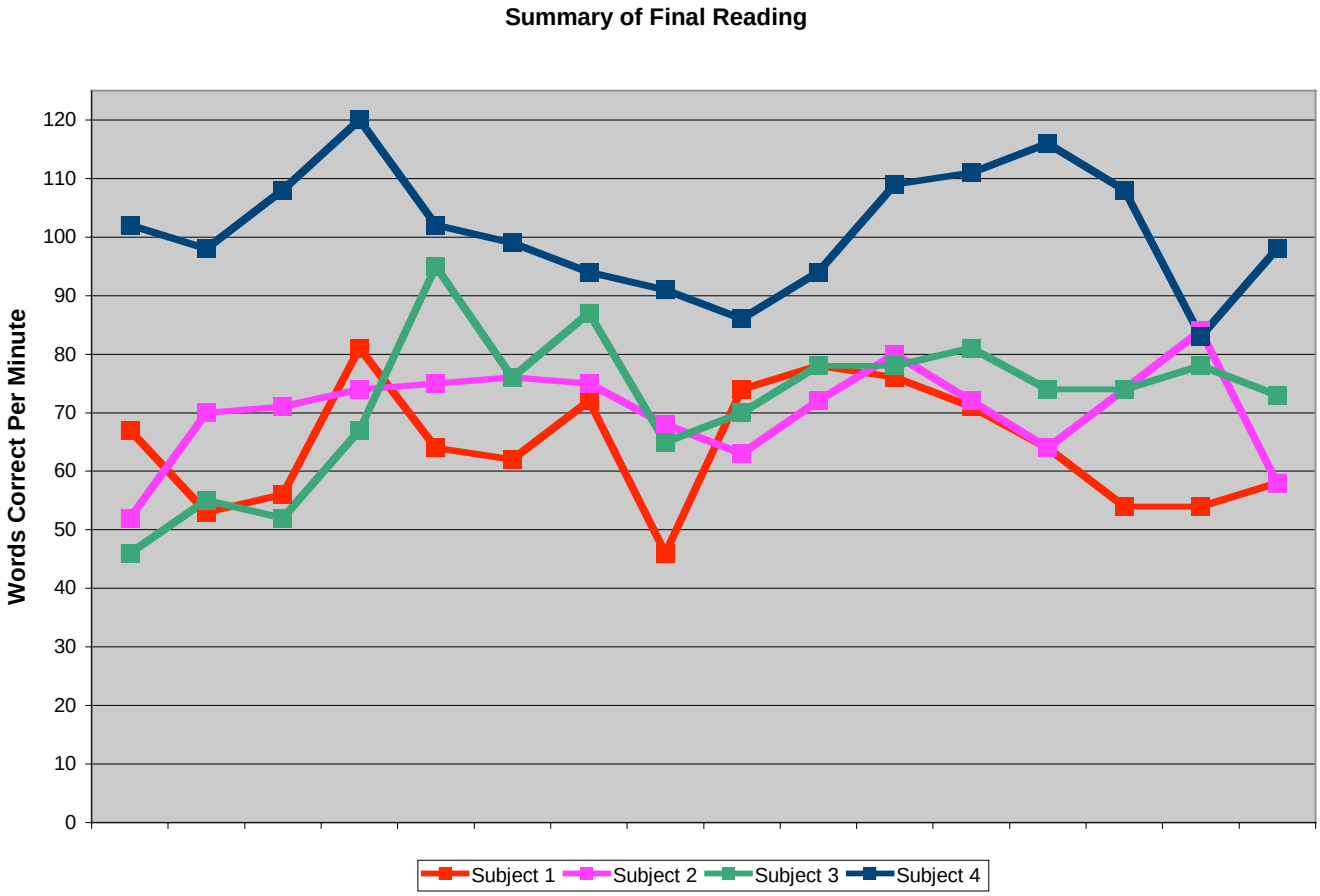
Summary of Final Reading
Words Correct Per Minute
120
110
100
90
80
70
60
50
40
30
20
10
0
Subject 1
Subject 2
Subject 3
Subject 4

Figure six

Discussion

The purpose of this study was to examine the effects of assisted reading on first-grade students whose reading ability varied. Past research has studied the effect of repeated reading using various methodologies; however there was a need to apply the same intervention across a group of students at different levels of decoding and compare the results. A single-subject experimental research methodology was used with four first-grade students. The first subject was a special education student. The second subject was an English as a Second Language student. The third subject was an at-risk student. Finally, the fourth subject was a general education student. A baseline was established prior to the intervention. The intervention lasted for an eight week period. Cold and final readings were taken for each passage read. Each student read a new passage at each intervention session. The cold reading was the first, unpracticed reading. The students then engaged in echo and assisted repeated reading and a final reading was recorded. The results indicated that all students scored higher than his or her baseline score 100 percent of the time when the intervention was administered. The results from the practice (first reading of each passage) reading were also examined to determine what effect practice had on the students' words correct per minute. These results showed an increase for all students.

Figure one shows the results for Subject One, a special education student. Subject One read at a level D-E. The results indicate that 94 percent of the first readings and 100 percent of the final readings were over the high range of the baseline reading with the intervention. The baseline scores were 17, 20, 21, 17, and 17 words correct per minute with a mean score of 18 wcpm. Subject One's first reading scores ranged from 18 to 60

words correct per minute. These results indicate that practice reading had an effect on the increase of words correct per minute. The final scores that were recorded after each session of intervention ranged from 46 to 81 words correct per minute. These results indicate that assisted repeated reading had a positive effect on raising the student's words correct per minute. Transfer of skill to unrelated text is also noted in this intervention. The results suggest that this student benefited from the practice reading as well as the intervention. When the student became more familiar with the words, he had more energy to focus on the rate and flow of the text.

Figure two shows the results for Subject Two, an ESL student. Subject Two read at level D-E. The results indicate that 75 percent of the first readings were higher than the baseline with practice reading, and 100 percent of the final readings were higher than the baseline with the intervention. The baseline scores for Subject Two were 48, 47, 36, 42 and 42 words correct per minute with a mean score of 43 wcpm. Subject Two's first reading scores ranged from 37 to 72 words correct per minute. These results indicate that practice reading had an effect on the increase of words correct per minute. The final scores that were recorded after each session of intervention ranged from 52 to 84 words correct per minute. These results also indicate that assisted repeated reading had a positive effect on raising the student's words correct per minute. Transfer of skill to unrelated text is also noted in this intervention; however the percentage was lower when compared to Subject One. The results suggest that this student benefited from the practice reading as well as the intervention.

Figure three showed the results from Subject Three, an at-risk student. Subject Three read at level D-E. The results indicate that 69 percent of the first readings were

higher than the baseline with practice reading, and 100 percent of the final readings were higher than the baseline with the intervention. The baseline for Subject Three was 41, 40, 41, 38, and 34 words correct per minute with a mean score of 39 wcpm. Subject Three's first reading scores ranged from 21 to 67 words correct per minute, and the final reading scores ranged from 46 to 95 words correct per minute. These results indicate that Subject Three benefited from the practice reading as well as the intervention, and a transfer of skill was present in both the practice and intervention readings.

Figure four shows the results for Subject Four, a general education student. Subject Four read at level G. The results indicate that 50 percent of the first reading and 100 percent of the final readings were higher than the baseline. The baseline scores were 65, 71, 63, 62, and 70 words correct per minute with a mean score of 66 wcpm. Subject Four's first reading scores ranged from 52 to 93. These results indicate that practice reading had an effect on the increase of words correct per minute. The final scores that were recorded after each intervention session ranged from 83 to 116 words correct per minute. These results indicate that assisted repeated reading had a positive effect on the increase of words correct per minute.

Figure five shows the first readings for all students in this study. The results demonstrate the effect of practice reading of new texts. The overlap of common words was minimal. Figure six shows the final readings for all students in this study. The results demonstrate the effect of assisted repeated reading of each text. The results indicate that the intervention was effective for all students to varying degrees.

The findings of this research support the positive effect of repeated reading in all variations of implementation. Samuels (1979) was one of the first to implement this type

of intervention in order to determine its effectiveness regarding reading rate. His results showed that students' reading speed increased while the number of word recognition errors decreased. His research also showed transfer of fluency between texts.

This method of repeated reading was also supported by studies conducted by Allington, (1983), Anderson (1981), Herman (1985), Homan, Klesius, and Hite (1993), Kuhn (2005), Kuhn and Stahl (2003), O'Shea, Sindelar, and O'Shea (1985), Rashotte and Torgensen (1985), Rasinski and Zutell (1990), Stoddard, Valcante, Sindelar, O'Shea, and Algozzine (1993), and Dowhower (1987).

In a study by Herman (1985) the results demonstrated an increase in reading rate from the first initial reading to the final initial reading. Herman's study consisted of five initial readings. The present study consisted of 16 initial readings, which extends the effect of the transfer of skills. The present study also extends the findings of previous studies by implementing this intervention on a small group of first-grade students. Most research studied students in the second grade and higher, with the exception of Rasinski (1995) who studied 30 first-grade students.

Another focus of the present study was to examine the difference in effect, if any, amongst students in general education, special education, ESL, and those at-risk. The results indicate that the special education and at-risk students demonstrated greater growth in reading rate than the ESL and general education students. The findings suggest that those students who had the most difficulty decoding experienced greater increases in reading rate. These results may be due to echo and repeated reading which freed up the energy that had been expended on decoding. The students who had less difficulty decoding also showed an increase; however the results were not as notable. The

students' initial reading rates were average to above average for the first half of first grade.

The above results confirm my expectations of this study. The bottleneck effect occurs when students expend a large amount of energy decoding words, leaving little energy for fluency and comprehension. Allington's (1983) research discussed the topic of practice versus decoding instruction. Allington believed that too much emphasis was put on instruction of sound/symbol relationship when what students required most to become fluent readers was practice. It is evident that repeated reading rate alone increases students' reading rate, and as in this study, transfer of skill is evident.

Future studies could expand on the effects of repeated reading intervention by including a decoding element and by increasing the number of subjects. Because most research was conducted using students in grades two through six, continued research at the first-grade level would be valuable to support these findings.

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