The connection between fluency and comprehension through the use of repeated reading

Cathianne Kurtz

Follow this and additional works at: https://digitalcommons.stritch.edu/etd
Part of the Education Commons

Recommended Citation
Kurtz, Cathianne, "The connection between fluency and comprehension through the use of repeated reading" (2013). Master's Theses, Capstones, and Projects. 324.
https://digitalcommons.stritch.edu/etd/324

This Action Research Paper is brought to you for free and open access by Stritch Shares. It has been accepted for inclusion in Master’s Theses, Capstones, and Projects by an authorized administrator of Stritch Shares. For more information, please contact smbagley@stritch.edu.
The Connection Between Fluency and Comprehension

Through the use of Repeated Reading

By

Cathianne Kurtz

A Graduate Field Experience

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Master of Arts
Language and Literacy

At Cardinal Stritch University

Milwaukee, WI

2013
This Graduate Field Experience
for Cathianne Kurtz
Has been approved for Cardinal
Stritch University by

____________________________
Kathy Murray
(Advisor)
4-17-13

____________________________
(Date)
ABSTRACT

Throughout my teaching career, I have wondered why some students can read with fluency and expression while other students struggle to read with fluency. I have taught special education and have worked with students who have a specific learning disability, emotional behavioral disability, cognitive disability and Autism. I have worked with students with disabilities from first, second, third and fourth grades, in all four grade levels; I have also observed students who struggle with reading fluency also struggle with reading comprehension. This made me wonder if reading fluency had an impact on comprehension. A fluent reader is one who is able to decode automatically without attention; thus they are able to process meaning at the same time they decode words (Homan, Klesius, Hite, 1993). After discussing this thought with many other colleagues and reading research articles, I wondered if implementing Repeated Reading in my classroom would increase students’ fluency and in turn increase their comprehension. Due in part to my collaboration and research I explored the following research question, “Does student’s fluency through the use of Repeated Reading increase student’s comprehension?”
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature page</td>
<td>2</td>
</tr>
<tr>
<td>Abstract</td>
<td>3</td>
</tr>
<tr>
<td>Table of Contents</td>
<td>4</td>
</tr>
<tr>
<td>List of Appendices</td>
<td>6</td>
</tr>
<tr>
<td>Chapter 1: Statement of Problem</td>
<td>7</td>
</tr>
<tr>
<td>Chapter 2: Literature Review</td>
<td>12</td>
</tr>
<tr>
<td>Chapter 3: Implementation</td>
<td>52</td>
</tr>
<tr>
<td>Introduction</td>
<td>52</td>
</tr>
<tr>
<td>Participants</td>
<td>53</td>
</tr>
<tr>
<td>Data Collection</td>
<td>54</td>
</tr>
<tr>
<td>Procedures</td>
<td>55</td>
</tr>
<tr>
<td>Summary</td>
<td>57</td>
</tr>
<tr>
<td>Chapter 4: Results</td>
<td>59</td>
</tr>
<tr>
<td>Introduction</td>
<td>59</td>
</tr>
</tbody>
</table>
THE CONNECTION BETWEEN FLUENCY AND COMPREHENSION

APPENDICES

Appendix A - Fountas & Pinnell Benchmark Assessment

Appendix B - Qualitative Reading Inventory- 5 Assessment
CHAPTER I

Statement of the Problem

Throughout my teaching career, I have wondered why some students can read with fluency and expression while other students struggle to read with fluency. I have taught special education and have worked with students who have a specific learning disability, emotional behavioral disability, cognitive disability and Autism. I have worked with students with disabilities in first through fourth grade; I have observed students who struggle with reading fluency also struggle with reading comprehension. This made me wonder if reading fluency had an impact on comprehension. A fluent reader is one who is able to decode automatically without attention; thus they are able to process meaning at the same time they decode words (Homan, Klesius, Hite, 1993). After discussing this thought with many other colleagues and reading research articles, I wondered if implementing Repeated Reading in my classroom would increase students’ fluency and in turn increase their comprehension. Due in part to my collaboration and research I explored the following research question, “Does student’s fluency through the use of Repeated Reading increase student’s comprehension?”

Repeated Reading consists of rereading a short meaningful passage several times until a satisfactory level of fluency is achieved. Students first read a passage with a fluent reader then re-read the same passage on their own, while the teacher times their repeated reading or has the student read the same passage for one minute, multiple times. Then the procedure is repeated with a new passage. While the student reads the teacher records the reading speed and number of word recognition errors. Students reread a
passage until a determined word per minute (WPM) criterion rate is reached. When the goal is reached, the student repeats the process with a new passage. One of the main purposes of Repeated Readings is to build fluency. Students are able to increase their fluency through repeatedly reading the same passage. The idea is that each time a reader reads a passage they become more familiar with it, so a reader should be able to read the passage with more fluency each time. In the process of Repeated Reading, speed is emphasized rather than accuracy because often students tend to read with less expression if they are worried about making reading errors. Therefore for the purpose of building fluency, speed rather than accuracy is emphasized in Repeated Reading. Roundy and Roundy (2009) concluded that the Repeated Reading program led to significant improvements in fluency and attitudes among diverse learners. Another purpose of Repeated Reading is to increase a student’s comprehension. Through the implementation of fluency programs students have been able to increase their fluency and in turn increase their reading comprehension (Griffith & Rasinski, 2004). As less attention is required for decoding, more attention becomes available for comprehension (Samuels, 1997). Thus, Repeated Reading builds fluency and enhances comprehension.

In my experience of teaching special education, I have witnessed students with many reading difficulties. I have worked with students who are just mastering the art of reading words and put very little effort into comprehending what they read. I have worked with students who are able to read with very little effort; however, they struggle to comprehend what they read. I decided to implement Repeated Readings into my classroom to see if it could not only increase student’s fluency but also their comprehension. I hypothesized there would be a positive correlation between the
implementation of Repeated Reading and fluency and comprehension results from the Fountas and Pinnell Benchmark Reading Assessment Kit (Fountas & Pinnell, 2008) as well as fluency and comprehension results from Qualitative Reading Inventory-5 (Leslie & S. Caldwell, 2011).

To test the hypothesis of the affects of fluency and comprehension, I decided to administer Repeated Reading to two of my students in my classroom during the Reading Enrichment block for 30 minutes over a four week period. The first week I assessed students’ fluency and comprehension by giving them the Fountas & Pinnell Benchmark assessment as well as the Qualitative Reading Inventory to find the students fluency and comprehension. The study sample consisted of two second grade boys; one of whom has Autism and one who has been diagnosed with a specific learning disability in reading, math and language arts. Both of these students received individualized instruction for reading from the special education teacher. Neither of these two boys are native English speaking students.

According to the Common Core Standards (2011) students should be able to read with enough fluency so they can accurately comprehend a text. For students to be successful they need to read with purpose and understanding. This can only happen when students are given the opportunity to read a variety of different texts and are given the opportunity to repeatedly read them to increase their fluency. Once students are able to read with fluently with expression and are able to comprehend the meaning of a passage they will be more likely to self-correct their reading errors. Through the implementation of Repeated Reading students should increase their oral reading fluency and enhance their comprehension.
Therefore incorporating specific reading techniques to improve reading fluency and the implementation of Repeated Reading during reading instruction time was the focus of this research study. These techniques were implemented over a period of five week study in order to determine whether their collective use would align with the recent research in the area of reading fluency and reading comprehension. The following chapter will present reviews of research studies which were focused on improving student’s fluency and comprehension through the use of Repeated Reading.
Key Terms:

Words Correct Per Minute:

Fluency: the ability to read with smoothness and accuracy.

Common Core Standards: the standards set for students to be ready for further schooling.

Expression: showing feeling or emotion through the use of one’s voice.
CHAPTER TWO

Literature Review

Fluency is considered to be a major component of the reading process. Unfortunately it is a skill that many readers lack. Often this causes students to become frustrated with and overwhelmed by the act of reading. Attaining reading fluency has been identified as one of the earliest stages of reading achievement. Since reading fluency deals with the mastery of text with automaticity and accuracy in word decoding and expression-prosody in oral reading it is appropriate to presume that fluency should be one of the first stages of reading to be mastered. However, research has suggested that the issue of reading fluency goes beyond the primary grades. “Does student’s fluency through the use of Repeated Reading increase student’s comprehension?”

This literature review consists of twelve articles covering issues related to reading fluency and ways to increase regular education and special education students’ fluency. Additionally, there are articles that address issues on how fluency affects comprehension. These articles are divided up into two different sub-categories. The first section contains four articles that explore fluency across different grade levels and in different populations of students and how repeated reading can affect and possibly improve a struggling reader’s fluency. The second section contains articles that discuss how fluency impacts reading comprehension.

Diversity and fluency

Fluency is a skill that unfortunately many readers lack. Often this causes students to become frustrated with and overwhelmed by the act of reading. Fluency is considered to be a major component of the reading process. According to Roundy and Roundy
fluency is the ability to read connected text rapidly, smoothly, effortlessly, and automatically with little attention to the mechanics of reading, such as decoding. If children do not acquire the essentials of reading such as fluency, it places them at a significant disadvantage in their future academic pursuits. This study examines the effects of repeated readings on student fluency. The study’s overarching question is: What effect do increases in repeated reading have on reading fluency among middle school students from diverse backgrounds? In this study Roundy and Roundy (2009) examined how the instructional strategy of repeated reading can potentially help teachers to increase fluency among struggling readers.

The purpose of this study not only examined whether there is a link between repeated readings and fluency and middle school students, but also whether or not this link holds for students from diverse backgrounds. The research method for this study was quantitative. The independent variable was students’ repeated readings. The dependent variable was performance on repeated readings. The intervention was designed to last five weeks. The sample in this study were 110 seventh grade middle-school students. The site was an urban middle school in the southeastern, United States. The sample was 44% white, 26% Hispanic, 24% Black, 3% Multiracial, and 2% Asian/Pacific Islander. Over half of the sampled students (55%) were classified as economically disadvantaged. The sample was a representative of several different levels of academic achievement. There were students who were classified as gifted, honors, regular and intensive. There were students who were reading below grade level, at grade level and above grade level. The students in this study were in 7th grade language arts.
classes that had an average of twenty-three students. The language arts classes lasted for fifty minute periods and integrated reading, writing and grammar.

Data were obtained from student interviews, a student reading survey, teacher observations, and reflections that included students’ behavior, attitudes toward reading and reactions to repeated reading experiences. Pre-tests, post-tests, student (individual and class) fluency charts and observations of the repeated reading group sessions, which were audio taped and transcribed, were also used.

Reading surveys were first administered to measure students’ attitudes and reactions to reading. Next, a word per minute pre-test was administered to students to establish a baseline record of the students’ abilities and reading levels. Teacher observations and reflections were also collected. Then the repeated reading method was introduced to each student in the study. Once students began to fully understand the method, the repeated reading sessions began. Students used a basal reader for the timed readings. The reading basal consisted of both fiction and non-fiction stories. This basal was chosen because students had no prior exposure to the readings. The repeated reading sessions occurred three times a week for five weeks. During the repeated reading sessions, students’ individually read stories ranging from 4-6 pages; there was no cooperative learning during this study. Students began their sessions with the first story in the basal series and worked their way through it. They then read, rehearsed, and re-read each story until they demonstrated a score of 120 words per minute. After the word per minute criterion was met, students moved on to the next story. Students each recorded and calculated their results on a bar graph to show their progress. The time for each reading session varied however twenty minutes was allotted for each session. After
each story was completed students were administered a words per minute test. At the end of the five weeks all students were administered a final word per minute to determine the fluency and progress they had made during this study. At the conclusion of the repeated reading experiment, post-reading surveys, post-student interviews and teacher observations and reflections were conducted.

Results from this study indicated that the repeated reading program was effective. At the beginning of the study a number of students possessed a negative attitude towards both repeated reading and reading in general. As the study went on, results demonstrated there to be an increase in favorable comments towards reading and repeated readings. When students’ fluency charts were reviewed on average, there was a noticeable increase in reading fluency. Between weeks one and five, the average words per minute (above the 120 wpm target threshold) of the students sampled nearly doubled. On average, student’s increase their words per minute above the 120 words per minute goal and students words per minute goals continued to increase each week. Additionally, after the third week of the study many students went from requiring the maximum amount of time to complete a session, twenty minutes to needing only twelve minutes. As fluency scores increased, both behavior and attitude continued to change. In addition to students words per minute increasing so did their confidence in reading and their comprehension. As fluency increased, there was considerable evidence that improvements in fluency were positively related to improve reading comprehension. Overall, from the initial reading to the last reading in week five, there was on average, a five word per minute increase. At the end of the study students seemed less frustrated and more motivated about repeated reading and reading in general. Finally, the researchers concluded that the repeated
reading program led to significant improvements in fluency and attitudes among the diverse learners of this study. Repeated reading can provide dis-fluent readers with increased confidence about their reading skills as they watch their reading rate increase. This increase in reading fluency can provide students with reading disabilities hope for future academic success.

David D. Paige (2006) examined the effects of repeated reading using above grade level passages on students with disabilities reading rate as measured in words per minute (wpm) and reading miscues. The purpose of this study was to investigate the effect of repeated reading on the reading rate of sixth grade students with reading disabilities using above grade level narrative text. The research method for this study was quantitative. The independent variable was the implementation of the repeated reading intervention. The dependent variable was students reading rate measured in words per minute and reading miscues. The intervention was designed to be implemented daily for six weeks.

The sample consisted of eleven African American students, seven participants were male and four were female. Ten of the students were in the sixth grade and one student was in the eighth grade. The mean chronological age of the group was 12-0 years and ranged from 11-3 to 13-8 years. The site was a suburban middle school in the southeastern United States. The school enrollment was primarily African American being 89% of the population. Eighteen percent of the population qualified for free and reduced lunch. Ten of the eleven students were diagnosed with a learning disability and one student was diagnosed as having a cognitive disability. Two of the participants received all academic
Six reading passages were prepared from the novel *Number of the Stars* (Lowry, 1989), one for each of the six weeks of the intervention. This text was above grade level for ten of the eleven study participants and was chosen based on the literature by Kuhn (2000) that suggests that passages above grade level may have a positive effect on reading rate when used in conjunction with repeated reading. Each passage was counted out to 100 words. Students each received a graph so they could record their words per minute after completing each reading. Each student had one graph for each week of the intervention. Pre- and post tests were completed to determine student’s instructional reading level. Both pre and post oral reading measures were collected using *Flynt-Cooter Reading Inventory for the Classroom (RIC)*, (Flynt & Cooter, 2004). From the pre- and post-test passages, a reading rate in words per minute was calculated.

Every Monday of each week, students received their 100 word passage. A teacher-assisted oral reading was performed by the researcher which consisted of the passage being read aloud while the student silently followed along with their copy of the text. If there were words that students were unsure of or unable to pronounce the researcher would tell or pronounce the word for the student. Students were then instructed to read the 100 word passage within one minute. Students’ daily words per minute progress were recorded on their individual graphs. After completing the reading students, were asked to select a goal in (wpm) to reach on Friday. The self-selected goal was then recorded on their graph for referral as the week progressed. Any words that students mispronounced or missed were reviewed with the researcher before the session.
was complete. On Tuesday through Friday the repeated reading procedure was repeated without the assisted reading.

Paige (2006) determined that repeated reading using above grade narrative reading passages was effective at improving the reading rate for sixth grade students with disabilities. Three of the eleven students did not show an increase in reading rate when measured by the pre-test post-test instrument. However, these three students showed increases in their wpm scores for each week of the weekly intervention. Repeated reading also appeared to be effective at reducing reading miscues as measured by daily recordings of miscues on reading passages. Paige found that an added bonus to this intervention was not only a student’s increase in reading rate but also motivation (2006). While the attribute of goal selection was not measured in this study, the affect was evident in participant responses on Fridays when students wanted to know their “score” on Friday, students wanted to know their “score”.

Peer-mediated instruction, which involves student teaching or coaching other students in specific skills has also shown to increase student’s self-esteem, social skills, on-task behavior and lower levels of misbehavior as well as increase students academic progress. Staubitz, Cartlege, Yurick and Lo (2005), evaluated the effects of repeated reading intervention on the oral reading fluency and comprehension using peer-mediated strategies with students identified with or at risk for Emotional or Behavioral Disabilities. The purpose of this study was to evaluate the effects of Repeated Reading as a sole reading intervention with students identified with or at risk for EBD, as well as to evaluate the effectiveness of peer-mediated strategies. The site was an urban elementary school in the Midwest. The school consisted of 148 students; 85% African American,
13% Caucasian, and 2% Hispanic, Native American or Asian. All students were eligible for free lunches. The sample consisted of six students who were identified as having reading difficulties. The sample consisted of five males and one female. Students were in the fourth and fifth grades. The dependent variables in this study were oral reading rate, accuracy and comprehension. The independent variable was the implementation of the intervention. Students received the letter-word identification, reading fluency, passage comprehension and word attack subtests from the Woodcock Johnson III prior to the Repeated Reading intervention and post-intervention (Woodcock et. al; 2001).

The baseline condition was sustained silent reading (SSR). Students were given ten minutes to silently read a passage of 180-200 words from a third grade-level book. They were then asked to read aloud to the teacher for one minute. Students were unaware they were being timed during the oral reading. After the one minute reading, students were asked to answer five comprehension questions in a cloze procedure.

For peer-mediated Repeated Reading groups, the teacher trained students in pairs over the course of three-20 minute sessions. Appropriate reading and listening skills as well as correction procedure were modeled and practiced during training. Students read 180-200 words for ten minutes during the peer-mediated Repeated Reading sessions. While one student read, the other student followed along and corrected miscues using a scripted correction procedure. Students read the passage until the ten minute period ended. Throughout the practice period, the teacher monitored the students while providing praise, stickers, and/or corrective feedback when appropriate. After practicing the passage for ten minutes, students read the passage to teachers for one minute. Students were told they were being timed and that they had three chances to improve
their score. The students charted the number of words read during their best performance at the end of every session. Once students reached the fluency criteria that were set; 145 WPM for fourth graders and 180 WPM for fifth graders, they were instructed to answer five comprehension questions. When students met the fluency criteria and all five comprehension questions were answered correctly, they advanced to the next grade-level passage. Occasionally, the teacher had to assume the partner role when students were absent from class or when there were imbalances in reading skills.

After the intervention was in place three generalization conditions were put into place. The first generalization condition implemented was covertly timed generalization (GEN); which was conducted once a week and was identical to the SSR condition except that a different third grade text was used. The second condition that was implemented was timed generalization (TGA), which was identical to the (GEN) condition except that during the assessment for the passage, students were told they were being timed as they read from the passage. And the third and final condition was timed and charted generalization (CGA) which was identical to TGA except that students charted their WPM score with an X on the same graphs where their intervention data were charted. At the end of the intervention students and parents were given a questionnaire to gather their opinions about the intervention and the procedures used.

Results of the Repeated Reading showed that all students increased their Words Per Minute scores as well as their accuracy during the Repeated Reading intervention. Students also answered greater comprehension questions correctly following the Repeated Reading condition than during the SSR condition. Students showed gains as a group on all four subtests of the Woodcock Johnson III from pre-test to post-test.
Students were very positive about the intervention. All students agreed that the intervention made reading more fun and that their participation in the program improved their reading.

This study used a peer-mediated component to discover the effects of Repeated Reading on the oral reading fluency and comprehension of fourth and fifth graders identified with or at risk for Emotional or Behavioral Disabilities. The findings from Staubitz, Cartledge, Yurick and Lo findings were consistent with others that have been reported (2005). All students improved their reading speed and accuracy during the Repeated Reading intervention. All students also improved their comprehension during the repeated reading intervention, which supports Samuels’ (1997) statement that as readers become more automatic, they can devote more attention to comprehension. During this intervention it was noted that seventeen out of the twenty intervention times, students were paired with the teacher. While paired with the teacher students were corrected on a higher percentage of their miscues and there were more repetitions of the passage when the teacher functioned as a partner. The outcome of this intervention suggests that for classroom application, there is a need for close teacher supervision.

This study conducted by Staubitz, et. al. (2005) supports peer-mediated approaches and Repeated Reading as an option to increase the fluency and comprehension skills of students with Emotional Behavioral Disabilities.

While students with Emotional Behavioral Disabilities struggle with fluency, so do students with learning disabilities. Debroah Hill Staudt (2009) conducted a study in which two fourth grade students who were identified as having a learning disability were exposed to intensive word study with the timed repeated reading of poetry. The
Pennsylvania site in this study, was an independent school for students in grades Kindergarten through twelfth grades who were diagnosed with learning disabilities. Students in this study had diagnoses of reading disabilities (52.5%), nonverbal learning disabilities (21.25%), Asperger’s Syndrome (18.75%), Attention Deficit Disorders (2.5%) and mixed diagnoses (5%). Students with reading disabilities received intensive instruction in phonemic awareness and phonics. Students’ improvement in word recognition skills did not naturally lead to an adequate level of reading fluency. Students with learning disabilities are those who are most likely to be dis-fluent readers (Chard, Vaughn, & Tyler 2002), and fluency is among the most difficult dimensions of reading to remediate (O’Connor, White, & Swanson, 2007). The sample in this study was two fourth grade students who were identified as having learning disabilities. While these two students received repeated reading practice they also received phonic and phonemic awareness instruction. Texts at students instructional level was used for repeated readings. Often the researcher would model the text, which has been shown to improve accuracy and reading expression for students with learning disabilities (Chard et. al, 2002). Comprehension activities were also incorporated in the repeated reading process. The researcher chose poems rather than informational passages because she wanted students to hear the rhythm of the words to help them gain a better sense of phrasing and expression in hope that they would begin to read more naturally rather than word by word. Rasinski (2000), reported that using poetry for repeated reading works well for all students, helping them to improve word recognition efficiency and to develop greater sensitivity to syntax. The researcher also chose poems because she felt that the poet’s word choice and word play offered many opportunities to address students’ weak
language skills as well as entertain students. Using poetry for timed repeated readings provided interesting words for students to study and learn in a way that remedies students’ weak language skills. The student’s first challenge of reading the poems was comprehending the poems. The students would review the poems with the researcher and then point out any unknown words. The researcher paid attention to morphology, vocabulary development, phonological awareness and orthography. The researcher chose words for word study by looking for words that have several aspects for study (multiple meanings), commonly used words that are used in content areas, words that the students had trouble decoding, or if a student continually had difficulty with a word in the repeated practice.

Every Monday, a new poem was introduced and students were recorded on how long it took them to read it. Every day for the rest of the week, the readings were timed and poems students practiced earlier in the week were reread and timed. Passages that were practiced earlier were regularly reread and discussed to strengthen their fluency and to review the vocabulary words they learned. Sometimes students would rewrite a poem in prose form so students could use a different passage for repeated reading that had a substantial number of the same words. This was designed to strengthen their reading fluency and provided good fluency practice for students along with a chance to compare the differences between poetry and prose. The word study continued in this format throughout the year as they worked on timed repeated reading. Students were encouraged to look for words they practiced in the study when they read independently in their classrooms. Poems were often reread and discussed to strengthen fluency and to review the vocabulary words they learned.
Both students showed great progress. One student read a third grade passage in the Qualitative Reading Inventory-3 at forty-eight words per minute in September and eighty words per minute on the same passage in May. The other student read the identical passage in the fall at twenty-nine words per minute and sixty-nine words per minute in the spring. Although both students continued to be slow readers, the gains they made in their reading fluency were strong enough to make an impact on their word recognition and reading comprehension skills. The best overall result of this research was that reading was no longer burdensome for students and their interest in reading grew. Overall, combining intensive word study with the repeated reading of poetry proved to be successful for improving reading fluency, word recognition and comprehension skills of students with learning disabilities while at the same time improving their understanding of how our language works.

While poetry for repeated reading can help increase fluency and comprehension in elementary students with learning disabilities and ultimately their interest in reading, it can be very difficult to increase interest in reading as well as fluency and comprehension of passages in high school students’ with learning disabilities. One problem with high school students who are very low readers is that they can not read passages beyond very basic reading levels because they do not possess word identification strategies, and they read at very slow rates (Pressley, 1998). This then hinders students from developing deeper comprehension levels, including higher vocabulary, because many of the passages written at a first and second grade reading level contain content or concepts that can be defined or understood from life experiences. The questions asked about the basic content of these passages could be answered without reading the passage because they tend to be
very predictable or common sense type of questions. Therefore these passages do not lead to higher levels of inferences. The International Reading Association (IRA) developed a position statement for teaching adolescents reading skills. The position statement reflected the need for instruction that builds fundamental literacy skills. There has been much research on the effectiveness of explicit instruction in basic literacy for primary children; however, there are been fewer studies that have documented the effectiveness of instruction in basic literacy skills for adolescents who are delayed readers.

Studies have suggested that repeated readings were most efficacious for helping students read more challenging texts or texts just above their instructional level (Kuhn & Stahl, 2003). Repeated silent reading has been shown to improve reading comprehension rates of secondary students with learning disabilities. The study was a quantitative study. The purpose of this study was to demonstrate the effectiveness of repeated readings paired with word boxes on reading fluency performance for a sample of high school students who had severe reading delays. The sample was three secondary level students with severe reading disabilities. All three students were determined to have disabilities during their elementary grades or earlier. These three students were receiving special education services for reading and language arts and participating in a work-study program. Two of the three students were identified with learning disabilities in reading and participated in the regular education classroom. One student was determined to be cognitively disabled. All three students received special education services for reading. Participants reading levels ranged from first grade to second grade reading level.

Independent variables in this study were repeated readings and sound/word box
intervention. Repeated readings paired with word boxes were directly implemented individually to students. The instructor to student direct intervention sessions lasted fifteen to twenty-five minutes each for approximately five days a week. During the beginning of the first session students were presented with curriculum-based reading passage probes that were written at their instructional reading level, which is one level beyond their independent reading level. Students were given one minute to read the passage. The researcher recorded all words read incorrectly or omitted then calculated words read correctly per minute. The researcher printed all words read incorrectly or omitted on index cards, then taught the words read incorrectly using word boxes. The word box intervention consisted of a dry-erase board with a drawn rectangle divided into sections according to the number of sounds in a word. Word cards were placed below the divided sections of the rectangle. An index card with the printed word on it was placed above the rectangle. The printed index cards were placed one at a time above the divided dry erase board. The instructor read a word printed on an index card and then modeled the word box procedure by slowly articulating the sounds of the word and moving the letters into the respective divided sections of the rectangle. The instructor provided feedback and correction to students as needed. At the end of the session, after the completion of word box lesson, the instructor presented the same grade level passage and the student was given one minute to re-read the passage. The instructor recorded incorrect words and calculated words read correctly per minute. The following sessions, a different passage was presented and the same procedures as previously described were implemented.
The findings of this study suggest that repeated readings paired with word boxes phonics technique showed promise for helping students increase their reading fluency.

Devault and Joseph (2004), stated that all students made considerable gains in the number of words read correctly per minute for initial to repeated reading of passages. As sessions progressed, students appeared to increase the number of words read correctly per minute during initial readings of passages; however students’ accuracy was inconsistent across sessions. By the end of the study, all students were reading passages two grade levels beyond their independent reading level. The structure of the word boxes helped students make letter sound correspondences in words. Students therefore became aware of the connection between phonological and orthographic features of words. Techniques such as repeated readings and word boxes which are typically implemented and taught to primary age students proved to be effective for helping high school students with severe reading delays make progress in fluency and letter-sound knowledge.

Repeated readings help to improve fluency in students with disabilities as well as students from diverse backgrounds. This is very important since often times it is believed that once students are out of the primary grades they will continue to read at the level in which they currently read. With the help of repeated reading, secondary aged students and primary grade students can increase their fluency.

**Fluency and the primary grades**

Reading fluency is one of the key elements in successful reading programs. Attaining reading fluency has been identified as one of the earliest stages of reading achievement. Since reading fluency deals with the mastery of text with automaticity and accuracy in word decoding and expression-prosody in oral reading, it is appropriate to
THE CONNECTION BETWEEN FLUENCY AND COMPREHENSION

presume that fluency should be one of the first stages of reading to be mastered (Rasinski, Rikli and Johnston 2009). However, research has suggested that the issue of reading fluency goes beyond the primary grades. Rasinski, et. al. (2009) have found that when working with struggling readers in elementary school, who have been referred for Title 1 services, the lack of reading fluency appeared to be the area of greatest impairment in reading. Rasinski, et. al. (2009) determined that fluency, as measured by reading rate, was significantly correlated with reading comprehension among ninth grade students and a significant number of ninth graders read at rates that were well below that expected of eighth graders. Rasinski indicated that reading fluency has a second component which is known as prosody that often gets overlooked. Prosody has been defined as the ability to make oral reading sound like spoken language.

The purpose of this study was to explore the relationship between reading comprehension and reading fluency, as measured by prosody, in grades 3, 5, and 7. Rasinski, et. al. (2009) assumed that as students progressed through the grades, the overall relationship between fluency and comprehension would continue to be significant but would not weaken. The research questions that guided the study were: 1) To what extent is prosodic reading and a measure of prosodic reading associated with over-all reading proficiency as measured by a standardized test of reading comprehension? 2) What is the magnitude of the relationship between measures of prosodic reading fluency assessment and reading comprehension at grades 3, 5, and 7; and 3) To what extent does the magnitude of the relationship between prosodic reading fluency and reading comprehension change as students’ progress through the grades? This study was quantitative. The site for the study was a small, urban school district of approximately
6,100 students with 10 elementary buildings (K-6), one middle school and one high school. Average percentile scores for third, fifth and seventh grade students on standardized reading achievement tests were ranged between the 58th and 71st percentile in the past two academic years. All students in grades 3, 5, and 7 were administered the Stanford Achievement Test (Ninth edition, 1977, San Antonio, TX); which is a norm-referenced silent reading assessment administered district wide at those grades. The comprehension subtest, consisted of both narrative and expository passages and was used as the measure for comprehension. Data collection and analysis in this study scored oral reading according to fluency and prosody. Digitally recorded oral reading samples on grade levels from each student in grades 3, 5, and 7 were also collected. These recordings were scored for prosody by using an established system designed by The Educational Service Unit. The recordings were scored based on phrasing and expression, accuracy and smoothness and pacing. In order to score a 4 on Phrasing and Expression a student would need to read with expression and enthusiasm throughout the text and sound like natural language throughout the text. To score a 4 on Accuracy and Smoothness the students would have had generally smooth and accurate reading with a few decoding breaks; word and structure difficulties were resolved quickly through self-correction. For a score of 4 on Pacing the students would have had to have appropriate rate throughout reading, as well as having their pace enhance the meaning of the text.

Students read a narrative passage that was taken from a published trade book that matched their grade level and was a minimum of 200 words in length. Reading specialists for the school system verified that the quality of the passages was appropriate for the students’ grade levels. One passage was selected for students in seventh grade,
while two passages were selected for the elementary students. Students were provided with the opportunity to silently read the passage and then they were asked to read the passage orally using their normal and expressive voices. Students were also provided with ten minutes at the computer to complete a one-minute recording reading. The first minute of the oral reading for each student was electronically recorded. Reading specialists and teachers from Westside schools were trained to listen to the recordings of students’ oral reading and assign a score for each of the prosodic dimensions of fluency traits that were created by the researchers. Two raters independently scored each recorded sample based on the three fluency traits of expression, smoothness and pace. The total test score for each rating could range from 3-12. Raw scores from the fluency scores were then correlated with the comprehension subtest scores.

Researchers determined that in all three grade levels prosodic reading was significantly correlated with silent reading comprehension. Students who read with better prosody in oral reading were likely to have higher levels of comprehension when reading silently. Also, at all three grade levels a significant and substantial portion of the difference in silent reading comprehension was shared with or could be recognized in reading fluency. A drop in fluency was noticed from grades 5 to 7. The researchers determined that prosody in reading regressed and that there is a wider increase in prosodic reading as students’ progress through the middle grades.

Musti-Rao, Hawkins, and Barkley (2009), evaluated the effects of a repeated reading intervention to determine what degree of integrity classroom teachers can implement repeated readings in their classroom. The purpose of this study was to determine the effects of peer-mediated repeated reading on the oral fluency of urban
fourth-grade students. Students’ performance on unpracticed passages were recorded on a weekly basis to determine whether gains in reading fluency during repeated reading would generalize to unfamiliar reading.

The site was an urban charter school in the Midwest. The school had an enrollment of 605 students, 96% were African American, 1.3% Caucasian, and .3% Hispanic and 2.4% multicultural. Participants were twelve African American students ranging in age from nine to twelve years from a classroom of 32 fourth-grade students that were identified as target students. Of these target students, five were boys, and seven were girls. Six students were identified as having a disability and received special education services. In all, three students had repeated a grade in school, while one student repeated two grades in school. Students were selected based on their results from a screener for at-risk markers in reading on the Dynamic Indicators of Basic Early Literacy Skills (DIBELS, Good & Kaminski, 2002) and teacher nominations.

The research method of this study was quantitative. The independent variable was the implementation of the repeated reading intervention. The dependent variable was students’ correct words per minute. Students were also administered fourth-grade level passages from DIBELS oral reading fluency (DORF, Good & Kaminski, 2002). This data served as progress-monitoring data for students throughout the study.

Researchers used a multiple-baseline-across-participants design to evaluate the effects of repeated reading sessions on the oral reading fluency of students. A three-tiered multiple baseline with two conditions was in effect for this study. During the baseline condition students were engaged in silent reading. Students choose a book from their classroom or library and read for 30 minutes.
At the end of the 30 minutes, researchers administered a DORF progress-monitoring passage to students individually. Target students were assessed once a week and the non-target students were assessed once per month. Another part of the intervention was peer-mediated repeated readings. Before peer-mediated repeated readings began, students were trained at one time during two, fifteen minute sessions. The first training consisted of an overview of the entire process followed by modeling of the correction procedure and the role of the listener and the reader. The second training session consisted of independent student practice with feedback. Next, students entered the paired repeated reading condition.

Prior to the whole classroom repeated reading procedures, the researcher explained the intervention session format to the fourth grade teacher. The teacher was given a script that included various steps involved and specific instructions to read aloud to the class. The researcher modeled the steps by conducting the first classroom session. The teacher then administered the repeated reading sessions independently with periodic feedback and coaching from the researchers.

Students were introduced to repeated reading intervention in small groups. Students who were at a second and third grade reading level were paired with two of their classmates who were reading at grade level. The students who were reading below grade level did not receive reciprocal reading. The rest of the groups were introduced to the repeated reading condition in a staggered manner approximately four weeks apart. All students were assigned a 120-150 word passage from their grade level language arts books. The daily goal for students reading at grade level was set similar to the end-of the year goal as indicated by DIBELS. Students who were below grade in reading were given
passages at second and third grade reading levels. Each student had a repeated reading folder that included a copy of the reading passage with the word count at the end of each line, good tutor card, correction card and a reading log. The good tutor card was part of a reinforcement component in which students earned stamps for good tutoring behaviors. Students recorded the number of stamps they received in each session in their reading logs. Students sat across from one another and took turns reading each paragraph of a passage for ten minutes. The students were instructed to reread the passage for the ten minute duration. At the end of the ten minute repeated readings, students were asked to individually read the practiced passage for one minute. Then, the student recorded the number of words read correctly in their reading log. If students met the goal of the words per minute, on the third day they were given a tangible reward.

Musti-Rao, et. al. (2009) determined that the intervention had a moderate to large effect on students’ oral reading fluency. Prior to the intervention all twelve students showed at-risk markers for reading. At the end of the study, eight students continued to show at-risk markers, two showed some risk and one showed low risk for reading failure. Three students who were reading below grade level advanced one grade level in reading. During baseline, all students with the exception of two students showed stable responding with no trends. With the introduction of the repeated reading intervention, there was an increase in the fluency rates of all students.

Along with fluency often readers struggle to comprehend a text. Studies have shown that repeated reading can help increase a student’s fluency. Could repeated reading and other fluency practices help increase a student’s comprehension as well as fluency?
**Reading fluency and comprehension**

Huang, R.B. Nelson and D. Nelson (2008) conducted research based tutoring which used repeated reading over a ten week period to determine whether students would increase their vocabulary, fluency and comprehension. The purpose of this study was to evaluate the effects of a fluency-based, intervention that combined multiple effective practices into a simple and systematic reading fluency instructional program.

The student sample was from a K-12 charter school in the western United States. The sample consisted of four second grade students. The students were chosen because they failed to respond to the regular education classroom program and had reading difficulties. Each student was paired with a high school student who volunteered to be a reading tutor. One student’s parent and another’s older sibling were also trained to do the intervention. The intervention was implemented over a ten week period during the course of the school year. The repeated reading intervention was explicitly taught to high school tutors as well as the parent and older sibling’s tutors through demonstration. Books that were used were chosen by the tutees’ teachers based on their knowledge of student interest and reading level.

The research method of this study was quantitative. The independent variable was the implementation of the repeated reading intervention. The dependent variable consisted of students word count per minute scores as well as students’ reading levels after completing the intervention.

Prior to beginning the intervention, initial reading levels for students were established by using a pre-test with the Flynt- Cooter Reading Inventory (1993), Words
correct per minute (WCPM) were calculated from passages. Also, the most common 100 high frequency words per grade level were used as a measure of progress.

The procedure of the intervention was the repeated reading intervention was taught to high school tutors as well as the parent and older sibling tutors by the researcher through demonstration using materials provided by the regular education teacher. Books that students used for the intervention were chosen by their classroom teacher and were chosen based on the student’s interests and reading level.

The lessons began when the tutor modeled appropriate fluency for the tutee by reading three to five pages of the book. The tutee would then read the exact same passage with prompting from the tutor. Prompting included encouraging the use of strategies to identify words, and giving the student the word read correctly if the student read a word incorrectly. The tutor wrote down words that the tutee missed for review after the first reading. If more than ten words were missed in a passage, the passage was considered too difficult and another book was identified in consultation with the teacher. After the first reading, the misread words were identified in random order until the tutor felt the tutee had memorized the words. The tutee then read the passage for a second time, with the process being repeated while the tutor noted missed words for a second time. After the tutor and the tutee went over the misread words a second time, the tutor asked five comprehension questions that he/she had written during the three repeated readings. If the student answered less than three correctly, the passage was again believed to be too difficult and a new book was found. After each session, the tutor made a copy of the worksheet to send home with the student, as well as the book, for the same process to occur at home. The tutors at home noted their own missed word list.
Student word correct per minute (WCPM) scores and Flynt-Cooter Reading Inventory posttest reading levels were collected after students completed the ten week intervention. Results were positive and Huang, R.B. Nelson and D. Nelson determined that students made increases in their words correct per minute (WCPM). They also increased their reading level by one grade level in both the oral accuracy and comprehension.

O’Connor, White and Swanson (2007) hypothesized that repeated reading would have greater impact on improvements in rate and word recognition, and that continuous reading would have more impact on understanding word meanings and comprehension. The researchers expected younger poor readers to make greater gains in reading rate than older students whose reading disabilities were more ingrained and diverse. The following questions were asked by researchers: how does repeated reading compare with continuous reading for improving the reading rate and overall reading outcomes of struggling readers; will fifteen minutes of practice reading aloud, three days a week for fourteen weeks, improve growth in reading rate, is either method better than the other for improving reading rate, do poor readers in second and fourth grade respond differently to practice condition, and what is the effect of practice condition on growth in word identification, vocabulary, and reading comprehension. This study consisted of two experimental intervention groups and one control group.

Researchers screened students in eight classes to identify six students per class who met eligibility criteria for struggling readers. To meet these criteria, second graders read twelve to forty-five words per minute on grade level passages and fourth graders read 20 to 80 words per minute on a grade level passage. To be considered a struggling
reader, students also needed to score greater than 69 (standardized score) on the Peabody Picture Vocabulary Test-III; (Dunn & Dunn, 1997). This criterion was established to ensure that students could read enough words to benefit from practice reading aloud and would have English language ability high enough to benefit from reading text in English. Of the students who were selected to participate, 50% were Caucasian, 29% Hispanic, 18% African American and 3% other. Of the 37 students who were considered to be struggling readers who continued to the end of the study sixteen were in second grade and twenty-one were in fourth grade. Sixteen of these students were eligible for special education with a learning disability. Fourteen of these students were in the fourth grade and one was in the second grade. Seven students who met the criteria selection spoke English as their second language.

The research method of this study was quantitative. The independent variable was the implementation of the intervention groups. The dependent variables consisted of students’ reading level, accuracy, rate and comprehension on passages after the fourteen week intervention.

This study consisted of two interventions that were conducted one-on-one. Each intervention group practiced reading aloud under repeated reading or continuous reading conditions. Students in the intervention received fifteen minutes of practice reading aloud to a trained adult listener three times a week for fourteen weeks, using either repeated reading or continuous reading. In repeated reading students read each page of a text three times for a total of fifteen minutes. In continuous reading students read more pages during the fifteen minutes for the same book as the repeated readers but without repeating pages. The researchers selected reading materials based on students’
instructional reading level. The students in the control group received no intervention from the researchers.

Researchers used three forms of reading measures to determine progress in the intervention. The test of receptive language (PPVT-III) was used to assess changes in vocabulary from pre-test to post-test. The Woodcock Reading Mastery Tests-NU (WRMT-NU, Woodcock, 1998), Word Identification subtest was used to determine student’s ability to identify words in isolation, the Word Attack subtest was used to determine student’s phonemic awareness and the Passage Comprehension subtest was used to measure comprehension. The Gray Oral Reading Test 4 GORT4 (Wiederholt & Bryant, 2001) was also used to assess students’ reading accuracy, rate and comprehension on passages of 50 to 200 words in length. Also, the Analytic Reading Inventory (ARI, Woods & Moe, 1999) was used to measure reading level and words per minute to determine their fluency on a passage.

Researchers determined that all four groups improved in overall levels of performance during the fourteen weeks. As predicted, the average readers yielded higher performance levels at the end of the study than struggling readers. Researchers determined that students across grade levels grew at similar rates when given two practice conditions. No significant differences were determined between students who practiced repeated reading or continuous reading on either measure of reading rate.

Students who struggle with fluency often struggle with comprehension as well because it takes them so long to decode words that they lose the meaning of the text they have read. Other strategies that can help increase fluency are non-repetitive strategies such as echo reading, cloze reading and unison reading.
Homan, Klesius and Hite (1993) found that while many researchers have studied the effects of repeated reading on fluency and comprehension, few have researched whether other strategies such as non-repetitive readings would have the same effect on fluency and comprehension as repeated readings. Homan, et. al. (1993), stated that the advantage of non-repetitive reading strategies over repeated readings were that students’ do not repeat the text, therefore taking less time to implement. Also, because students only read a selection no more than one time, they are able to cover a wider range of literature and genres which in turn exposes students to a larger vocabulary and background knowledge. The purpose of this study was to compare the effectiveness of repeated readings to assisted non-repetitive oral reading strategies with sixth grade Chapter One students. The research questions that guided the research were: 1) Do the instructional methods of repeated reading and assisted non-repetitive reading have an affect on sixth-grade Chapter One students’ reading performance? 2) Is the effect of repeated reading instruction significantly greater than that of assisted non-repetitive reading methods on the reading performance on sixth-grade Chapter One students? The research method for this study was quantitative. The independent variable was the implementation of the two control groups; one using repeated reading and the other using non-repetitive strategies. The dependent variable was students’ comprehension, words per minute and word recognition scores after completing the interventions. The two interventions, repeated reading and assisted non-repetitive reading, were implemented by three teachers three times a week for twenty minute sessions for a total of seven weeks. Participants in this study included twenty-six below grade level readers who were receiving Chapter One services in two sixth-grade centers in a large metropolitan area.
Students qualified for Chapter One services by scoring in the bottom thirty percent on the combined vocabulary and comprehension scores on the Comprehensive Test of Basic Skills (1985). Participants were reading at a high fourth or beginning fifth grade reading level. Students in three teachers’ classrooms were randomly assigned to one of the two treatments.

Data were obtained from both pre-and post-tests from six passages selected from an informal reading basal. A story retelling scoring form based on the story structure was prepared for each passage. Prior to beginning the treatment, a pre-test was given to determine student’s passage difficulty. Readings and story retellings of the passages were digitally recorded. Following the pre-test, researchers listened to the recorded passages and counted word omissions, substitutions, insertions and errors for each student. To determine students’ word recognition accuracy researchers calculated when two or more words were repeated without correction of a previous error, the repetition was considered an error. Errors were not counted for hesitations, proper name mispronunciations, and repetition of a word. Comprehension performance was based on unprompted story retellings. A total score of 100 points could be earned for each story retelling. Points were earned for the inclusion of story elements such as main characters, story setting, problem, main events and sequence of events, and resolution of the problem. Students words per minute were also collected initially while students read and was subsequently verified when the recordings of readings were replayed.

Students who were in the assisted non-repetitive reading group; would use echo reading, unison reading and cloze reading strategies rather than repeat a passage they had already read. Students read passages from a fifth grade reading basal as well as poetry.
The three non-repetitive reading strategies were rotated on a daily basis so that students participated in each strategy during the week.

Students in the repeated reading group were paired with another student. Students would repeatedly read a selection from a text while teachers supervised closely. Each student was directed to read the same passage four times. Peers were directed not to give assistance when the reader could not pronounce a word; rather, they were encouraged to sound out the word or skip it.

Researchers determined that both repeated reading and assisted non-repetitive reading methods improved comprehension among sixth-grade Chapter One students who received instruction of seven weeks. There were no significant differences between repeated reading and assisted non-repetitive reading on any of the three variables. The results of this study demonstrate comparable benefits of using assisted non-repetitive instructional strategies and repeated reading to increase fluency and comprehension. Homan, et. al. (1993) suggest that when implementing repeated reading with older students to include predictable pattern stories or poetry. While the repeated reading of expository material is kept to a minimum; it has been shown to be beneficial for recall at the same time as the redundancy of rereading may help students derive word meanings from the context.

Repeated reading and assisted non-repetitive reading strategies have proven to help increase reading fluency and comprehension; however another area that can be targeted to help improve reading comprehension is vocabulary knowledge. Researchers have identified a strong relationship between vocabulary and comprehension (NRP, 2000). As students’ vocabulary knowledge increases, so does their capability to construct
meaning from text. Students with reading deficits at the secondary level may take much longer than peers to accurately decode text, resulting in fluency disorders (Wexler, Vaughn, Edmonds & Reutebuch, 2008). Difficulties with reading fluency and comprehension are compounded at the high school level by the increasing amount of reading material that students are expected to master across content areas (Swanson & Hoskyn, 2001). This study evaluated the effects of repeated reading with error correction on the reading performance of struggling high school readers. This study implemented repeated reading differently than most. Rather than have students reread a brief passage in their entirety three or four times or repeatedly read from a passage in one minute segments, students read longer reading passages of 400 words twice. The purpose of this study was to examine the effects of adding vocabulary previewing to repeated reading procedures to increase the effects on comprehension. The authors listed two specific research questions: Does repeated reading lead to improvements in reading fluency, comprehension and oral reading comprehension rate for high school students reading below grade level? Does the addition of a vocabulary previewing component to repeated reading intervention procedures lead to greater gains in fluency, comprehension and comprehension rate? This study was quantitative.

This study had three dependent variables. The first was students’ oral reading fluency, defined by the number of words read correctly per minute. Second was reading comprehension level, defined as the percentage of comprehension questions answered correctly. Lastly oral reading comprehension rate served as the final dependent variable. Reading comprehension rate was defined as the percentage of comprehension questions answered correctly divided by the total number of seconds taken to read the passage
multiplied by sixty. The independent variable was the implementation of the three condition groups.

The sample consisted of six students, from an urban high school in the Midwestern United States. The school served 976 students in grades 9-12 with 43.10% of the student population qualifying for free or reduced lunch. Approximately 72% of the student population was Black, 24% White, 3% multiracial and 1% Hispanic. Of these six students four of them were female and two of them were male. Participants were in grades 10 and 11 but were reading between the fourth and eighth grade levels. All participants received special education services with each meeting the criteria for Specific Learning Disability in reading. Students were eligible to participate in this study if they were reading at one grade level below their current placement.

To determine instructional level, students were asked to read three passages from a basal series that was 400 words each at different grade levels, starting with their current grade level and moving down grade levels until their instructional level was found. Instructional level was defined as the highest level at which the student read between 70 and 100 words correct per minute with fewer than seven errors. Passages were followed by ten multiple choice comprehension questions. Five of the questions targeted factual knowledge and five targeted inferential knowledge. For the repeated reading and vocabulary preview intervention group, ten target vocabulary words were selected.

Each student was repeatedly exposed to three conditions: control, repeated reading, and repeated reading with vocabulary previewing. During each session the researcher or special education teacher worked one on one with students. Sessions were held three to five days a week and lasted between ten to twenty minutes. In the control
condition, students were presented with a copy of a reading passage and were asked to read it aloud at their normal reading pace. As students read, the teacher or researcher recorded the words read correctly during the first minute. The total time required for students to read the passage was also recorded. Following the reading of the passage students were asked ten multiple choice comprehension questions. In the repeated reading condition, students were given a copy of a reading passage and asked to read aloud at their normal pace. As students read, the researcher or teacher marked misread words. After the students finished reading the entire passage, the researcher or teacher wrote the misread words on index cards. The index cards were then presented to the student’s one at a time, and students were asked to read the words. The index cards were repeated until each word was read correctly three times. After this error correction procedure, students were instructed to read the passage aloud again. During this reading, the numbers of words read correctly during the first minute were recorded. The teacher or researcher continued to time reading until students finished the entire passage, and the time was recorded to calculate reading comprehension rate. After reading the passage aloud, students were asked to answer comprehension questions. In repeated reading and vocabulary previewing, students were first presented with index cards of key vocabulary words from a reading passage. Students read through the words and definitions on their own. Then, the researcher or teacher presented the vocabulary words to the student one at a time and asked students to read each word aloud and provide the definition. After students correctly defined each of the vocabulary words three times, the session followed the same procedures used in the repeated reading condition.
Researchers determined that repeated reading with error correction procedures can lead to increases in the reading performance of struggling high school readers. Adding a vocabulary previewing component may enhance positive effects of repeated reading intervention. This research showed that participants had higher fluency and comprehension and oral reading comprehension rates in the repeated reading condition than the control condition. In this study repeated reading led to increases in reading fluency, comprehension and oral reading comprehension for practiced passages as compared to a no intervention control for struggling high school readers who have been identified as having specific learning disabilities. All students showed fluency levels at the mastery level, greater than 100 at least once in the intervention and students comprehension increased the equivalent of a letter grade or more in the interventions compared to the control condition. The addition of vocabulary previewing activities showed students to have higher oral reading fluency than the repeated reading intervention alone. The effects of the two interventions on comprehension remained unclear.

Hawkins, Hale, Sheeley and Ling, found that many high school teachers do not view themselves responsible for teaching basic reading skills and therefore as a result, high school students may not receive the reading instruction and intervention that they require (2011). Similarly to high school students with reading difficulty are students who have emotional and behavior disorders (EBD). Many teachers may assume that students with EBD cannot be taught academic skills until their behavior problems are managed. According to many researchers this assumption has largely guided the educational programming of students with EBD; leading teachers to focus minimally on
academic skills and the majority on student behaviors (Gable, Hendrickson, Tonelson & Van Acker, 2002; Levy & Chard, 2001; Wehby, Lane & Falk, 2003). A very sad and all too true fact is that when compared to students with and without disabilities, students with EBD are least likely to be successful in school. Students with EBD seem particularly vulnerable to reading difficulties (Coleman & Vaughn, 2000). This study examined the effects of repeated reading with systematic error correction and performance feedback on the reading fluency and comprehension. The study’s overarching research questions were: 1) What are the combined effects of systematic error correction, performance feedback, and repeated readings on the reading fluency and comprehension (literal and inferential) of students with EBD? 2) What are the effects of this repeated reading package plus prediction on the reading fluency and comprehension of middle school students with EBD? 3) What are the students’ opinions of the repeated readings intervention? The purpose of this study was to expand repeated reading research to include middle school students with behavior problems. This research method for this study was quantitative. The independent variable was the repeated reading intervention. The dependent variables were the number of words read correct per minute, number of errors per minute, and number of literal and inferential comprehension questions answered correctly. The site was a middle school in the southern United States. The sample consisted of three boys and one girl, ages twelve to fifteen, attending a self-contained day treatment classroom. Two of the boys who had EBD were in the sixth grade and the remaining boy and girl were diagnosed with learning disabilities and were in the seventh grade. Regardless of their special education diagnosis, all students were receiving treatment for behavior problems that required their removal from their regular
education classroom placements. The students participating in this study received intervention in a self-contained classroom for three hours a day, three days a week for eleven weeks.

Repeated reading passages were selected from a basal reader at each student’s independent reading level as indicated on the Analytical Reading Inventory (Woods & Moe, 2003) prior to beginning the intervention. If students’ reading passages contained pictures, the stories were retyped from the basal to eliminate picture clues. One student was provided passages at a first grade reading level well the other three students received reading passages at the fourth grade reading level. For each passage, researchers developed four literal and four inferential comprehension questions. Stories were randomly assigned to each condition of the experiment.

This study consisted of three experimental conditions: baseline, repeated reading and repeated reading plus prediction. The first condition of this study was baseline in which the researcher presented a reading passage and prompted the student to read the passage orally. As the student read, the researcher recorded each word either as correct or as an error for one minute. The student was prompted to continue reading the passage; however words correct or errors were not recorded after the one minute. After the student read the passage, the researcher administered an eight-item comprehension test, recorded the student’s answers and recorded the number of literal and inferential comprehension questions answered correctly. After the student completed the comprehension test, the researcher provided the student with immediate feedback on the accuracy of each response. The second condition in this study was repeated readings. The repeated reading condition included systematic error correction and performance
feedback. The repeated reading condition was much like the baseline condition in that the student was prompted to read the passage and while the student read the passage the researcher recorded each word read correctly or incorrect. Each time the student produced a reading error, the researcher read the word correctly, prompted the student to repeat and provided praise if the student was correct. After reading the passage, the researcher reviewed each reading error by pointing to the word and asking students’ to tell them the word, if the student responded correctly, the researcher provided the student with praise. After this procedure, the student was told that they would be timed to see how many words he or she could read in one minute. After the one minute timed reading, the researcher counted the number of words read correctly and reported the number to the student. For the second reading the researcher encouraged the student to beat their first words per minute score. When the student exceeded the number of words read per minute on the second timed reading, they received praise. If the reading rate did not improve, the researcher encouraged the student to do better next time. The comprehension check was administered after the second timed reading using the same procedure as in baseline. The third condition was repeated readings plus prediction. The researcher presented the reading passage and asked the student to read the title and predict what the story would be about. After making a prediction the student was asked to read the first two sentences and to modify his or her prediction based on what they read. After the second prediction, the student read through the whole passage. When the student finished reading, the researcher and student discussed briefly how closely the student’s predictions matched the events of the story. Following the discussion, the student read the passage as described in the previous repeated reading condition. One
week after data collection, a researcher interviewed the students to determine their opinions of the intervention procedures used in this study. They were asked the following questions: “How do you think this study has affected your reading performance?” “What did you like about doing repeated readings and answering questions?” “What did you dislike about it?” Alber-Morgan, Ramp, Anderson and Martin (2007), found that repeated readings had a significant effect on increased reading fluency for all four students who participated in this study. All four students also showed a decrease in their reading errors, especially during the prediction phase. Over time, all four students showed more consistent responding to literal and inferential comprehension questions. Researchers found that specifically repeated readings had an immediate effect on literal comprehension, but a delayed effect on inferential comprehension. Students stated that they enjoyed this intervention; all four indicated enjoying receiving the one-to-one attention and assistance during this intervention. During this study, students were typically compliant during the data collection sessions and rarely exhibited any disruptive behaviors.

The following chapter will explain the implementation of the study as well as participants, data collection, procedures, and summary. The implementation of any fluency program had positive effects on students’ fluency and comprehension. Repeated Reading have been found to increase fluency and comprehension of students who struggle with reading. Deborah Hill Staudt (2009) found that by using poems for repeated readings, with intensive word study as well as corrective feedback, Repeated Reading helped increase students with learning disabilities reading fluency and comprehension. Devault and Joseph (2004) as well as Hawkins, Hale, Sheeley and Ling
(2010) found that Repeated Reading coupled with word boxes and/or vocabulary practice increased high school students with disabilities fluency as well as helped them to acquire word identification skills and comprehension skills. David D. Paige (2006), concluded that Repeated Reading increased middle school students with learning disabilities and found that Repeated Reading is an effective strategy to help disabled readers sharpen their decoding skills and decrease miscues through the practice. Paige’s study also helped discover that Repeated Reading can be helpful for teachers to determine specific reoccurring decoding problems experienced by students and then plan appropriate interventions. An interesting aspect that emerged from many of these studies was that affect that Repeated Reading had on its participants. Students looked forward to Repeated Readings and could be encouraged to continue and work harder if they did not meet their goal by viewing their previous progress graph. The critical aspect here is that students could see that they were having success in reading and wanted to continue and read more. If students did not make progress and have fun then they would be likely not put forth the effort required to be successful regardless of the task. As a teacher the main goal is to have students be successful readers and through the use of Repeated Reading that is possible. The following chapter will explain the research that was completed using Repeated Readings to increase fluency and comprehension.
Key Terms

EBD: Emotional Behavioral Disability

IEP: Individualized Education Plan: A plan that is put into place by a team of individuals who work with a student who have qualified as having a disability.

Chapter One services:

Peer-mediated instruction: involves student teaching or coaching other students in specific skills has also shown to increase student’s self-esteem, social skills, on-task behavior and lower levels of misbehavior as well as increase students academic progress.

Words Correct Per Minute (WCPM):
CHAPTER THREE

Implementation

Introduction

Repeated Reading is a reading intervention used to increase struggling reader’s fluency, which in turn also increases their comprehension and word attack skills. When students read fluently their comprehension is generally higher (Young & Rasinski, 2009). This research coincided with the Common Core Standards (2011) which stated that for students to be successful readers they needed to be able to read with purpose and understanding. If students are unable to read fluently it places them at a significant disadvantage in their future academic pursuits. Throughout my experience of teaching special education throughout the primary grades, I have observed many students who lack fluency; therefore, I decided to research how fluency through the use of Repeated Reading, affects students’ comprehension.

I chose to implement Repeated Reading intervention, because research has indicated that implementation of Repeated Readings has had positive results for both struggling readers and students with disabilities. Positive results occur when students are able to reread a passage multiple times using Repeated Readings. Comprehension may be poor with the first reading of the text, but with each additional reading, the student is better able to comprehend because the decoding barrier to comprehension is gradually overcome. Rereading builds both fluency and enhances comprehension (Samuels, 1997). Due to the exposure Repeated Reading provides to a student, the transfer of fluency and comprehension skills are possible. Repeated Reading can also be helpful increasing student’s attitudes and confidence in reading. When they begin to see themselves make progress and each reading becomes easier and students are able to understand what they
have read, they will be more likely to read for pleasure. As I researched fluency and comprehension I noticed that fluency was focused on much more in the lower grades as opposed to the higher elementary grades due to the fact that many educators believe that fluency is a skill that is developed and learned in early elementary school. As a special education teacher who was currently working with students who were in the second grade but reading at a kindergarten or first grade reading level, I felt that all of my students would benefit from Repeated Reading instruction.

Through the implementation of Repeated Reading students have been able to increase their fluency and comprehension. The remainder of this chapter will focus on the participants, data collection and procedures used to complete this Repeated Reading research study.

**Participants**

The participants in this study included two boys in the second grade, one student was Caucasian and one Hispanic. Both of the participants were enrolled in a public elementary school located in a small rural community in the Midwestern United States and were in my special education reading enrichment block. This elementary school was educating 435 students at the time that this study was conducted. The elementary school’s ethnic makeup was eighty percent Caucasian, eighteen percent Hispanic, and two percent African American. Seven percent of the students enrolled in this school received special education services. Thirty-two percent of the students either received free or reduced price lunch. Eight percent of the students were not English proficient; Spanish was the dominant language spoken at home. Both of the students who participated in this study were already designed to be in my special education classroom.
for individualized reading instruction. There were five students in my class at the time of the study, only two students participated in the Repeated Reading intervention, because of students individualized education plans (IEP). Originally, three students were to be included in this intervention; however, one student’s IEP had changed and he began to receive counseling services during this reading enrichment block. The students participated in the study during their normal Reading Enrichment block of time which was 30 minutes twice a week for four weeks. I collaborated with the elementary school’s reading specialist, other teachers and research articles on the best strategies to implement Repeated Reading intervention. Each student was assessed using the Fountas and Pinnell Benchmark Assessment Kit (Fountas & Pinnell, 2008) and Qualitative Reading Inventory-5 (Leslie, Caldwell, 2011) prior to the implementation of the Repeated Reading intervention to find baseline data and to more appropriately plan for students reading passages. The Repeated Reading passages were based on student’s reading levels. The participants reading levels were determined by their accuracy, fluency and comprehension on the Fountas and Pinnell Reading Benchmark Assessment.

**Data Collection**

The first point of data collection in this study was a pre-assessment of student’s fluency and comprehension using the Fountas and Pinnell Reading Benchmark Assessment (Fountas & Pinnell, 2008) (Appendix A) and the Qualitative Reading Inventory (Leslie, Caldwell, 2011) (Appendix B). The Fountas and Pinnell Reading Benchmark Assessment Kit provided an alphabetic letter which indicated student’s fluency and comprehension abilities, level A being the lowest reading level and level Z being the highest reading level. The student’s level on this assessment was determined
from the student’s reading accuracy, words read correctly per minute, fluency and score on comprehension questions from the text. For students to be considered instructional at a certain alphabetic letter they needed to have ninety percent accuracy, a two out of three on fluency scale, and answered seven out of ten comprehension questions correctly.

The Qualitative Reading Inventory-5 provided an independent, instructional and frustrational level for students’ word identification. Word lists were given to students first to determine at what level to begin the reading passages with each student. Word lists helped to determine student’s accuracy of word identification, speed and automaticity of word identification. Reading passages could be read orally or silently to assess a student’s ability to read and comprehend different types of text. Each reading level consisted of either a Narrative or an Expository reading passage. Narrative passages provide readers with pictures while Expository passages did not provide students with a picture. Research suggests that emergent readers depend on picture clues for both word identification and passage comprehension. Because it may important to assess student’s ability to identify words and passage comprehension without pictures, Expository passages can be used. At the culmination of the four week study the students once again completed both the Fountas and Pinnell Reading Benchmark Assessment (Fountas & Pinnell, 2008) and the Qualitative Reading Inventory-5 to demonstrate growth.

Procedures

This study took place during the fourth quarter of the school year. The duration of the study was six weeks. Week one consisted of the pre-assessment of each student using the Qualitative Reading Inventory-5 (Leslie and Caldwell, 2011) word lists and
reading passages and the Fountas and Pinnell Reading Benchmark Assessment Kit (Fountas & Pinell, 2008). Weeks two through five consisted of the implementation of the Repeated Reading intervention, and week six consisted of the post-assessment of each student using the above measures. The Fountas and Pinnell Reading Benchmark Assessments and the Qualitative Reading Inventory-5 required each student to be assessed individually in a distraction free area. The Fountas and Pinnell Reading Benchmark Assessment is an assessment piece which was required by the school district. Once all the pre-assessments had been completed, the reading passages were organized according to students reading levels determined from results from the Qualitative Reading Inventory-5 (Leslie and Caldwell, 2011) and the Fountas and Pinnell Reading Benchmark Assessment Kit (Fountas and Pinnell, 2008).

After the pre-assessments had been completed, I began the implementation of the Repeated Reading intervention. The implementation started in week two of this study. Each week was set up in a similar fashion. Short passages (50-200 words) were chosen according to students reading level. I would first read the passage aloud or choral read the passage with the student. This helps the reader to hear how a fluent reader sounds as well as helps them to identify any unknown words that are needed for the comprehension of the passage. The following re-readings of the passage consisted of the student reading the passage aloud while I recorded the reading speed and number of words correct per minute. Students repeated the process of re-reading the passage until either the student read the passage a total of four times or the student read the passage at the rate of at least 84 to 100 words per minute. When the goal was reached, students would repeat the process with a new passage if time allowed. During the Repeated Reading intervention,
students speed was emphasized over their accuracy. If a student misread a word or hesitated for longer than five seconds, I provided the students with the correct word and had them repeat the word before continuing through the rest of the passage. If at any time a student asked for help with a word, I provided them with the answer. Prior to the study, I determined that expression, rate and prosody and word identification skills were the main areas to focus on to improve fluency and reading comprehension. At the end of our intervention session, students were asked to graph their number of words read correctly.

The procedures described above were generated from recent research conducted in the area of reading fluency and comprehension. The intervention lasted a total of six weeks, but because of the need to pre-assess and post-assess each student within the time given, the actual intervention only lasted four weeks.

Summary

Research in the areas of fluency and comprehension indicated that there was a connection and a need for fluency interventions to be implemented. Based on the research in the areas of fluency and comprehension, this four week study conducted using Repeated Reading was designed to look closely at how and if fluency affects students’ reading comprehension. Two students were used to analyze the connections between fluency and comprehension. Students began their Repeated Reading by reading the passage with a fluent reader, which in turn gave them confidence that they could read it on their own. Students were asked to reread a passage until they either read the passage a total of four times or reached a goal of 84 to 100 words per minute. After students completed their Repeated Reading they were asked to graph their number of words read
correctly, which also gave them more confidence to continue to “beat their last score”.

The results of the procedures described above and the data collection are discussed in the next chapter.
CHAPTER FOUR

Results

Introduction

This research study consisted of the implementation of a four week Repeated Reading intervention. During the four weeks the students were given short passages (50-200 words) according to students reading level. I would first read the passage aloud or choral read the passage with the student. This helps the reader to hear how a fluent reader sounds as well as helps them to identify any words they may be unsure of and helps them to comprehend the passage. The following re-readings of the passage consisted of the student reading the passage aloud while I recorded the reading speed and number of words correct per minute. Students repeated the process of re-reading the passage until either the student read the passage a total of four times or the student read the passage at the rate of at least 84 to 100 words per minute. When the goal was reached, students would repeat the process with a new passage if time allowed. During the Repeated Reading intervention, students speed was emphasized rather than their accuracy. If a student misread a word or hesitated for longer than five seconds, I provided the students with the correct word and had them repeat the word before continuing through the rest of the passage. If at any time a student asked for help with a word, I provided them with the answer. At the end of our intervention session, students were asked to graph their number of words read correctly. Preceding the Repeated Reading implementation, I assessed both student’s fluency and comprehension using the Fountas and Pinennell Reading Benchmark Assessment Kit (Fountas & Pinnell, 2008) as well as the Qualitative Reading Inventory-5 (Leslie and Caldwell, 2011). After
implementation of the Repeated Readers intervention I assessed both students again using the above measures. These results help to answer my overarching question of “Does student’s fluency through the use of Repeated Reading increase student’s comprehension?” The results of these assessments are in the next section of this chapter.

**Data Analysis**

The first item which was completed in this study was to assess each student individually using the Fountas and Pinnell Reading Benchmark Assessment Kit (Fountas & Pinnell, 2008) and the Qualitative Reading Inventory-5 (Leslie & Caldwell, 2011). The Fountas and Pinnell Reading Benchmark Assessments and the Qualitative Reading Inventory-5 required each student to be assessed individually in a distraction free area. These assessment tools provided information showing the level at which each student was reading during week one of the study. To find the appropriate reading level each student’s reading accuracy, fluency and comprehension were considered before assigning an alphabetic letter which indicated where the student was reading on a scale with A being the lowest and Z being the highest reading level. Each alphabetic letter was given a corresponding number to make the graphing results easier. Letter A was matched with the number one and so on throughout the alphabet ending with Z which was matched with the number twenty-six. As I looked at overall reading levels one of my students moved up one level. These results can be seen in Figure 1.
These results indicated that both fluency and comprehension had increased for one student because to increase on the alphabetic scale one needed to improve in both areas. The student that increased his reading level during the Repeated Reading Intervention was diagnosed with a specific learning disability. Student A, was not able to move up on the letter scale because of his reading accuracy; however, he was able to increase his fluency and comprehension score. This student has Autism and has a difficult time attending to the task at hand.

As shown in Figure 1, student B improved his reading ability through the use of Repeated Readings. The following results indicate how Repeated Reading affected their fluency abilities. Each student’s fluency was assessed using the fluency scale of zero, one, two or three on the Fountas and Pinnell Reading Benchmark Assessment Kit (Fountas & Pinnell, 2008). A score of zero indicated that the student read primarily word-by-word, with no expression or smoothness, no use of punctuation, and without stress or inappropriate stress when reading. A score of one indicated that the student read primarily in two-word phrases, with an occasional four-word phrase, very little
smoothness, expression, use of punctuation, and used very little or no stress while reading. A score of two indicated that the students read in mostly three or four-word phrases with some smoothness, expression, use of punctuation, and mostly used the appropriate stress while reading. A score of three indicated that the student read primarily in larger meaningful phrases with smoothness, expression, use of punctuation and appropriate stress while reading. On the pre-assessment Student A scored a one and Student B scored a two on the fluency scale on the Fountas and Pinnell Reading Benchmark Assessment (Fountas & Pinnell, 2008). On the post-assessment Student A scored a two and Student B scored a three on the fluency scale of the Fountas and Pinnell Reading Benchmark Assessment Kit (Fountas & Pinnell, 2008). These results are shown below in Figure 2.

**Figure 2**

**Fluency Pre- and Post Assessment**

These results indicate that neither of the students had a decrease in their fluency score. Both students who participated in the intervention increased their fluency score by one level.
As shown on Figure 3 above, student B increased his fluency almost thirty percent in the later repeated readings. Student A increased his fluency as well, however was not as consistent as student B. During this Repeated Reading intervention, accuracy was emphasized rather than speed when reading aloud. The main goal of the Repeated Readings was to increase fluency and comprehension which was accomplished. As discussed in Chapter Two the Paige (2006) study found that an added bonus to Repeated Reading intervention was not only a student’s increase in reading rate but also motivation (2006). While the students who participated in the intervention did not make substantial increases of fluency or words correct per minute, they were very motivated to read Repeated Readings each time.

The final assessment piece which was used was the Qualitative Reading Inventory (Leslie & Caldwell, 2011) to assess fluency and comprehension. Students were given a word list to determine their independent reading level. Students’ fluency, comprehension and words per minute were assessed using a passage at their reading level. Students are
first given a word list to determine their reading level. If students are able to answer fifteen to seventeen words correctly they are considered Independent at this level. If students are able to answer twelve to fourteen words correctly, their reading level is considered to be Instructional at this reading level. And finally, if students are able to answer less than twelve words correctly on the word list, this is considered to be a Frustrational level for them and is too hard. On the pre-assessment, both students were at an Instructional level at a Pre-Primer level 1 passage.

In order to be considered instructional on the comprehension portion of the reading passage students must score four correct answers on the comprehension assessment and five correct answers to be considered independent at a given level. Student A was able to read a Pre-Primer level 1 passage with instructional comprehension and forty one words per minute on the pre-assessment. Student B was able to read the Pre-Primer level 1 reading passage with instructional comprehension and forty two words per minute on the pre-assessment.

On the post-assessment both students improved their scores on the word lists as well as the reading passages and words per minute. Student B increased his word attack skill twelve percent from pre- to post intervention and scored ninety percent on the Pre-Primer word list. However, the Pre-Primer level 2/3 proved to be at Frustrational level for this student with nine errors and he was kept at the Pre-Primer level 1 reading level. Student B improved his words per minute score to eighty four words per minute. Student A did not improve on the word list on the post-assessment, he was still considered Instructional at the Pre-Primer level 1. Student A increased his words per minute score to forty six words per minute. These results are shown in Figure 4.
Conclusion

After analyzing the data collected from the fluency and comprehension research study which implemented Repeated Reading into student’s reading instruction twice a week, I found there was a positive correlation between the students’ fluency abilities and their ability to correctly comprehend a reading passage. Of the two students using this intervention, one student increased his overall reading level by one level. Both students who participated in the intervention increased their words per minute, one student increasing his words per minute score six percent and the other student increased his words per minute score forty two percent. Both students increased their fluency score on the Fountas and Pinnell Reading Benchmark Assessment Kit (Fountas & Pinnell, 2006). The implementation of Repeated Readings had a positive effect on students’ fluency and comprehension who participated in this study. The final chapter is the conclusion to the action research question, “Does student fluency through the use of Repeated Readings increase students’ comprehension?” The chapter will describe research that has been
completed using Repeated Reading as well as limitations and strengths of using Repeated Reading intervention.
CHAPTER FIVE

Conclusions

Introduction

Does student fluency through the use of Repeated Reading increase the student’s comprehension? The use of Repeated Reading to increase students’ fluency and comprehension skills proved to have a positive effect. Both participants in this study made gains in both their reading fluency skills and their reading comprehension skills. The students’ enthusiasm to read more words per minute helped to increase their desire to improve their oral reading skills; however, I think it could have increased even more if the Repeated Reading passages were of high interest to students. Unfortunately, since the participants were performing at a lower reading level, it was difficult to find passages that were of high interest to them for each reading. Despite the fact that the students lost some interest with the choice of reading passages, both of the students made gains in their fluency and comprehension skills.

Connections to Common Core Standards

In designing this study, the Common Core Standards (2011) were considered. According to the Common Core Standards (2011) students should be able to read with enough fluency so they can accurately comprehend a text. For students to be successful readers they need to be able to read with purpose and understanding. This can only happen when students are given the opportunity to repeatedly read a wide variety of different texts and genres to increase their fluency. Once students are able to read fluently they are able to focus their attention to the meaning of the text and will be more likely to self-correct their reading errors. Through the implementation of Repeated
Reading students should improve their oral reading fluency and improve their oral and silent reading comprehension and strategies to do this were all components that were included in this research.

**Connections to Existing Research**

In addition to the Common Core Standards, recent research in the area of literacy skills dealing with fluency and comprehension and the use of Repeated Reading were studied prior to this study’s design and implementation. There has been a vast amount of research completed on the effects of fluency on a student’s ability to comprehend a reading passage. Roundy and Roundy (2009) examined how the instructional strategy of repeated reading can potentially help teachers to increase fluency among struggling readers. This study not only examined whether there is a link between repeated readings and fluency and middle school students, but also whether or not this link holds for students from diverse backgrounds. The researchers discovered that not only did students increase their oral reading fluency but also their words per minute that they read. As fluency scores increased, both behavior and attitude continued to change. In addition to students words per minute increasing, so did their confidence in reading and comprehension. As fluency increased, there was considerable evidence that improvements in fluency were positively related to improve reading comprehension.

Musti-Rao, Hawkins, and Barkley (2009), evaluated the effects of Repeated Reading intervention to determine the effects of peer-mediated repeated reading on oral fluency of urban fourth-grade students. The researchers determined that the intervention had a moderate to large effect on students’ oral reading fluency. Prior to the intervention, all participants showed at-risk markers for reading. At the end of the study, eight
students continued to show at-risk markers, while three students advanced one grade level in reading following the intervention. Cartlege, Yurick and Lo (2005), went a step further and evaluated the effects of repeated reading intervention on the oral reading fluency and comprehension using peer-mediated strategies with students identified at-risk for Emotional Behavioral Disabilities. Results showed that all students increased their Words Per Minute scores as well as their accuracy during the Repeated Reading intervention. Students also answered higher level comprehension questions following the Repeated Reading condition. Much like the above two studies, Huang, R.B. Nelson, and D. Nelson (2008) conducted research based tutoring which used repeated reading over a ten week period to determine whether the students would increase their vocabulary, fluency and comprehension. Huang, et. al. (2008), determined that students made increases in their words correct per minute, as well as increased their reading level by one grade level in both oral accuracy and comprehension. Just as Huang, et. al (2008) were curious as to whether Repeated Reading would increase not only reading fluency but also comprehension so were Alber-Morgan, Ramp, Anderson and Martin (2007).

Alber-Morgan, et. al. (2007), examined the effects of repeated reading with systematic error correction and performance feedback on reading fluency and comprehension of middle school students with Emotional Behavioral Disabilities (EBD). Students were asked to read the title of the repeated reading and make a prediction of what the passage would be about. After making a prediction the student was asked to read the first two sentences and modify his or her prediction based on what they read. After the second prediction, the student read through the entire passage. After the reading of the passage, the researcher and the student discussed how closely the student’s
prediction matched the events of the story. Alber-Morgan, et. al. (2007), found that repeated readings had a significant effect on increased fluency as well as an immediate effect on literal comprehension. Rasinski, Rikli and Johnston (2009) found that when working with struggling readers in elementary school, who have been referred for Title 1 services, the lack of reading fluency appeared to be the area of greatest impairment in reading. The researchers determined that fluency, as measured by reading rate, had a significant correlation with reading comprehension among ninth grade students. Rasinski indicated that reading fluency had a second component which is known as prosody that often gets overlooked. Rasinski, et. al. (2009), studied the relationship between reading comprehension and reading fluency as measured by prosody. The researchers predicted that as students progressed through the grades, the overall relationship between fluency and comprehension would continue to be significant but would not weaken. Researchers determined that in three grade levels, prosodic reading was significantly correlated with silent reading comprehension. Students who read with prosody in oral reading were likely to have higher levels of comprehension when reading silently. While many researchers have conducted studies to evaluate the effects of Repeated Reading on students’ fluency and comprehension, it is also important to evaluate the differences that Repeated Reading and other reading interventions and strategies can have on students’ fluency and comprehension.

O’Connor, White and Swanson (2007) predicted that repeated reading would have a greater impact on improvements in rate and word recognition, and that continuous reading would have more impact on understanding word meaning and comprehension. The researchers expected younger poor readers to make greater gains in reading rate than
older students whose reading disabilities were more ingrained and diverse. The study compared continuous reading verses repeated reading. O’Connor, et. al. (2007), determined that all students improved in overall levels of performance during the intervention. As predicted, the average readers yielded higher performance levels at the end of the study than struggling readers. The researchers also found that students across grade levels grew at similar rates when given two different interventions. No significant differences were determined between students who practiced repeated reading or continuous reading on either measure of reading rate. Just as O’Connor, et. al. (2007), wanted to evaluate the effects of Repeated Reading verses continuous reading, it was Homan, Klesius and Hite (1993) that found many researchers have studied the effects of Repeated Reading on fluency and comprehension, but few have researched whether other strategies, such as non-repetitive readings, have the same effect on fluency and comprehension as repeated readings. Homan, et. al. (1993) stated that the advantage of non-repetitive reading strategies over repeated readings were that students’ do not repeat the text, therefore taking less time to implement. Also, they argued that because students’ only read a selection no more than one time, they are able to cover a wider range of literature and genres which in turn expose students to a larger vocabulary and background knowledge. Students who were in the non-repetitive reading group, used echo reading, unison reading and cloze reading strategies rather than repeat a passage they had already read. Students read passages from a basal as well as poetry. Researchers determined that both repeated reading and assisted non-repetitive reading methods improved comprehension among sixth-grade, Chapter One students. There were no significant differences between Repeated Reading and assisted non-repetitive reading.
The results demonstrated comparable benefits of using assisted non-repetitive instructional strategies and repeated reading to increase students’ fluency and comprehension. Repeated reading and assisted non-repetitive reading strategies have proven to help increase reading fluency and comprehension.

The implementation of any fluency program had positive effects on students’ fluency and comprehension. Repeated Reading has been found to increase fluency and comprehension of students who struggle with reading. Deborah Hill Staudt (2009), found that by using poems for repeated readings, with intensive word study as well as corrective feedback, Repeated Reading helped increase reading fluency and comprehension for students with learning disabilities. Devault and Joseph (2004), Kuhn and Stahl (2003) as well as Hawkins, Hale, Sheeley and Ling (2010) found that Repeated Reading coupled with word boxes and/or vocabulary practice increased fluency, word identification skills and comprehension skills in high school students with learning disabilities. David D. Paige (2006), concluded that Repeated Reading increased fluency in middle school students with learning disabilities and found that Repeated Reading is an effective strategy to help disabled readers sharpen their decoding skills and decrease miscues. Paige’s 2006 study also helped discover that Repeated Reading can be helpful for teachers to determine specific reoccurring decoding problems experienced by students and then plan appropriate interventions. An interesting aspect that emerged from many of these studies was that affect that Repeated Reading had on its participants. Students looked forward to Repeated Readings and could be encouraged to continue and work harder if they did not meet their goal by viewing their previous progress graph. As indicated from the above previous research completed in this study fluency and
comprehension have a connection, but how to measure that connection or best instruct students on how to improve their fluency has not yet been determined.

**Explanation of Results**

In fluency and comprehension skills, both participants made growth. Both participants were pre- and post assessed for fluency and comprehension, and words read correctly per minute using the Fountas and Pinnell Reading Benchmark Assessment Kit (Fountas & Pinnell, 2008) and the Qualitative Reading Inventory-5 (Leslie and Caldwell, 2011). In the above areas both participants made progress in at least one category if not all.

Participants’ overall reading abilities were assessed using the Fountas and Pinnell Reading Benchmark Assessment Kit (Fountas & Pinnell, 2008). Each participant was assessed individually in a distraction free space to yield the best results. The assessment had an alphabetical scale which indicated at what level the participant was reading. The alphabetical scale started at A, as the lowest level and ended with Z, as the highest level. To decipher a participant’s highest instructional level the participant’s reading accuracy, fluency and comprehension of the reading needed to be taken into consideration. One of the two participants made progress in his overall reading abilities which was indicated by an increase in his reading level. The student who improved his reading level was able to increase his reading level by one letter. Both participants were able to increase their fluency of the reading passage. The participant’s increase in reading level demonstrated that the participants with special needs were able to increase their fluency and comprehension through the use of Repeated Reading.
The participant’s oral fluency was also assessed using the Fountas and Pinnell Reading Benchmark Kit (Fountas & Pinnell, 2008). Each participant scored a zero, one, two, or three on the Fountas and Pinnell fluency scale. A score of zero indicated that the student read primarily word-by-word, with no expression or smoothness, no use of punctuation, and without stress or inappropriate stress when reading. A score of one indicated that the student read primarily in two-word phrases, with an occasional four-word phrase, very little smoothness, expression, use of punctuation and very little or no stress while reading. A score of two indicated that the student read in mostly three or four-word phrases with some smoothness, expression, use of punctuation, and mostly used the appropriate stress while reading. A score of three indicated that the student read primarily in larger meaningful phrases with smoothness, expression, use of punctuation, and appropriate stress on words while reading. On the pre-assessment Student A scored a one and Student B scored a two on these fluency scale on the Fountas and Pinnell Reading Benchmark Assessment (Fountas & Pinnell, 2008). On the post-assessment Student A scored a two and Student B scored a three on the same fluency scales. This part of the assessment is the most difficult to score because what one person may consider a three another person may consider a two. To keep the fluency score consistent, the same person assessed each student on both pre and post assessments. Neither of the participants had a decrease in their fluency level. This indicated that Repeated Reading helped improve participant’s fluency abilities.

Participant’s words read correctly per minute were assessed in each Repeated Reading. This assessment was completed while the participant was orally reading the passage. The number of words in the text, the number of words read incorrectly and
correctly, and the amount of time it took to read the passage was needed to determine the number of words read correctly per minute. Both participants increased their words read correctly per minute. This indicated that the use of Repeated Reading was able to increase participants’ rate of reading.

The final assessment piece used to assess fluency and comprehension was the Qualitative Reading Inventory- 5 (Leslie & Caldwell, 2011). Students were given a word list to determine their independent reading level. Students’ fluency, comprehension and words per minute were assessed using a passage at their reading level. Students were first given a word list to determine their reading level. If students were able to answer fifteen to seventeen words correctly they were considered Independent at this level. If students were able to answer twelve to fourteen words correctly, their reading level is considered to be Instructional at this reading level. And finally, if students were able to answer less than twelve words correctly on the word list, it is considered to be a Frustrational level for them and is too hard. On the pre-assessment, both students were at an Instructional level at a Pre-Primer level 1 passage.

In order to be considered instructional on the comprehension portion of the reading passage students must score four correct answers on the comprehension assessment and five correct answers to be considered independent at a given level. Student A was able to read a Pre-Primer level 1 passage with instructional comprehension and forty one words per minute on the pre-assessment. Student B was able to read the Pre-Primer level 1 reading passage with instructional comprehension and forty two words per minute on the pre-assessment.
On the post-assessment both participants improved their scores on the word lists as well as the reading passages and words per minute. Student B increased his word attack skill twelve percent from pre- to post intervention and scored ninety percent on the Pre-Primer word list. However, the Pre-Primer level 2/3 proved to be at Frustrational level for this student with nine errors and he was kept at the Pre-Primer level 1 reading level. Student B improved his words per minute score to eighty four words per minute. Student A did not improve on the word list on the post-assessment, he was still considered Instructional at the Pre-Primer level 1. Student A increased his words per minute score to forty six words per minute.

In spite of the lack of improvement in some areas, the study confirms that using Repeated Reading to increase participants’ fluency and comprehension was effective. When the participants were provided with a purpose for reading and the opportunity to reread a passage, they were able to increase their fluency and comprehension abilities as well as their motivation for reading. Over time the students were able to transfer those skills over to other texts.

**Strengths**

Reflection on the research completed in this study revealed a number of strengths. First, the participants enjoyed charting their progress of each Repeated Reading. When students were able to see their words correct per minute score for each Repeated Reading it gave them motivation to “beat their time or score” during the next reading. As participants practiced their reading passages multiple times they became more fluent readers.
Another strength of the study was the predictability of the schedule of events. The participants knew that they would read and reread a passage four times, two times a week. Participants knew that they would be charting their progress each time they met to reread a passage.

Additionally, another strength of this study was the time it took participants to complete the Repeated Reading task. Both participants were students who were identified as having a disability. If this intervention would have required participants to engage in Repeated Reading for longer than a thirty minute time block, I feel that it would have made them less likely to be motivated and want to participate willingly in the intervention. Because this intervention is able to be completed in thirty minutes and increase students’ fluency and comprehension, it is a great intervention to use for a Response to Intervention group.

The final strength of this study was that I was the researcher and the reading teacher. This meant that I knew the best way to implement Repeated Reading intervention, because of my completed research. Also, I knew the participants because I had already had the students in my class for four quarters of the year. The fact that I knew the participants and their needs helped me to create the best possible Repeated Reading intervention for them.

**Limitations**

While the strengths of this study contributed to the outcomes that indicated its effectiveness, there were also a number of limitations. First, the duration of the intervention appeared to affect the participants’ motivation at the end of the study. The participants were really excited about the intervention in the beginning of the study, but
as the weeks went by and the end of the school year was near, participants began to be less motivated to do their best reading. One way to improve motivation would be to schedule this intervention during the first or second quarter of the school year.

Another limitation was the lack of interesting passages for students to read. Since students were only reading at a level D, which is considered to be a kindergarten reading level, I had a hard time finding short passages that were of high interest for them.

The third limitation was that there were only two students; one with a learning disability and one with Autism who participated. Broader generalizations can be made if the findings of the study are replicated with other elementary students who have learning disabilities and Autism. Also, because the population varied with regard to participants’ disability categories, this limits the extent to which findings can be generalized to one specific disability category.

The final limitation was in regard to setting. Data were collected over 5 weeks in one special education classroom, in which individual reading instruction was provided by a university researcher using controlled fiction passages. Because I only work with the participants in reading, language arts and math content areas, I was unable to assess generalization of reading proficiency to other classrooms. Also, I did not examine the fluency and comprehension with other types of reading materials (e.g., content area, nonfiction). Despite these limitations the implementation of Repeated Reading intervention yielded positive results.
**Recommendations for Further Research**

While the results of this study appear encouraging, it is recommended that further research be conducted with students who are reading in the average or above-average reading range. Would this Repeated Reading intervention increase their fluency and comprehension greater than that of struggling readers?

Along with conducting more studies with students who are considered average or above average readers, further research might explore if Repeated Reading can increase reading fluency and comprehension students’ with Autism. Would adding vocabulary or word boxes increase students’ daily phonics or daily vocabulary? This research would be strengthened by attempts to assess generalization to different settings, with a variety of reading materials, and over an extended period of time.

**Summary**

Overall, the study confirmed that implementing Repeated Reading intervention was an effective method to increase fluency and comprehension in students’ with disabilities. While further research would be needed to confirm these findings across larger populations, the results are promising. Even though the study had noteworthy limitations, literacy instruction that incorporates the aforementioned instructional strategies has the potential to guide literacy teachers toward effectively instructing their students to increase their fluency and comprehension.
**Recording Form**

**Part One: Oral Reading**

Place the book in front of the student. Read the title and introduction.

**Introduction:** Carl has a teacher named Mr. Brown. Carl tells all the things he and the other children in his class like to do with their teacher, Mr. Brown.

<table>
<thead>
<tr>
<th>Page</th>
<th>Text</th>
</tr>
</thead>
</table>
| 2    | **My name is Carl.**  
|      | I go to school.  
|      | I like school.  
|      | This is my teacher.  
|      | My teacher's name is  
|      | Mr. Brown. |
| 4    | Mr. Brown reads books  
|      | to us.  
|      | We like the books. |
| 6    | Mr. Brown helps us  
|      | write stories. |
### Part One: Oral Reading continued

<table>
<thead>
<tr>
<th>Page</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>We like to write stories. We like to read the stories to him.</td>
</tr>
<tr>
<td>8</td>
<td>Mr. Brown helps us read books. We like to read books to him.</td>
</tr>
<tr>
<td>10</td>
<td>We like to paint pictures. We like to draw pictures. Mr. Brown helps us.</td>
</tr>
</tbody>
</table>

**Subtotal:** 3
### Part One: Oral Reading (continued)

<table>
<thead>
<tr>
<th>Page</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Mr. Brown plays games with us. We like to play ball.</td>
</tr>
<tr>
<td>14</td>
<td>We like our school. We like to read books.</td>
</tr>
<tr>
<td>15</td>
<td>We like to write stories. We like to play ball.</td>
</tr>
<tr>
<td>16</td>
<td>We like our teacher, Mr. Brown!</td>
</tr>
</tbody>
</table>

Subtotal: 5

Total: 5
### Recording Form

<table>
<thead>
<tr>
<th>Accuracy Rate</th>
<th>Errors</th>
<th>12 or more</th>
<th>11</th>
<th>10</th>
<th>9</th>
<th>8</th>
<th>7</th>
<th>6</th>
<th>4–5</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>Below 90%</td>
<td>90%</td>
<td>91%</td>
<td>92%</td>
<td>93%</td>
<td>94%</td>
<td>95%</td>
<td>96%</td>
<td>97%</td>
<td>98%</td>
<td>99%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

**Self-Correction Ratio**

\[(E + SC) / SC = 1:\]

### Fluency Score

<table>
<thead>
<tr>
<th>Fluency Score</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
</table>

**Fluency Scoring Key**

0. Reads primarily word-by-word with occasional but infrequent or inappropriate phrasing; no smooth or expressive interpretation, irregular pacing, and no attention to author’s meaning or punctuation; no stress or inappropriate stress, and slow rate.

1. Reads primarily in two-word phrases with some three- and four-word groups; some word-by-word reading; almost no smooth, expressive interpretation or pacing; guided by author’s meaning and punctuation; almost no stress or inappropriate stress, with slow rate most of the time.

2. Reads primarily in three- or four-word phrase groups; some smooth, expressive interpretation and pacing guided by author’s meaning and punctuation; mostly appropriate stress and rate with some slowdowns.

3. Reads primarily in larger, meaningful phrases or word groups; mostly smooth, expressive interpretation and pacing guided by author’s meaning and punctuation; appropriate stress and rate with only a few slowdowns.
Part Two: Comprehension Conversation

Have a conversation with the student, noting the key understandings the student expresses. Use prompts as needed to stimulate discussion of understandings the student does not express. Score for evidence of all understandings expressed—with or without a prompt. Circle the number in the score column that reflects the level of understanding demonstrated.

Teacher: Talk about what you learned in this book.

<table>
<thead>
<tr>
<th>Key Understandings</th>
<th>Prompts</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Within the Text</strong></td>
<td>Carl and the other children like a lot of things they do with their teacher at school, don’t they? What were some of those things? What does Mr. Brown do in this story? Helps them with a lot of things</td>
<td>0 1 2 3</td>
</tr>
<tr>
<td>Carl likes everything he does at school with his teacher. (Gives 2–3 examples, such as read books, write stories, listen to stories, paint pictures, and play ball.) Mr. Brown helps Carl and the other children do things at school. Note any additional understandings:</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Beyond the Text</strong></td>
<td>Why do you think Carl likes school?</td>
<td>0 1 2</td>
</tr>
<tr>
<td>Carl likes school because he likes to (gives 1–2 examples, such as read books, write stories, listen to stories, paint pictures, play ball.) teacher is nice</td>
<td>What does Carl like most about school? Why do you think he likes that? What do you think about Mr. Brown? Why? Did this story remind you of your teacher or class? Why? He is nice—he lets kids do stuff.</td>
<td></td>
</tr>
<tr>
<td>I think Carl’s favorite thing at school is (gives an example) because (any plausible reason).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr. Brown is a good teacher because (any plausible reason).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>They do some things like we do at school, such as (gives 1–2 examples).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note any additional understandings:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Guide to Total Score
6–7 Excellent Comprehension
5 Satisfactory Comprehension
4 Limited Comprehension
0–3 Unsatisfactory Comprehension

Subtotal: 3 16
Add 1 for any additional understandings: 1

Total Score: 3 17

Part Three: Writing About Reading (optional)

Read the writing/drawing prompt on the next page to the student. Specify the amount of time for the student to complete the task. (See Assessment Guide for more information.)
### Examiner Word Lists

**Pre-Primer 1**

<table>
<thead>
<tr>
<th>Word</th>
<th>Identified Automatically</th>
<th>Identified</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. can</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>2. I</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>3. of</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>4. me</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>5. the</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>6. in</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>7. at</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>8. with</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>9. a</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>10. he</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>11. go</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>12. to</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>13. see</td>
<td>+</td>
<td>did</td>
</tr>
<tr>
<td>14. do</td>
<td>+</td>
<td>wish</td>
</tr>
<tr>
<td>15. on</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>16. was</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>17. she</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

**Total Correct Automatic** 15/17 = 90.6%

**Total Correct Identified** 15/17 = %

**Total Number Correct** 15/17 = %

### Pre-Primer 2/3

<table>
<thead>
<tr>
<th>Word</th>
<th>Identified Automatically</th>
<th>Identified</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. make</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>2. same</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>3. like</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>4. doing</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>5. were</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>6. my</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>7. work</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>8. write</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>9. play</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>10. just</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>11. some</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>12. they</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>13. people</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>14. look</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>15. too</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>16. other</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>17. place</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>18. where</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>19. under</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>20. help</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

**Total Correct Automatic** 7/20 = %

**Total Correct Identified** 7/20 = %

**Total Number Correct** 7/20 = %

### LEVELS

<table>
<thead>
<tr>
<th>Number of Words Per Level</th>
<th>Independent</th>
<th>Instructional</th>
<th>Frustration</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-17</td>
<td>18-20</td>
<td>14-17</td>
<td>below 14</td>
</tr>
<tr>
<td>90-100%</td>
<td>70-85%</td>
<td>below 70%</td>
<td>below 70%</td>
</tr>
</tbody>
</table>
References


