Effects of Repeated Readings on Fluency and Comprehension for Middle School Students with Disabilities

THESIS

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By

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Abstract

The purpose of this study was to determine if repeated readings with error correction would increase a child’s reading fluency and comprehension for middle school students with disabilities. Three middle school students with reading deficits participated in the study. This study used AB designs across three students. Results indicated that repeated readings with error correction increased the average correct words per minute for each student, decreased the average number of errors per minute for each student, and increased the average number of reading comprehension questions students answered correctly.
Acknowledgments

I would like to thank my advisor, Dr. Sheila Alber-Morgan, for supporting me and offering guidance throughout the study. I would also like to thank Dr. Moira Konrad for her contributions as a second reader. Finally, I would like to thank Kelly Ferguson for contributing to the study as a second observer.
Vita

2011…………………………...B.S. M/M Special Education, The Ohio State University
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Fields of Study

Major Field: Educational Studies
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Chapter 1

Introduction

Reading fluency and reading comprehension are areas of difficulty for a large number of students. This difficulty continues with them throughout childhood and into adulthood unless remediation occurs in school. Heward (2006) explains, “Difficulty with reading is by far the most common characteristic of students with learning disabilities” (p. 184). Kavale and Forness (2000) estimate that 90% of all children with learning disabilities were referred for special education because of reading problems. Deficits in reading decoding, fluency, and comprehension are not only prevalent at the elementary level; many students at the secondary level continue to have issues with reading. Valleeley and Shriver (2003) point out, “As children progress through school, they are expected to read larger amounts of text within a short amount of time. Slow, halting reading will impact how much information they can gain and may lead to exhaustion” (p. 56). With an ever-growing push for students with learning disabilities to be included in regular classrooms, students with reading deficits need instruction in order to perform. If students cannot read the material in their content classes, their chances to succeed diminish. Reading comprehension at the high school level is often impeded by fluency deficits (Skinner & Shapiro, 1989; Valleeley & Shriver, 2003). Fluency is a critical component of skilled reading. Fluent readers can read text with speed, accuracy, and

A problem that secondary schools are facing is the lack of reading training that secondary teachers are receiving. Gillespie and Raskinski (1989) point out that teachers in middle schools and high schools do not feel it is their responsibility to teach basic reading skills, therefore reading instruction is often neglected. Teachers at the secondary level need an effective reading intervention that is easy to learn and administer at the secondary level. Repeated readings is an intervention that fits that description.

Repeated readings has been demonstrated to increase oral reading rate, accuracy, and comprehension for students with and without disabilities in elementary, middle, and high school (Alber-Morgan et al., 2007). The goals are for students to increase their reading automaticity through repetition and to transfer automaticity to new material they will encounter in the classroom. Samuels (1979) studied the effectiveness of repeated readings on the fluency (automaticity and accuracy) of average and poor readers, as well as students with intellectual disabilities. The results showed that the number of repetitions needed to achieve fluency decreased over a period of time as rereading continued, and that repeated reading of one passage transferred to the reading of new material.

Gaffney and Morris (2011) studied the effects of repeated readings on the fluency of an eighth grade student with disabilities. They used repeated readings as a part of a one-hour lesson plan, which included a tape-recorder reading assignment, guided reading, repeated readings, and a tutor reading. During the repeated reading portion, the student
read the same passage four times over two days. Results of the study showed that the student increased his oral reading fluency by 33%. Additionally, Barbetta and Escarpio (2016) conducted a study with sixth-grade students with EBD and found that when repeated readings were compared to non-repeated readings and equivalent non-repeated readings conditions, results demonstrated that repeated readings were the most effective in increasing reading fluency and comprehension for all of the participants. Ates (2013) conducted a study and found that repeated readings with performance feedback increased the reading fluency of his participant significantly in a short, 38-hour, period of time.

In addition to repeated readings, error correction is also critical. Begeny, Daly, and Valleyley (2006) conducted a study comparing the effectiveness of phrase drill (PD), which is an error correction strategy, to repeated readings (RR). PD is an error correction procedure where the error word or phrase is modeled for the student by the instructor. The student is then prompted to repeatedly practice the word or phrase. Begeny, Daly, and Valleyley found that when students are only doing RR, they are often repeatedly practicing incorrect words if their error rates are high. Therefore, an error correction procedure, such as PD, may be necessary in order to make sure students are practicing correct words. The results of the study found both phrase drill (i.e., error correction) and repeated readings produced substantial improvements in oral reading fluency. Furthermore, Shaywitz (2003) explains that after the National Reading Panel did extensive research on reading fluency, they found that students make the largest gains when they read orally, they are given opportunities for practice, and they are given
feedback. Therefore, the present study will use repeated readings and corrective feedback which includes an error correction procedure and positive statements for words read correctly. The following research questions were asked in this study: What are the effects of repeated readings with error correction on words read correctly per minute, number of errors per minute, reading comprehension, and generalization for middle school students with learning disabilities? What are the students’ opinions of the repeated readings with error correction intervention?
Chapter 2

Method

Participants and Setting

The participants in this study were three male students, ages 13 to 14, attending eighth grade at a public middle school located in Ohio. All three students received special education services under the category of specific learning disability.

The experimenter, who was also the participants’ special education teacher, chose these three students to participate because they demonstrated deficits in reading decoding and fluency per results of their most recent Evaluation Team Reports. Adam scored in the below average range, 9th percentile, for the overall letter and word recognition reading composite. Chad scored in the below average range, <1st percentile, on the oral reading fluency assessment. Mike scored in the below average range, 1st percentile, on the oral reading fluency assessment as well. Table 1 shows demographic and reading assessment data for each student.

All students participating in the study received their language arts curriculum, which includes reading and writing, in a self-contained setting. Adam and Chad received their language arts curriculum in a LD classroom, while Mike received his language arts curriculum in an ID classroom. All three students received additional reading instruction during a self-contained supplemental period with an intervention specialist (i.e., the experimenter) at least twice per week. During experimental sessions, each student was pulled from independent work for 10 to 15 minutes.
Table 1. Demographic and Reading Assessment Data

<table>
<thead>
<tr>
<th>Student</th>
<th>Gender</th>
<th>Age</th>
<th>Ethnicity</th>
<th>Grade</th>
<th>Disability</th>
<th>KTEA-III Standard Score and Percentile Ranking</th>
<th>WIAT-III Standard Score and Percentile Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adam</td>
<td>M</td>
<td>13</td>
<td>African American</td>
<td>8</td>
<td>SLD</td>
<td>9th percentile</td>
<td>&lt;1st percentile</td>
</tr>
<tr>
<td>Chad</td>
<td>M</td>
<td>13</td>
<td>Caucasian</td>
<td>8</td>
<td>SLD</td>
<td>-</td>
<td>1st percentile</td>
</tr>
<tr>
<td>Mike</td>
<td>M</td>
<td>14</td>
<td>Caucasian</td>
<td>8</td>
<td>SLD</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Experimenter

The experimenter was a current student at The Ohio State University in the Applied Behavior Analysis master’s program. She received her K-12 M/M special education licensure from The Ohio State University in 2011. She had been working for the past four years as an M/M special education teacher with eighth grade students with learning disabilities and other health impairments. She taught language arts, which includes reading comprehension instruction, along with teaching individual students reading decoding skills per their IEP goals.

Reading Materials

There were two types of reading passages used in this study, fiction and nonfiction. The fiction passages were the primary passages used to collect fluency data and the nonfiction passages were used for generalization probes. The fictional reading passages used in this study were selected from the NCS Pearson, Inc. AIMSweb reading fluency series (see Appendix E and F). The nonfiction, generalization passages were
selected from the science reading comprehension section of ed.Helper.com (see Appendix G). All reading passages were selected at the student’s grade level due the fact that their Individualized Education Program goals were set at grade level for mastery. Therefore, for each session, all students were provided reading passages at the eighth grade level. Each student was provided with a new reading passage for each session.

**Definition and Measurement of Dependent Variables**

The dependent variables were the number of words read correctly per minute and the number of errors per minute.

*Correct Words per Minute.* During each session, the experimenter administered a 1 minute timed reading passage to the student and marked the passage for errors (words skipped or reading incorrectly). Following each reading, the experimenter calculated and recorded the total number of words read correctly by subtracting the number of word errors from the total amount of words read.

*Errors per Minute.* Following each reading, the experimenter counted the number of errors performed by the student. An error was counted if a word was skipped, read incorrectly, or the student did not say the word within 3 seconds. The experimenter orally provided the word to the student if the word was said incorrectly or not within 3 seconds, and the student continued reading the passage.

*Reading Comprehension.* Following the timed reading of the fictional passages, students were asked five literal and inferential comprehension questions pertaining to the passage. They were asked who, what, where, when, and why questions for each passage.
(e.g., “Who are the characters?” “What are three events that happen in the story in order?” “Where did the story take place?” “When did the story take place?” “Why was Martha so excited?”). The students’ verbal answers were recorded by the experimenter word for word. The students’ answers were compared to an answer key developed by the experimenter and they were given a score out of five (see Appendix D).

Generalization Probes

Following the timed reading the nonfiction passages, students were asked five, multiple-choice and short answer comprehension questions pertaining to the passage (e.g., “How big is the Hubble Space Telescope?” “Why is the Hubble Space Telescope better than a telescope here on Earth?” “How old do scientists think our universe is?”). The students’ verbal answers were recorded by the experimenter word for word. The students’ answers were compared to an answer key developed by edHelper.com and they were given a score out of five (see Appendix H).

Interobserver Agreement

Interobserver agreement (IOA) for correct and incorrect words read per minute was assessed during 17% of the sessions. Before collecting IOA data, a second observer (another special education teacher who works with the students regularly) was trained on how to score the reading passages with modeling and a procedural checklist (see Appendix E). The second observer was provided with a copy of the reading passage. While she watched the session, the observer put an error mark (slash) through incorrect words. The second observer’s copies were compared to the experimenter’s marked copies.
to determine IOA. An agreement was counted if both observers scored a word the same, either correct or as an error. A disagreement was counted if the observers differed on their scoring of a word. Interobserver agreement was calculated by dividing the number of agreements by the number of agreements plus disagreements and multiplying by 100. Mean IOA for each student on correct words per minute was as follows: Adam, 100%; Mike, 98.7%; and Chad, 99.3%.

Treatment Integrity

Treatment integrity was assessed during 22% of the sessions. The second observer used a procedural checklist to assess the experimenter’s experimental procedures. During all sessions in which procedural reliability was assessed, the experimenter followed the procedures in correct sequence to 100% accuracy.

Experimental Design

This study used an AB design across three students. Originally, the intention was to use a multiple baseline across students’ design; however, due to time constraints all students began intervention at the same time.

Baseline

The experimenter followed a procedural checklist (see Appendix A) while collecting baseline data. First, the student was presented with a reading passage and prompted to read the passage orally (e.g., “I would like you to read this passage to me. When you are ready to begin, you may start reading.”). When the student began reading the first word, the experimenter started a timer for 1 minute. As the student read, the
experimenter put an error mark (slash) through any words the student skipped or read incorrectly. If the student stopped on a word for longer than 3 seconds, the experimenter told the student the word and counted that word as an error. If the student inserted a word, no error was counted. After 1 minute the student was prompted to stop reading (e.g., “Stop, good work.”). The experimenter counted the total number of words the student read in 1 minute, then she counted all of the errors. The number of errors was subtracted from the total number of words in order to obtain the number of words read correctly. The student was then asked to finish reading the passage in order to answer the comprehension questions.

**Intervention-Repeated Readings**

The experimenter followed a procedural checklist while implementing the repeated readings condition of the study. The same procedure was used by Alber-Morgan et al. (2007) where both systematic error correction used by Nelson et al. (2004) and performance feedback used by Chafouleas et al. (2004) were incorporated into the procedure. The student was presented with a reading passage and prompted to read the passage orally (e.g., “I would like you to read this passage to me. When you are ready to begin, you may start reading.”). While the student read, the experimenter put an error mark (slash) through any words the student skipped or read incorrectly. Each time the student produced a reading error, an error correction procedure was used: The experimenter read the skipped or incorrect word correctly to the student, the student repeated the word to the experimenter, and if the student repeated the word correctly they
received praise (e.g., “Great job saying that word.”). Once the student completed the entire reading passage, the experimenter had the student review each of the error words in the passage. The experimenter pointed to each word and asked the student to say the word (e.g., “What is this word?”). If the student responded correctly, the experimenter specialist praised the student (e.g., “Good job remembering that word.”). If the student responded incorrectly or did not respond, the experimenter read the word and prompted the student to repeat the word. The experimenter praised the student.

Following the initial reading with error correction, the student was asked to read the same passage and see how many words they could read in 1 minute. The experimenter used the same procedure for timing the student and counting errors as in baseline. The following performance feedback was delivered following the 1-minute reading: The experimenter counted the number of words read correctly and reported that number to the student.

**Social Validity**

Social validity was collected by administering a questionnaire to the students after data collection was complete (see Appendix C). The questionnaire was administered by a teacher in the school building who was not involved with the study. The questionnaire included a scale from 1 to 5; 1 strongly disagree, 2 disagree, 3 neutral, 4 agree, 5 strongly agree. The students were asked to rate the following statements: This study helped my reading performance. I enjoyed doing repeated readings. I disliked doing reading repeated readings.
Chapter 3

Results

*Correct Words per Minute*

Figure 1 shows the number of correct words read per minute for each of the 18 sessions. Adam had a stable baseline with the exception of sessions 3 and 4 where there was an increase in words read correctly per minute. Adam showed an immediate increase in words read correctly per minute when introduced to repeated readings. He showed an ascending trend with the exception of sessions 10 and 14. Mike had a stable baseline with the exception of session 3 where there was an increase in words read correctly per minute. Mike showed an immediate increase in words read correctly per minute when introduced to repeated readings. He showed a stable level of responding throughout intervention. Chad had a stable baseline with the exception of session 3 where there was an increase in words read correctly per minute. Chad showed an immediate increase in words read correctly per minute when introduced to repeated readings. He showed a stable level of responding throughout intervention except for a decrease in session 10 and an increase in session 12.

Table 2 shows the mean number of correct words per minute for each student. Adam averaged 65 cwpm during baseline and 107.6 cwpm during intervention. Mike averaged 42.6 cwpm during baseline and 73.5 cwpm during intervention. Chad averaged 52.9 cwpm during baseline and 89.3 cwpm during intervention.
**Errors per Minute**

Figure 2 shows the number of errors read per minute in each session for each student. Each student decreased the amount of errors read per minute during intervention. Table 2 shows the mean number of errors per minute for each student. Adam averaged 5.3 errors during baseline and 1.7 errors during intervention. Mike averaged 9.4 errors during baseline and 4 errors during intervention. Chad averaged 7.4 errors during baseline and 3.6 errors during intervention.

**Reading Comprehension**

Figure 3 shows the number of reading comprehension questions the students answered correctly during each session. Each student had a highly variable baseline. During baseline Adam ranged between 2 and 5 correct answers, Mike ranged between 1 and 3 correct answers, and Chad ranged between 1 and 4 correct answers. During intervention, each student increased their correct answers. Adam ranged between 3 and 5 correct answers, Mike ranged between 2 and 5 correct answers, and Chad ranged between 2 and 5 correct answers.

Table 2 shows the mean number of questions answered correctly during baseline and intervention for each student. Each student increased their average number of correct answers. Adam increased from 3.6 correct answers during baseline to 4.5 correct answers during intervention. Mike increased from 2.4 correct answers during baseline to 3.7 correct answers during intervention. Chad increased from 2.4 correct answers during baseline to 3.5 correct answers during intervention.
Figure 1. Number of correct words read per minute in each condition
Figure 2. Number of errors per minute by each student in each condition.
Figure 3. Number of questions answered correctly per session
Table 2 Mean Number of Correct Words per Minute, Errors per Minute, and Reading Comprehension Questions Answered Correctly per Session in Each Condition

<table>
<thead>
<tr>
<th>Student</th>
<th>Baseline Correct</th>
<th>Baseline Errors</th>
<th>RR Correct</th>
<th>RR Errors</th>
<th>Baseline Reading Comprehension</th>
<th>RR Reading Comprehension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adam</td>
<td>65</td>
<td>5.3</td>
<td>107.6</td>
<td>1.7</td>
<td>3.6</td>
<td>4.5</td>
</tr>
<tr>
<td>Mike</td>
<td>42.6</td>
<td>9.4</td>
<td>73.5</td>
<td>4</td>
<td>2.4</td>
<td>3.7</td>
</tr>
<tr>
<td>Chad</td>
<td>52.9</td>
<td>7.4</td>
<td>89.3</td>
<td>3.6</td>
<td>2.4</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Social Validity

Students completed the questionnaire one week after completing their final intervention session. All three students said they ‘strongly agree’ that repeated readings helped their reading performance. When asked if they enjoyed doing the repeated readings, two out of the three students said “agree” and one student said “neutral”. When asked if they disliked doing repeated readings, one student said “strongly disagree”, one student said “disagree”, and one student said “neutral”. All three students were willing to work with the experimenter. During many of the sessions, the students asked to be the first to work with the teacher.
Chapter 4: Discussion

The results of the study support the findings of previous research on the effectiveness of repeated readings with error correction on reading fluency and comprehension. As was found in Gaffney and Morris (2011), Barbetta and Escarpio (2016), Ates (2013), and Alber-Morgan (2007), students increased their mean correct words per minute, increased their mean number of comprehension questions answered correctly, and decreased their mean number of errors per minute when introduced to repeated readings. This study differed from Alber-Morgan (2007) because of a change in the repeated readings protocol. In the Alber-Morgan (2007) study, students reread the passage an additional time before answering comprehension questions. Due to time constraints, the present study eliminated the additional reading. The present study showed that gains in reading fluency could be made with repeated readings even when the students only reread the text once. Also, the present study showed gains in generalization by students in correct words per minutes, errors, and comprehension.

Research Question One-Correct Words per Minute. Repeated readings with error correction increased each students’ mean correct words read per minute. Session 10 seemed to be a more difficult passage for each of the students because all three of them decreased their number of words read correctly per minute to baseline levels. Although all three students increased their words correctly per minute throughout the study, they all
leveled out and did not continue to make large increases to their correct words per minute, however they stayed above baseline.

**Research Question Two - Errors per Minute.** Repeated readings with error correction decreased each students’ mean number of errors per minute. Adam did well with error correction because he was able to remember how to say the words after the experimenter corrected him. During intervention, there were five sessions when Adam did not have any errors during the one minute timed reading because he was able to remember all of the corrections. Although Mike and Chad decreased their mean number of errors per minute, they had a harder time with error correction because of their working memory deficits. While, Adam could remember a correction after one remediation, Mike and Chad needed the words said to them multiple times before it was going to stay in their memory. There was no pattern in how many errors students made in the sessions, therefore it is hard to say if one passage was more difficult than others. Each student has a unique catalogue of words in their repertoire based on prior experience with the words and knowledge of decoding strategies.

**Research Question Three - Reading Comprehension.** Although all three students increased their mean number of comprehension questions answered correctly per session, there was a lot of variability in the data. Adam’s comprehension was fairly high throughout the study. A ceiling effect occurred in baseline when Adam scored 5 over three consecutive sessions. During intervention, he scored 5 over five consecutive sessions. The fictional comprehension questions stayed consisted throughout baseline and
intervention; therefore, before Adam started the passage he knew he was going to answer the same who, what, where, when, and why questions. Mike’s data were highly variable throughout baseline and intervention. He often seemed worn out after reading the passages and wanted to answer the comprehension questions quickly. Also, instead of thinking about the passages and giving an educated guess on an answer if he didn’t know it, Mike would often just say ‘I don’t know’ or give a random answer. Chad had difficulty with the comprehension questions. He would often get to the end of the passage and only remember a couple of details from the beginning. Overall, he increased his mean reading comprehension score between baseline and intervention, however he was often frustrated when it came to answering the questions.

*Research Question Four-Generalization Probes.* All three students showed a significant increase between their baseline generalization probes and their intervention generalization probes for correct words per minute. The generalization probes were both science related topics, however, because they are nonfiction passages, students may have had more prior knowledge about the second passage. Regardless, Adam and Chad increased their cwpm for their generalization probes by more than 50 words, and Mike increased his by over 30 words. Adam increased his generalization (nonfiction) comprehension score by three points, which might mean that he needs to be able to reread nonfiction passages more than once in order to properly answer comprehension questions. However, Mike seemed to do much better with nonfiction passages because he scored a 5 both in baseline and intervention. Mike has trouble with imagining stories and
answering inferential questions, therefore the nonfiction passages were easier for him to comprehend. Also, the format of the generalization questions might have been easier for Mike because they were in mostly multiple-choice format. Chad decreased his reading comprehension generalization score from a 4 to a 5 between baseline and intervention. Overall, there were only two generalization sessions to compare for each student, therefore no definite conclusions can be made.

Research Question Five - Social Validity. Overall, students’ opinions of the repeated readings with error correction were positive. All three students enjoyed working one-on-one with the experimenter, therefore it was difficult to tell whether or not their enthusiasm stemmed from their enjoyment of doing repeated readings or getting attention from the experimenter. Each student agreed that repeated readings helped their reading performance, which shows that they could see a difference in their reading between baseline and intervention.

Limitations and Future Research

The greatest limitation of this study is that an AB design was used; therefore, a functional relation cannot be determined. The intention was to use a multiple baseline across participant’s design, however time constraints were a large factor in deciding to use an AB design. The experimenter was the students’ intervention specialist and she was only able to see the students every other day for 10 to 15 minutes. The study took place at the end of the year and therefore there were other factors such as students needing to complete other work, assemblies, field trips, etc. that took time away from the study.
Therefore, if the students did not all enter intervention at the same time there was a high chance the final student would not have had very many sessions in intervention. For ethical reasons, the experimenter wanted each student to have time in intervention to increase their reading fluency by as much as possible by the end of the year. Future research should try setting the study during a time of the school year where there is enough time to collect adequate data for a multiple baseline across students’ design.

A second limitation of the study is a change of repeated reading protocol from the Alber-Morgan et al. 2007 study. In the Alber-Morgan et al. 2007 study, students did 2 one-minute timings during intervention following the initial read with error correction. However, in the present study, the students did only 1 one-minute timing following the initial read with error correction. Again, time constraints were a factor in this study. The experimenter had only 10 minutes every other day with each student. Also, the time the experimenter had with the students was during a supplemental period for students with disabilities and she had several other students in the classroom she was responsible for. However, even though the students only had 1 one-minute timing, progress was still made. Future research should compare how many times the students need to reread the passage for optimal results, especially in secondary classrooms where time constraints are a factor.

A third limitation was that it may have been easier to answer the comprehension questions for some passages more than others. Even though all of the who, what, where, when, and why questions could be answered for each passage, in some of the passages it
was more clear who the characters were, where the story took place, and when the story took place. Future research should find a way that all passages are of equal difficulty. Also, the generalization probes could have been switched between baseline and intervention so that one or two of the students had the intervention probe during baseline and the opposite probe during intervention.

A fourth limitation of the study is that it did not control for students’ background knowledge from other classes. As a result, certain student may have had an advantage for some of the reading passages based on their previous knowledge, especially the nonfiction passages used for generalization. Future research should attempt to control for background knowledge by checking with the students’ teachers and choosing passages that cover a subject matter that is new to each of the students. The experimenter could also give a pre-test where they test students’ knowledge of different subject matters and choose a subject that each student had a low knowledge base.

A final limitation of this study is that it only used three middle school students with learning disabilities in a large Midwestern school district. Future research should explore repeated readings with a larger number of participants. Research should also include participants of different gender, ages, and races.

**Implications for Practice**

Students in middle school and high school are often not given proper reading instruction due to lack of secondary teacher training and lack of time in the classroom. Repeated readings is a quick, and easy instructional tool that secondary teachers are able
to use their classroom. The amount of training that goes into repeated readings is minimal and teachers would only have to work with students for 10 to 15 minutes a few times a week to see increases in reading fluency.

Even though repeated readings is an efficient intervention, time constraints are always an issue in classrooms as was evident in the present study. Teachers could implement repeated readings using peers so that less time is needed for one-on-one instruction by the classroom teacher. It would take little time and resources to train peers to do repeated readings with each other. Teachers could use this method in a large classroom as well.

Repeated readings do not have to only occur in special education or reading classrooms. Regular education teachers teaching content classes can also use this method to aid in students’ fluency, but also increase students’ comprehension of content material. If teachers took 7 to 10 minutes at the beginning of class, they could have students do a repeated reading of an overview of content they will learn in class that day or a review of content they learned the day before with peers.

Repeated readings may become frustrating or tedious for some students. They may become bored by rereading the same passages. Therefore, a reinforcement system may be necessary to keep students engaged. Some students are reinforced by simply seeing their continuous progress graphed out for them. However, other students may need other incentives such as tangible prizes, free time, less homework, etc. Teachers can find out what is motivating for students through preference assessments. They can then use
those rewards to reinforce repeated readings. For example, if the student increases their number of correct words per minute three consecutive sessions in a row they could earn a reward.
References


### Appendix A

**Procedural Checklist Baseline**

**Procedural Checklist-Baseline**

<table>
<thead>
<tr>
<th>Step</th>
<th>YES</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place reading passage in front of student.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt: “I would like you to read this passage to me. When you are ready to begin, you may start reading.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start 1 minute timer when student says the first word.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follow on answer key as student reads the passage. Put a slash through any words the students skips or pronounces incorrectly.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If the student stops on a word for longer than 3 seconds, tell the student the word and count that word as an error.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If the student inserts a word, no error is counted.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>When the timer goes off say “Stop, good work.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count the total number of words the student read in 1 minute.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count all of the errors.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subtract the number of errors from the total number of words read in order to obtain the number of words read correctly.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix B

Procedural Checklist Intervention

<table>
<thead>
<tr>
<th>Step</th>
<th>YES</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place reading passage in front of student.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt: “I would like you to read this passage to me. When you are ready to begin, you may start reading.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follow on answer key as student reads the passage. Put a slash through any words the students skips or pronounces incorrectly.</td>
<td></td>
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<tr>
<td>If the student stops on a word for longer than 3 seconds or mispronounces a word, tell the student the word and count that word as an error. Have the student repeat the word until they say it correctly.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Praise the student if they repeat the word correctly. “Great job saying that word.”</td>
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<tr>
<td>Once the student completes the entire reading passage, have the student review each of the error words in the passage. Point to each word and ask the student to say the word “What is this word?”</td>
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<tr>
<td>If the student responds correctly, praise the student (“Good job remembering that word.”) If the student</td>
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<tr>
<td>Responds incorrectly or did not respond, read the word and prompt the student to repeat the word. Praise the student.</td>
<td></td>
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<tr>
<td>---</td>
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</tr>
<tr>
<td>Following the initial reading with error correction, ask the student to read the same passage and see how many words they could read in 1 minute. Place reading passage in front of student.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prompt: “I would like you to read this passage to me. When you are ready to begin, you may start reading.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start 1 minute timer when student says the first word.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follow on answer key as student reads the passage. Put a slash through any words the student skips or pronounces incorrectly.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If the student stops on a word for longer than 3 seconds, tell the student the word and count that word as an error.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If the student inserts a word, no error is counted.</td>
<td></td>
<td></td>
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<tr>
<td>When the timer goes off say “Stop, good work.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count the total number of words the student read in 1 minute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count all of the errors</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Subtract the number of errors from the total number of words read in order to obtain the number of words read correctly.

Report the number of words read correctly to the student.

After the 2nd reading, read the provided reading comprehension questions out loud to the student one at a time.

Record the student’s responses on the provided lines.

Compare the student’s responses to the answer key.

Divide the number of correct responses by the total number of questions.

Record the percentage of correct response.
Appendix C

Social Validity Questionnaire

Repeated Readings

1 strongly disagree, 2 disagree, 3 neutral, 4 agree, 5 strongly agree.

Please circle one number for each statement.

This study helped my reading performance.

1 2 3 4 5

I enjoyed doing repeated readings.

1 2 3 4 5

I disliked doing repeated readings.

1 2 3 4 5
Appendix D

Reading Comprehension (Fiction)

Grade 8 Passage 17

1. Who are the characters?

2. What are three events that happen in the story in order?

3. Where did the story take place?

4. When did the story take place?

5. Why does Madam Zelda like her work so much?

Who are the characters? Madame Zelda
What are three events that happen in the story (Any three in order)? Any three events in order from the passage.
Where did the story take place? Manhattan
When did the story take place? During the day
Why were people mad at Lewis Holt? She loves making her customers happy
Appendix E

Reading Passage (Fiction)-Teacher Copy

Answer Key

After moving to a new town, nine-year-old Samantha and her twelve-year-old brother Robert had heard of an old toboggan slide from some of the other neighborhood children. They decided they needed to check it out. Supposedly, it was on the northern side of the peninsula in the middle of the lake behind their new home.

Paddling lazily, they headed across the lake in their canoe. Just as they had been told, there was the decrepit, wooden-framed toboggan slide. The slide itself was barely wide enough to fit a toboggan. It left only a couple of inches to spare on either side before adjoining a short, wooden sidewall about six inches in height that kept the toboggans from falling off. Hundreds of steep steps climbed the shoreline to the top of the slide. Looking down from the top, it was evident that the slide abruptly ended approximately six feet above the water.

Since they didn’t have a toboggan, they improvised with a piece of cardboard. Robert went first and flew down the slide. He used his feet against the side rails to stop the contraption before catapulting himself into the muddy water below. Samantha went next but her momentum was too great and she shot off the edge into the water. Samantha’s immediate thought after bobbing to the surface was “Blood-suckers!” Her second thought was, “This is all Robert’s fault!” She frantically climbed out of the water and ripped off her socks and shoes to look for blood-sucking worms. After finding none, but fearing they were still lurking in her shoes, she refused to put them back on.

“Put your shoes on,” Robert insisted. “Put your shoes on or you’ll never be able to walk back to the canoe.” Samantha refused. Finally, either from a desire to be gallant or from fear of repercussions from their parents, Robert picked up Samantha. He carried her to the canoe and quickly paddled home. After a steamy bath and the reassurance that there weren’t any blood-sucking worms hidden anywhere, Samantha told the story to their parents with a great deal of enthusiasm. She forgot entirely that she had originally blamed Robert for everything and made him the hero of her story.

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After moving to Grade 8, Passage 4
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Appendix F

Reading Passage (Fiction)-Student Copy

Student Copy

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The Hubble Space Telescope
By Cindy Grigg

5 Telescopes let us look at the stars and planets. Telescopes on Earth must be located where there are few city lights. The air must be as clean and clear as possible. Still, waves of light change as they pass through Earth’s atmosphere. This changes the way things look through a telescope on Earth. To solve this problem, a telescope was launched into space.

2 The Hubble Space Telescope was launched by NASA in 1990. It’s a very large telescope! It weighs as much as two elephants. It’s as long as a large school bus. It orbits the Earth at about 300 miles per hour, 380 miles above the Earth’s surface.

3 The giant telescope was named for astronomer Edwin Hubble. In 1925 Hubble discovered that there were many more galaxies beyond ours. Up until that time, it was thought that our Milky Way Galaxy was the whole universe. Edwin Hubble’s work led to the idea that the universe is getting bigger. Galaxies are moving farther apart. This idea led to the Big Bang Theory. It also let scientists guess the age of the universe. They believe the universe is 13 to 14 billion years old.

4 The Hubble Space Telescope takes pictures of planets, stars, and other galaxies. With Hubble, astronomers have seen the birth and death of stars. Hubble has taken pictures of galaxies that are billions of light years from Earth. Hubble has showed scientists evidence of black holes. It also helped to discover dark energy. This strange force seems to make the universe expand at a faster rate as time goes on. The Hubble Space Telescope gives astronomers eyes in the sky. With Hubble, astronomers can see farther and more clearly than they could see using a telescope on Earth. Who knows what new things may be discovered with the help of the Hubble!

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Appendix H
Reading Comprehension (Generalization)

The Hubble Space Telescope

1. How big is the Hubble Space Telescope?

2. Why is the Hubble Space Telescope better than a telescope here on Earth?

3. How old do scientists think our universe is?
   - 13 to 14 million years old
   - 13 to 14 trillion years old
   - 13 to 14 billion years old

4. With the help of the Hubble Space Telescope, what have scientists discovered?
   - Evidence of black holes
   - Dark energy
   - The birth and death of stars
   - All of the above

5. Edwin Hubble discovered ______.
   - There were other galaxies besides the Milky Way Galaxy
   - The Big Bang Theory
   - Proof of dark energy
   - All of the above

Answer Key

1. As long as a large school bus and as heavy as two elephants
2. With Hubble, astronomers can see farther and more clearly than they could see using a telescope on Earth.
3. 13 to 14 billion years old
4. All of the above
5. There were other galaxies besides the Milky Way Galaxy