

REPEATED READING AS AN INTERVENTION FOR HIGH SCHOOL STUDENTS
IDENTIFIED WITH A SPECIFIC LEARNING DISABILITY

A DISSERTATION

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BY

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DEDICATION

This is dedicated to my wonderful husband, Mike, my beautiful children, Jason, Jessica, and Shannon, and their sweet families, Luis, Angel, Sara, Evan, Lucy, and Carsen. I thank God every day for blessing me with you.

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ABSTRACT

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Poor reading skills can impact high school students identified with a specific learning disability and affect overall academic achievement. This is due in part to secondary-level academic requirements with limited opportunities for remediation. Reading deficits can persist into adulthood, often resulting in lower family socioeconomic status, fewer educational opportunities, and limited opportunities for competitive employment. This study used a multiple-baseline across participants design to measure the effectiveness of repeated reading as a strategy to improve reading fluency with high school students who have been identified with a specific learning disability.

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CHAPTER I

INTRODUCTION

Poor reading skills can impact high school students who have been identified with a specific learning disability. While literacy demands increase as students reach high school, ninth graders who enter high school with reading problems typically leave high school with reading problems (International Reading Association, 2012). In 2015, the Nation's Report Card (National Center for Educational Statistics [NCES], 2015) reported 38% of the 2013 high school graduates demonstrated reading skills at or above a level of proficiency. This is the same percentage as those who graduated in 2009 and essentially the same as the 40% reported in 1992. The Office of Special Education Programs (OSEP, 2015) reported 29.1% of students with a disability who graduated in 2013 performed at a proficient level of reading competency. With national statistics reporting approximately 25% of adults read at a fourth-grade level, the indication is core reading deficits can persist into adulthood and affect postsecondary outcomes (Lovett, Lacerenza, De Palma, & Frijters, 2012; Miller et al., 2006). Finding effective reading remediation while students are still attending high school is imperative.

While reading problems at the secondary level are diverse and frequently more severe than at the elementary level, reading instruction and remediation do not typically take place in the high school setting (Hawkins, Hale, Sheeley, & Ling, 2011; Paige, Rasinski, & Magpuri-Lavell, 2012). Because of this, weaknesses tend to persist and high

school students who struggle with poor reading skills continue to demonstrate reading related weaknesses such as limited vocabulary, lack of background knowledge, and weak comprehension strategies (Barth, Catts, & Anthony, 2009; Hawkins et al., 2011; Wexler, Vaughn, & Roberts, 2010). Students identified with a learning disability in reading are at a greater disadvantage as they may encounter more words they cannot read by sight and rely on guessing based on the context of the passages (Torgesen et al., 2001). These weaknesses are compounded due to the increased amounts of content reading and the high level of expectations in vocabulary knowledge needed to progress in high school classes.

In 2000, the National Reading Panel (NRP, 2000) published a report regarding reading development and instruction and identified five essential components of reading achievement: phonemic awareness, phonics, vocabulary, oral reading fluency, and comprehension. Of the components identified, oral reading fluency (ORF) is considered a central part of the underlying process of reading proficiency and overall reading achievement (Barth et al., 2009; Hawkins et al., 2011). Studies identifying evidence supporting the influence of ORF on reading comprehension and overall reading achievement (Lo, Cooke, & Starling, 2011; Schwanenflugel et al., 2009) led to a shift in understanding the importance of ORF in the reading process. The reauthorization of the Individual with Disabilities Educational Act (IDEA) in 2004 included weaknesses in reading fluency as an eligibility criterion for identification of a specific learning disability (SLD).

For this study, ORF is defined as “the ability to read text aloud with accuracy, speed, and proper expression” (NRP, 2000, p. 18). Students who demonstrate weaknesses in reading fluency miss out on text exposure and word reading practice, limiting development of word knowledge and text comprehension (Chard, Ketterlin-Geller, Baker, Doabler, & Apichatabutra, 2009). There are a plethora of interventions available for remediation of reading fluency, however not all are effective or have peer-reviewed research documenting their effectiveness. The NRP (Shanahan, 2005) reported the most effective intervention for reading fluency includes oral reading practice with repetition of text that includes guidance from a listener who can provide appropriate and accurate corrective feedback.

Repeated reading is one of the most commonly recommended interventions for students who are weak in oral reading fluency (Hawkins et al., 2011; Ring, Barefoot, Avrit, Brown, & Black, 2013), with students showing significant gains in both words correct per minute (WCPM) and reading comprehension (Schwanenflugel et al., 2009). The basis of this intervention requires the student to reread a short passage aloud multiple times to either a teacher or tutor until the student reaches a predetermined criterion of words read correctly (Lo et al., 2011; Samuels, 1997). With repetition, the likelihood of recognizing the words when later encountered increases, therefore building automaticity of text (Chard et al., 2009; Kuhn, Schwanenflugel, & Meisinger, 2010). Also, with each additional reading, comprehension of text increases as the student is spending less time decoding to identify words and more time gaining meaning from the passage (Samuels, 1997).

Definition of Terms

1. Admission, Review, and Dismissal (ARD) Committee – An Admission, Review, and Dismissal committee “is the individualized education program (IEP) team defined in federal law and regulations, including, specifically, 34 Code of Federal Regulations (CFR), §300.321” (TEA, 2016, p. A-16). The ARD committee develops, reviews, or revises an IEP for each student with which a full and individual evaluation has been conducted and a disability has been identified (TEA, 2016). The ARD term is used in Texas to designate the IEP committee.

2. Flesh Reading Ease – Readability formula that generates the readability ease and approximate reading grade level based on the number of sentences, words, syllables, and characters in the sample. Readability numbers range from 0 through 100; the higher the number the easier the text. For example, a reading ease of 90 is approximately a fifth grade reading level, with a reading ease of 60 at approximately a ninth grade level. This is one of the most common formulas used and can be found in Microsoft Word when utilizing the spelling and grammar check function (Burke & Greenberg, 2010).

3. Individual Education Plan (IEP) – “A written statement for a child with a disability that is developed, reviewed, and revised in accordance with §§300.320 through 300.324” (TEA, 2016, p.A-14).

4. Individuals with Disabilities Education Act 2004 – A collection of federal regulations to help ensure students with disabilities receive a fair and appropriate public education in the least restrictive environment (IDEA, 2004).

5. Instructional reading level – Level of reading material of which a student is able to orally read text with 95% accuracy (Pikulski, 1990).

6. Multiple Baseline across participants – A single-subject research design that addresses the impact an independent variable (repeated reading) has on the dependent variable (words correct per minute). With this design, a functional relationship is demonstrated when baseline data is stable and WCPM (words correct per minute) changes when the independent variable is applied (Alber-Morgan, Ramp, Anderson, & Martin, 2007).

7. Oral Reading Fluency – The ability to orally read connected text with appropriate rate, accuracy, and expression (NRP, 2000).

8. Prosody – Oral reading of connected text that includes appropriate expression with pitch and intonation (Musti-Rao, Hawkins, & Barkley, 2009).

9. Repeated Reading – A reading intervention delivered by an individual that can give proper corrective feedback and requires the student to re-read a passage for a set number of times, or until a predetermined criterion is met (Lo et al, 2011; Samuels, 1979).

10. Scholastic Reading Inventory – a computerized reading assessment that measures reading levels of students in grades kindergarten through the 12th grade (National Center on Intensive Intervention at American Institute for Research).

11. Specific Learning Disability (SLD) – In the state of Texas, a student who has been identified with SLD is one who is not performing at the same rate and level as their

same aged peers in the areas of oral expression, listening comprehension, written expression, basic reading, reading fluency, reading comprehension, mathematics calculation, or mathematics problem solving despite receiving appropriate instruction and intervention, demonstrates a pattern of strengths and weaknesses in both cognitive and academic achievement, and demonstrates a need for specially designed instruction in order to progress in the academic setting (TEA, 2016).

12. Struggling readers – Students who have been identified as low achievers, with dyslexia, and/or with a specific reading disability, and/or demonstrate unidentified reading difficulties (Edmonds et al., 2009).

13. Texas Education Agency (TEA) – State board of education primarily responsible for supervision and regulation of all primary and secondary public education in the state of Texas (TEA, 2016).

14. Words correct per minute (WCPM) – The number of words a student can read correctly in one minute. This includes words the student is able to independently read within 3 seconds without prompting and mispronunciations with corrections made within 3 seconds (Alber-Morgan et al, 2007).

Statement of Purpose

Due to increased expectations in word knowledge and core curriculum at the secondary level, research is needed to evaluate the effectiveness of repeated reading as an intervention to help build reading fluency skills for high school students identified with SLD. Thus, the purpose of this study is to extend the research on the effectiveness of

repeated reading as an intervention for building oral reading fluency skills for high school students identified with SLD and struggle with reading weaknesses.

CHAPTER II

REVIEW OF LITERATURE

The repeated reading method of remediation emerged mainly from LaBerge and Samuels' (1974) theory of automatic processing which suggests a student can only attend to one thing at a time but is able to process several things simultaneously as long as only one requires the student's attention. Repetition of text encourages automaticity by transferring attention to the recognition of visual representations of a word, word groups, or short phrases, allowing the reader to direct attention to gaining meaningfulness from the text (LaBerge & Samuels, 1974). Thus, a fluent reader is able to automatically identify words, allowing the student to focus attention on gaining an understanding of the text (Samuels, 1997).

In 2000, the National Reading Panel (NRP) conducted an extensive review of the literature to examine the effectiveness of repeated reading as an instructional approach for the development of oral reading fluency. Conducting a meta-analysis of 77 articles, the authors for the NRP identified evidence of support for repeated reading as an instructional approach. Their report suggested utilizing repeated reading as a method of remediation has a "consistent, and positive impact on word recognition, fluency, and comprehension as measured by a variety of test instruments" (p. 3-3), for students in elementary through high school with generalization to other texts (Shanahan, 2005). Likewise, researching studies regarding repeated reading as an effective intervention, What Works Clearinghouse identified two studies of repeated reading that met their

group design standards and included students in grades 5 through 12 who were identified with an SLD. While their results showed a rating of *no discernible effects* on reading fluency and overall reading in general, the effect size was large enough to be considered a *potentially positive effect* for reading comprehension (Institute of Education Sciences, What Works Clearinghouse, 2014).

A meta-analysis conducted by Therrien (2004) reported interventions such as repeated reading improve reading fluency and comprehension skills for students identified with a learning disability. While the articles included in Therrien's study did not contain control group comparisons, the study indicated repeated reading demonstrated a large effect size with reading fluency and moderate effect size with comprehension for new material when the intervention is delivered by an adult and included corrective feedback (Therrien, 2004). However, articles included in Therrien's study did not describe the age or grade level of the participants for each study; it only indicated participants were school-aged.

In an effort to synthesize reading intervention research that focused on older students (Grades 6 through 12), Edmonds et al. (2009) conducted a meta-analysis of 29 studies published between 1994 and 2004. Their analysis suggested word-level interventions for students who required intensive instruction result in a small to moderate influence on comprehension but do not always lead to improved overall reading achievement. In fact, they suggested reading instruction that focused more on building comprehension strategies rather than on fluency or decoding skills would have a greater effect for older struggling readers.

Examining the effects of repeated reading for secondary level students, Wexler et al. (2010) synthesized research published between 1980 and 2005 that focused on the effectiveness of fluency interventions for students in grades 6 through 12. Research suggested while fluency rates on practiced passages with a high degree of word overlap increased, there was little generalization of skills to other reading tasks for secondary level students who participated in a repeated reading intervention. Additionally, the correlation of oral reading fluency and comprehension appears to decrease as the student ages and text becomes more complicated. The authors suggested students would benefit more from spending time reading different text content and focusing on developing comprehension skills rather than participating in a repeated reading intervention. However, their synthesis included students identified with various disabilities (i.e. intellectual disabilities, learning disabilities, and emotional disturbance), and students identified as struggling readers, or as low achievers, thus representing a range of students with exceptionalities.

Measuring the effects of repeated reading on oral reading fluency for students with reading disabilities, Lee and Yoon (2015) conducted a meta-analysis of dissertations, conference proceedings, and peer-reviewed journal articles published between 1990 and 2014. The authors reported repeated reading was more effective for elementary students than for secondary students, especially when combined with listening passage preview with four repetitions. This study included students identified with a learning disability and students considered at-risk for a reading disability "...due to equivalence in academic characteristics and response to intervention". Thus, studies

were combined that included students who received services through special education and identified with a disability (i.e. intellectual disability, specific learning disability, or emotional disturbance), with students who had not been identified with a disability to measure effectiveness of repeated reading as an intervention.

Repeated Reading

To identify relevant studies that utilized a multiple-baseline across participants research design in this review, criteria were established. Studies were eligible for consideration if (a) interventions included repeated reading of connected text, (b) students included those who were identified with a specific learning disability (SLD) and as a struggling reader, (c) the dependent variable included oral reading fluency, words per minute (WPM), or words correct per minute (WCPM), (d) the study was published in a scholarly, peer-reviewed journal, (e) the study used a multiple-baseline across participants or students research design, and (f) studies were conducted between 1996 and 2016.

Based on the established criteria, two different searches were conducted to ensure identification of relevant studies. First, an electronic search using several academic search engines was conducted; (a) Academic Search Complete, (b) ERIC, (c) PsycARTICLES, (d) PsycINFO, (e) Psychology and Behavioral Sciences Collection, (f) Research Starters-Education, and (g) Teacher Reference Center. The following keywords were used with the search engines: (a) oral reading fluency, (b) reading fluency, (c) repeated reading, (d) interventions, (e) reading rate and accuracy, (f) learning disabilities and (g) continuous reading. This electronic search initially resulted in 5,348 relevant

articles. A screening was conducted to examine if the articles met the criteria by reviewing titles and abstracts.

As a result of this screening, 55 relevant articles were identified. All articles retained were carefully examined resulting in nine relevant studies that met all criteria. A manual ancestral search was then conducted using the reference lists of electronically identified meta-analyses or synthesis regarding repeated reading and seminal studies (Chard et al, 2009; Edmonds et al., 2009; Kuhn & Stahl, 2003; Lee & Yoon, 2015, Stevens, Walker, & Vaughn, 2016; Strickland, Boon, & Spencer, 2013; Therrien, 2004) to further locate relevant studies. This screening process yielded an additional three articles, resulting in a total of 12 relevant research studies for this literature review.

The 12 studies that met the inclusion criteria and constituted the sample for this review are illustrated in Table 1. Table 1 reports the number and age of participants, dependent variables, repeated reading conditions, and results for each. All but one study included more than one dependent variable with all including oral reading fluency, WPM, or WCPM. All studies were published between 2003 and 2014 in peer-reviewed journals, included a repeated reading condition as an independent variable, and utilized original data collected by the respective study authors.

Table 1

Summary of Results and Key Findings

| Results | RR Condition | Dependent Variable | Age/Grade | Participants | (Date) Authors |
|---|---|--|-------------------------------|---|---------------------------|
| Three of the students increased WCPM; student with ID dropped out after baseline. No noticeable gains in comprehension. | W/contingent reward until criterion met. | WCPM and comprehension | 15-18/high school | 4 students; three identified with SLD, one with ID, all identified as struggling readers. | (2003) Valleley & Shriver |
| All increased WCPM and reduced EPM. Gains were noted in WCPM after RR with error correction introduced. | w/error correction for 6 minutes | WCPM and EPM | 8.2-9.6/ elementary school | 4 students; three identified with SLD, one with OHI, all identified as struggling readers. | (2004) Nelson |
| 4 of the 6 students increased WCPM; all increased comprehension. The 2 who did not show an increase were initially at a higher level than the other students. No measure of generalization. | W/peer-paired readings and correction until read passage 4 times. | WCPM and comprehension | 12-14/ middle school | 6 students; three identified with SLD, two with ED, one with OHI, all identified as struggling readers. | (2004) Strong et al. |
| All students increased WPM, accuracy, and comprehension. All generalized to unpracticed passages. | w/peer paired with error correction | WPM, accuracy, comprehension | 9.10-11.10/ elementary school | 6 students; five identified with ED, one with SLD, all identified as struggling readers. | (2005) Staubitz et al. |
| All students increased WCPM and comprehension and decreased EPM. RR to criterion best overall results. | W/vocabulary preview and error correction until criterion met. | WCPM, EPM, reading rate, and comprehension | 9.4-11.1/ elementary school | 5 students; two identified SLD, one with DD, all identified as struggling readers. | (2006) Tam et al. |

(Continued)

| | | | | | |
|---|---|----------------------------------|-------------------------------|---|-----------------------------------|
| All but one student increased WPM, all increased comprehension and accuracy. No measure of generalization. | W/peer pair, error correction, and reinforcement until criterion met. | WPM, accuracy, and comprehension | 10.7–11.11/ elementary school | 8 students; two identified with SLD, all identified as struggling readers. | (2006) Yurick et al. Experiment 1 |
| All students increased WPM, accuracy, and comprehension. All but one student showed increase in generalization to unpracticed passages. | W/peer pair and error correction until criterion met. | WPM, accuracy, and comprehension | 9.9-10.11/ elementary school | 6 students; one identified with SLD, 1 with SI, all identified as struggling readers. | (2006) Yurick et al. Experiment 3 |
| 3 out of 4 showed moderate improvement in WCPM. One was reading at a higher level and did not show a functional relationship. All 4 decreased EPM. Prediction did not affect fluency. No measure of generalization. | W/error correction, performance feedback and prediction until read passage 2 times. | WCPM, EPM, and comprehension | 12-15/ middle school | 4 students; two identified with SLD, two with ED, all identified as struggling readers. | (2007) Alber-Morgan et al. |
| All students increased WCPM. However, this did not transfer to new passages. Results showed a reliable treatment effect for only 4 of the 12 students. | W/peer-paired with error corrections and reinforcement component until criterion met. | WCPM | 9-12/ elementary school | 12 students; three identified with SLD, one with ED, one with OHI, and one with CD, all identified as struggling readers. | (2009) Musti-Rao et al. |
| All students made gains in ORF and comprehension. | W/peer mediation and error correction with 3 readings. | ORF and comprehension | 9/ elementary school | 4 students; one identified with SLD, all identified as struggling readers. | (2010) Oddo et al. |

(Continued)

| | | | | | |
|--|--|------------------------------------|----------------------|---|---------------------------|
| All students improved WCPM. EPM did not decrease for all students. 6 showed generalization to unpracticed text. All increased oral retell fluency. | W/error correction until criterion met. | WCPM, EPM, and oral retell fluency | 12-13/ middle school | 7 students; six identified with SLD, one with ED, all identified as struggling readers. | (2011) Kostewicz & Kubina |
| All increased WCPM with mixed results on comprehension. | W/peer paired, error correction, and corrective feedback | WCPM, EPM, comprehension | 16-17/high school | 4 students; one identified with SLD, all identified as struggling readers. | (2016) Josephs & Jolivet |

Note. CD = cognitive disabilities; ED = Emotional Disability; EPM = errors per minute; DD = Developmental Disability; OHI = Other Health Impairment; ORF = oral reading fluency; RR = Repeated Reading; SLD = Specific Learning Disability; WCPM = words correct per minute; WPM = words per minute.

Seven of the 12 studies encompassed students attending elementary school which included grades kindergarten through fifth (Musti-Rao et al., 2009; Nelson, Alber, & Gordy, 2004; Oddo, Barnett, Hawkins, & Musti-Rao, 2010; Staubitz, Cartledge, & Yurick, 2005; Tam, Heward, & Heng, 2006; Yurick et al, 2006), three comprised middle school students which included grades sixth through eighth (Alber-Morgan et al, 2007; Kostewicz & Kubina, 2011; Strong, Wehby, Falk, & Lane, 2004), with two including high school students which included grades ninth through twelveth (Josephs & Jolivette, 2016; Valleley & Shriver, 2003). While all studies encompassed students who were identified with an SLD and demonstrated reading related weaknesses, all studies included in this literature review included students identified with other disabilities (i.e., autism, speech impairment, etc) and students without disabilities.

While all studies included in this review differed in the instructional conditions used with the repeated reading intervention, no study delivered the repeated reading intervention without an instructional condition (e.g. error correction, peer-paired, reinforcement). All but one of the studies included a repeated reading with error correction condition (Valleley & Shriver, 2003). Seven of the studies utilized repeated reading with a peer-paired or peer-mediated condition (Josephs & Jolivette, 2016; Musti-Rao et al, 2009; Oddo et al, 2010; Strong et al, 2004; Staubitz, 2005; Yurick et al, 2006). Three of the studies included repeated reading with performance feedback as a condition (Alber-Morgan et al, 2007; Josephs & Jolivette, 2016; Kostewicz & Kubina, 2011), three of the studies included some type of tangible reward or reinforcement (Musti-Rao et al, 2009; Valleley & Shriver, 2003; Yurick et al, 2006), and one study utilized a listening

passage preview condition (Tam, 2006). All studies included oral reading fluency, WPM, or WCPM as a dependent variable, with six studies including EPM (errors per minute), and ten studies measuring comprehension as dependent variables.

Repeated Reading with Error Correction/Corrective Feedback

Repeated reading with error correction was the most heavily researched intervention condition with 11 of the 12 studies including this condition. While not all studies utilizing this condition reported an increase in WCPM for all participants, all studies indicated all participants who had been identified with SLD demonstrated an increase in WCPM (Alber-Morgan et al, 2007; Josephs & Jolivette, 2016; Kostewicz & Kubina, 2011; Musti-Rao et al, 2009; Nelson et al., 2004; Oddo et al, 2010; Staubitz et al, 2005; Strong et al, 2004; Yurick et al, 2006). Furthermore, of the 70 total participants in studies participating in the repeated reading with error correction condition, 65 (93%) of those participants demonstrated increases in WCPM.

Comprehension results were inconsistent with eight of the nine studies that measured the impact of the repeated reading with error correction condition on comprehension, documenting improvements in some of the participant's abilities to answer questions or retell the story (Alber-Morgan et al, 2007; Josephs & Jolivette, 2016; Oddo et al, 2010; Staubitz et al, 2005; Strong et al, 2004; Tam et al, 2006; Yurick et al, 2006). In regards to increasing WCPM with unpracticed passages, four out of the five studies that measured WCPM with unpracticed passages indicated students were able to maintain increases in reading fluency and comprehension (Kostewicz & Kubina, 2011; Musti-Rao et al, 2009; Staubitz et al, 2005; Tam et al, 2006; Yurick et al, 2006).

Peer-Mediated Repeated Reading

Peer-mediated, or peer-paired, was the second most researched condition utilized when measuring the effects of repeated reading with seven of the studies included in this literature review incorporating this condition (Josephs & Jolivette, 2016; Musti-Rao et al, 2009; Oddo et al, 2010; Staubitz et al, 2005; Strong et al, 2004). This condition was not delivered alone, rather studies that utilized peer-mediate repeated reading paired it with a reward or reinforcement for participation and/or error correction or corrective feedback. Of the 46 participants, 43 (93%) did show some improvement in WPM, WCPM, and accuracy. However, comprehension and WCPM with unpracticed passages were inconsistent. Additionally, according to Musti-Rao et al., (2009) results showed a reliable treatment effect for 4 of the 12 students. Furthermore, all but one study (Oddo et al, 2010) indicated results may have been negatively affected by using a peer-mediated condition due to absences, behavioral and participation concerns, differences in reading level, and differences in level of response to the intervention.

Repeated Reading with Reward/Tangible Reinforcement

Repeated reading with reward or tangible reinforcement was the next researched condition with three of the studies comprising this condition in their investigation (Musti-Rao et al., 2009; Valleley & Shriver, 2003; Yurick et al., 2006). While not all participants included in these studies improved WCPM, only two participants did not show an increase in WCPM from baseline to intervention. The two studies that measured WCPM with unpracticed passages and comprehension results were inconsistent with Yurick et al., (2006) reporting an increase in both areas, and Valleley and Shriver (2003) reporting

an increase in WCPM with unpracticed passages but no noticeable gains in comprehension.

Valleley and Shriver (2003) were the only researchers that used the reward or tangible reinforcement condition alone with the repeated reading intervention. This was due to the participants residing in a residential treatment facility that specialized in working with students with behavioral concerns. According to Valleley and Shriver (2003) results of this study showed a noticeable increase in WCPM with practiced and unpracticed passages with grade level text for all but one participant. While that student required immediate reinforcement to participate in the study, he did increase his WCPM an average of 15 points. Additionally, the authors reported two of the participants did not show a change in comprehension of text from baseline to intervention.

Repeated Reading with Performance Feedback

Alber-Morgan et al. (2007) utilized repeated reading with performance feedback condition. The authors utilized a multiple baseline with participant design to determine the effects of repeated reading with error correction and performance feedback and repeated reading with error correction, performance feedback, and prediction to determine the effects on WCPM, errors per minute (EPM), and comprehension. The performance feedback condition was delivered during the error correction condition. The examiner made corrections while the student read a passage and delivered praise everytime the student responded correctly. If a student did not produce a word correctly after the error correction, they were encouraged to keep trying. Praise was also delivered each time a student increased their words per minute during a session when compared to

the previous session. If no improvement was noted, the examiner encouraged the student work to increase their fluency level the next time the intervention was delivered.

Three of the four students participating in this study showed a moderate improvement in WCPM and a functional relationship between the repeated reading intervention and an increase in WCPM. The one student who did not show a functional relationship started the intervention reading at a higher level. For two of the students, errors per minute (EPM) showed an immediate decrease, with the other two students showing variability from baseline to intervention. Regarding comprehension, three of the students showed an immediate effect on their response to open-ended literal questions with little improvement on inferential questions (Alber-Morgan et al., 2007).

Repeated Reading with Vocabulary Preview

Tam et al. (2006) utilized repeated reading with the vocabulary preview condition. The authors utilized a multiple-baseline design to measure the effectiveness of repeated reading interventions for building reading fluency, vocabulary, and comprehension for five elementary students. All students in this study were identified as English Language Learners (ELL) and considered struggling readers, two were identified as students with an SLD and received supports through special education. Tam et al. (2006) utilized a repeated reading with vocabulary preview and error correction three times condition and a repeated reading with error correction until criterion met condition. While all students in this study increased WCPM and comprehension of passages, the authors indicated repeated reading until criterion met had a greater effect than when a student was asked to read a passage three times, as it gave students more opportunities to

practice unfamiliar text. Additionally, all but one student in this study met the predetermined fluency criterion of 100 words per minute suggesting when given a goal to meet, students will put more effort into reaching the goal (Tam et al., 2006).

Purpose of Current Study

Studies included in this literature review suggest repeated reading is an effective intervention for increasing oral reading fluency skills for struggling readers of all ages (Alber-Morgan et al, 2007; Josephs & Jolivette, 2016; Kostewicz & Kubina, 2011; Musti-Rao et al., 2009; Nelson et al., 2004; Oddo et al., 2010; Staubitz et al., 2005; Strong et al., 2004; Tam et al., 2006; Valleley & Shriver, 2003; Yurick et al, 2006). However, all studies included in this review delivered the repeated reading intervention along with other conditions (i.e., error correction, peer-mediated, reward/tangible reinforcement, performance feedback, and vocabulary preview). Additionally, only two studies which utilized a multiple-baseline across participants design focused on implementation of repeated reading as an intervention with high school students (Josephs & Jolivette, 2016; Valleley & Shriver, 2003).

Research shows utilizing an instructional method that requires a student to read a passage multiple times is beneficial to students with and without disabilities (Alber-Morgan et al., 2007). More research is needed to gain a better understanding of the effectiveness of repeated reading for students identified with a specific learning disability (Chard et al., 2009). Thus, this study can add to the body of knowledge that measures the effectiveness of repeated reading delivered without a paired condition with high school students who have been identified with a specific learning disability.

CHAPTER III

METHODOLOGY

Repeated reading is one of the most commonly recommended interventions for students who are weak in oral reading fluency (Hawkins et al., 2011; Ring et al., 2012), with students showing gains in both words per minute and comprehension (Schwanenflugel et al., 2009). While there are many studies regarding repeated reading, there are few studies which utilize a multiple-baseline across students design focusing on implementation of repeated reading as an intervention with high school students (Josephs & Jolivette, 2016; Valleley & Shriver, 2003). Thus, the purpose of this study was to extend the research on the effectiveness of repeated reading as an intervention for building oral reading fluency skills for high school students identified with SLD and struggle with reading.

Research Questions

1. What are the effects of a repeated reading intervention on WCPM with practiced passages for high school students identified with SLD?
2. What are the effects of a repeated reading intervention on WCPM with unpracticed passages for high school students identified with SLD?

Multiple-Baseline across Participants Research

According to Murphy and Bryan (1980), the multiple-baseline single-subject research design is appropriate for the educational setting and is easily learned and implemented by research staff. This design allows researchers to measure the

effectiveness of an intervention within a classroom environment without having the participants return to the baseline level of functioning (Barger-Anderson, Domaracki, Kearney-Vakulich, & Kubina, 2004; Murphy & Bryan, 1980). Additionally, according to Barger-Anderson et al., (2004) single subject multiple-baseline research designs are more acceptable when examining new techniques and strategies in the area of reading interventions. Furthermore, it is well suited for a small number of participants allowing for internal and external validity and study replication in order to demonstrate cause and effect relationships (Barger-Anderson, et al., 2004).

Setting

This study was conducted in a North Texas school district during the 2017/2018 school year. This district included 54 campuses and enrolled approximately 39,280 students; 39.5% Hispanic/Latino, 29.1% White, 21.1% African American, 7.1% Asian, .11% Pacific Islander, and .3% American Indian. Of these students, 54% were considered economically disadvantaged, 25.8% limited English proficient, and 10.5% were receiving services through special education (RISD, 2018). Prior to implementation, study design and procedures used in this study were screened, and permission granted by the Institutional Review Board (IRB) for Human Research Protection at Texas Woman's University (see Appendix A). Additionally, the Richardson Independent School District (RISD) and Richardson High School granted permission for this study to take place during the regularly scheduled school day (see Appendix B).

During the spring semester of the 2015/2016 school year, the school district administered the Scholastic Reading Inventory (SRI) to all high school students identified

with a disability and receiving services through special education. This assessment was carried out to determine an approximate level of reading achievement of students who have been identified with a disability to substantiate the need for high school reading classes delivered through special education. The computerized assessment suggested there were a number of students district-wide in grades nine through twelve who had been identified with a disability and receiving supports through special education, reading at or below a fourth grade reading level. Due to the number of below grade level readers at all four high schools within the school district, specially designed reading classes delivered by highly qualified, state certified special education teachers were developed and implemented in all four high schools during the 2016/2017 academic year.

The participating high school in this study enrolled 2,727 students in grades nine through twelve during the 2017/2018 school year. Ethnicity was as follows; Hispanic/Latino 42.5%, White 26.8%, African American 18.7%, Asian 7.6%, and American Indian .4%. Of these students 47.5% were considered economically disadvantaged, 6.4% were limited English proficient, and 8.2% received supports through special education (RISD, 2018).

The high school special education reading class involved in this study included nine students in grades 10 and 11, aged 15 through 17, who have been identified with a disability (e.g., SLD, intellectual disability, autism, other health impairment) and were considered struggling readers. The ethnic breakdown of students in this classroom included 22% African American and 78% Hispanic/Latino. Placement into this reading

class in the special education setting was based on the student’s IEP reading goals, reading levels, and Admission, Review, and Dismissal committee (ARD) decisions.

Participants

Students enrolled in the special education reading class in the participating high school were recruited to participate in this study. All nine students enrolled in the special education reading class were given the opportunity to volunteer for participation in the study. Seven students enrolled in this reading class returned the parental consents and signed the student assent to participate in this study. The ethnic breakdown of participating students in this study included 14% African American and 84% Hispanic/Latino (see Table 2).

Table 2

Demographic Information of Participating Students

| Student # | Sex | Age | Grade | Identified Disability | Reading Level | English Language Learner |
|-----------|-----|-----|-------|--|-----------------|--------------------------|
| A | F | 16 | 10 | Specific Learning Disability | 5 th | yes |
| B | M | 15 | 10 | Specific Learning Disability, and Other Health Impairment for ADHD | 4 th | no |
| C | M | 16 | 10 | Specific Learning Disability and Speech Impairment | 5 th | yes |
| D | M | 17 | 11 | Intellectual Disability and Speech Impairment | 3 rd | yes |
| E | M | 16 | 11 | Speech Impairment | 4 th | yes |
| F | F | 16 | 10 | Speech Impairment | 4 th | yes |
| G | M | 15 | 10 | Autism and Speech Impairment | 4 th | yes |

Once signed parental consents (see Appendix C) and signed student assents (see Appendix D) were obtained, the study commenced. The repeated reading sessions were a

regularly scheduled part of the reading instruction throughout the duration of the study. The repeated reading intervention was delivered during the participating student's regularly scheduled reading class by the researcher and a highly qualified special education reading teacher with training in delivering reading instruction. In the state of Texas, teachers were considered highly qualified if they hold a bachelor's degree, demonstrate specific content knowledge, and state certification in the instructional area they are teaching (TEA, 2018).

Prior to the start of the 2017/2018 school year, the researcher and the participating teacher reviewed the study design and the procedures, the steps in the administration, scoring, and record keeping of the repeated reading intervention. The researcher presented the teacher with a folder that included an example of a reading passage, repeated reading procedural checklist (see Appendix H), WCPM Daily Tracking form (see Appendix F), and a WCPM Progress Graph (see Appendix G). These were reviewed with the teacher and then the teacher and researcher walked through the procedures and practiced delivering the repeated reading intervention. The folder was given to the teacher to allow her to practice prior to the implementation of the study. The explanation of the study, introduction of the study procedures, and practice of the repeated reading intervention took approximately 30 minutes to complete with the teacher. During this training the teacher was given the opportunity to ask questions to gain clarification of procedures if needed.

Materials

Reading passages utilized during this study were taken from the *Education.com* website. Reading passages from this website were chosen because the website offered free educational tools and learning resources for parents and educators with lessons ranging from pre-kindergarten through high school. The readability level of each passage was determined by using the spelling and grammar check function key found in Microsoft Word (Burke & Greenberg, 2010). This function determined the approximate reading ease and grade level of a passage by analyzing the number of sentences, words, syllables, and characters. Reading passages utilized were based on the instructional reading level of the individual participant and ranged from 120 to 150 words. Each passage was typed in 12-point Times New Roman font, doubled spaced, and individually printed on white printer paper. The primary researcher produced reading passages (see Appendix E) prior to implementation of the study to have a new passage for each baseline and intervention session.

The next items developed for this study were the student WCPM daily tracking form (see Appendix F) and the WCPM progress graph (see Appendix G). The WCPM daily tracking sheet and the WCPM progress graph were prepared for gathering data and to use as a visual reference the WCPM performance for each student. The classroom teacher was also given a stop-watch to help with keeping accurate time when measuring each student's performance at the end of each session.

Each week the researcher provided the teacher with an unmarked folder for each participating student with four different passages based on the student's instructional

reading level. Three of the passages were for the repeated reading sessions. The fourth passage was for measuring WCPM with an unpracticed passage on the third day of intervention sessions for the week. The unmarked folder also included procedural checklists, the WCPM daily tracking sheet, and WCPM progress graphs. During the week the folders were kept locked in a cabinet, in a locked room, and picked up at the end of each week by the researcher.

Study Design

A multiple baseline across participants design was used to examine the effectiveness of repeated reading on increasing WCPM with practiced and unpracticed passages with high school students identified with a SLD. The multiple-baseline across participants design addressed the impact of the independent variable (repeated reading) upon the dependent variables (WCPM with practiced passages and WCPM with unpracticed passages) and allowed for a visual analysis of graphed data to be conducted by comparing intervention performance to baseline performance. With this design, a functional relationship was demonstrated when baseline data was stable and WCPM changed with the application of the independent variable (Alber-Morgan et al, 2007).

Independent Variable

The independent variable was the repeated reading intervention, in which participating students read an instructional level passage four times during each repeated reading session. Having the student read the passages four times was chosen based on Therrien's (2004) meta-analysis which indicated reading a passage four times has a greater effect on reading fluency than re-reading a passage two or three times.

Dependent Variables

The dependent variables were words correct per minute (WCPM) on practiced passages and WCPM on unpracticed passages. WCPM with practiced passages were measured during the first minute of the fourth read of the practiced passage (Chafouleas, Martens, Dobson, Weinstein, & Gardner, 2004; Welsch, 2007) during each repeated reading intervention session. WCPM on unpracticed passages were measured during the first minute of the first read of a unfamiliar passage (Kubina, Amato, Schwilk, Therrien, 2008) on the third day of the repeated reading intervention sessions.

Baseline

Each baseline represented WCPM on unpracticed passages for each student as measured by having at least three consecutive reading data points within 50% of the mean (Josephs & Jolivette, 2016). The primary researcher advised the teacher when baselines were established, and students were ready to enter the intervention phase. By week four of the study, all participating students had entered the intervention phase.

Inter-observer Agreement and Procedural Integrity

Inter-observer agreement and treatment integrity for WCPM was assessed throughout the baseline and intervention phases. Before implementing the study, the primary researcher trained the teacher on the exact procedures for introducing and conducting baseline sessions and implementation of the intervention phase. At the onset of the study, the researcher delivered the first baseline with Student A with the teacher observing. The researcher then observed the teacher the second day of the study to ensure understanding. Once Student A had demonstrated a stable baseline and was ready to enter

the intervention phase, the researcher delivered the first repeated reading intervention session with the participating teacher observing to model the procedures. During each intervention session, the teacher and researcher utilized a checklist to ensure adherence to established intervention and scoring procedures (Kubina et al., 2008).

Procedural integrity was assessed by the researcher reviewing the procedural checklist to assess the teacher's adherence to the study's procedures. Additionally, the researcher reviewed the scoring of each passage utilized for the repeated reading baseline and intervention phases.

Data Collection

Intervention sessions lasted approximately 5 to 10 minutes per student, depending on the student's daily performance, and scheduled to be conducted three days per week during the students regularly scheduled special education reading class. The repeated reading intervention was a regularly scheduled part of the student's daily reading class. The students individually worked with the teacher or the researcher during the repeated reading baseline and intervention sessions. Once baseline was established the researcher advised the teacher to implement the intervention phase of the repeated reading intervention for each participating student.

A pre-selected passage from the supply of 120 to 150 word instructional level reading passages was used during each baseline and intervention session. To determine instructional reading levels for each student, the participating students were asked to read a passage aloud to the teacher or researcher. The beginning reading level for this process was approximated based on their current level of reading in the classroom and then either

increased or decreased based on their reading performance. Instructional levels for this study were chosen based on the student's ability to read a passage with 95% accuracy (Pikulski, 1990).

During each intervention session, the participating student read a passage aloud to the teacher or researcher with miscues corrected. Miscues were defined as a word that was mispronounced, omitted, inserted, substituted, or not pronounced correctly within 3 seconds (Alber-Morgan et al., 2007). Self-corrections made within 3 seconds and repetitions were not counted as errors (Josephs & Jolivette, 2016). On the fourth reading of the passage the examiner utilized a stop-watch to measure WCPM for that passage. Reading rate was calculated by subtracting words read incorrectly from the total number of words read in one minute (Kostewicz & Kubina, 2011). The words read correctly per minute were reported to the student, noted on the student's WCPM daily tracking sheet, and graphed on the WCPM progress graph to illustrate progress. This process was utilized for subsequent intervention sessions with each participating student using a new instructional level reading passage for each session.

On the third day of each week, a one-minute timed reading with an unpracticed passage was conducted after the repeated reading intervention session. WCPM were reported to the student, noted on the student WCPM daily tracking sheet, and graphed to illustrate progress.

CHAPTER IV

RESULTS

The purpose of this study was to extend the research on the effectiveness of repeated reading as an intervention for building oral reading fluency skills for high school students identified with SLD and struggling with reading. Reading instruction and the repeated reading intervention during this study were delivered during the participating student's regularly scheduled reading class by a highly qualified special education teacher or the researcher who was also a highly qualified special education teacher. The intervention was scheduled to take place three days per week however, due to student absences, assemblies, and the demands of a new district implemented reading curriculum the repeated reading intervention was not delivered consistently three days per week for each participating student during the 10-week study.

Inter-observer Agreement and Procedural Integrity

Inter-observer agreement and treatment integrity for WCPM was assessed throughout the baseline and intervention phases. The researcher independently scored and compared WCPM and errors with the teacher's scores with all reading passages used in the study to obtain inter-scorer reliability. The inter-observer agreement was calculated by dividing the number of agreements between the teacher and the researcher with the total number of agreements and disagreements multiplied by 100 (Hawkins et al, 2011). There was a mean agreement of 90% between the teacher and the researcher. Errors included miscalculating the number of words read in a passage.

During each intervention session, the teacher and researcher utilized a checklist to ensure adherence to established intervention and scoring procedures (Kubina et al., 2008). To measure procedural integrity the researcher observed the teacher deliver the repeated reading intervention to assess the teacher's adherence to the study's procedures. There was only one step during the intervention phase with student A where the teacher did not follow a procedure. The teacher was reminded of the procedural step at that time. The researcher also reviewed the procedural checklists, the WCPM daily tracking sheet, and the WCPM graphing sheet for each session in the study on a weekly basis. During 17 sessions the WCPM were not graphed by the teacher. This was most often due to a student surpassing WCPM on the graph. Additional graphs were developed with a higher number of WCPM for use when working with students.

Participants

After obtaining human subject research approvals from the university and permission from the school district, and high school, students enrolled in the special education reading class were recruited to participate in the study. The students recruited for this study were enrolled in the participating high school, demonstrated a history of reading related weaknesses, and were placed in the special education reading class by an ARD committee. Seven of the nine students in this reading class returned the parental consent and signed the assent in order to participate in the study. While data were collected on all seven participating students, this study focused on the three students who met criteria as a student with SLD. Instructional reading levels were determined by having the students read short passages until demonstrating a reading accuracy of 95%

(Pikulski, 1990). The study participant’s age, grade, sex, identified disabilities, and instructional reading level are illustrated in Table 3.

Table 3
Demographic Information of Study Participants

| Student # | Sex | Age | Grade | Identified Disability | Reading Level | English Language Learner |
|-----------|-----|-----|-------|--|-----------------|--------------------------|
| A | F | 16 | 10 | Specific Learning Disability | 5 th | yes |
| B | M | 15 | 10 | Specific Learning Disability, and Other Health Impairment for ADHD | 4 th | no |
| C | M | 16 | 10 | Specific Learning Disability and Speech Impairment | 5 th | yes |

Of the three participants, all met TEA’s criteria for SLD in basic reading, two were considered an English Language Learner, two repeated a grade in elementary, and all three students have received specialized instruction due to academic weaknesses associated with a disability since early elementary. Individual performance in WCPM for baseline mean, practiced passages mean, and unpracticed passages mean, along with the range of WCPM are illustrated in Table 4.

Student A

Student A was a tenth grader identified as a student with the disability condition of SLD in the areas of basic reading and math problem solving. Student A was retained in the first grade due to limited academic progress, received supports as an English Language Learner, and received supports and services through special education since first grade. For this study, the informal reading assessment indicated Student A was reading at a fifth-grade instructional reading level. During the baseline and intervention

phases of this study, Student A demonstrated consistent daily attendance. However, eight weeks into the study an inappropriate conduct incident occurred during school hours, resulting in her having to drop out of the study due to placement in an alternative educational setting.

Student A participated in 22 baseline and intervention sessions, with six measures of WCPM on unpracticed passages. WCPM performance during baseline, practiced passages, and unpracticed passages are illustrated in Figure 1. Visual analysis of the graph shows an immediate increase in WCPM with practice passages once the repeated reading intervention sessions were implemented. During baseline, Student A demonstrated a reading fluency mean of 71 WCPM. With the implementation of the repeated reading intervention, she demonstrated an immediate increase in WCPM with a mean increase of 115 WCPM, with a WCPM mean of 88 with unpracticed passages. There were no overlaps in data points when comparing the repeated reading intervention to baseline. Overlapping data points are data points at or below the baseline (Vandenberg, Boon, Fore, & Bender, 2008). However, Student A demonstrated two overlaps (33.3%) in data points when comparing WCPM with unpracticed passages to the baseline condition. While the WCPM for unpracticed passages mean is lower than the practice passages mean, WCPM with unpracticed passages averaged 17 WCPM over the baseline mean.

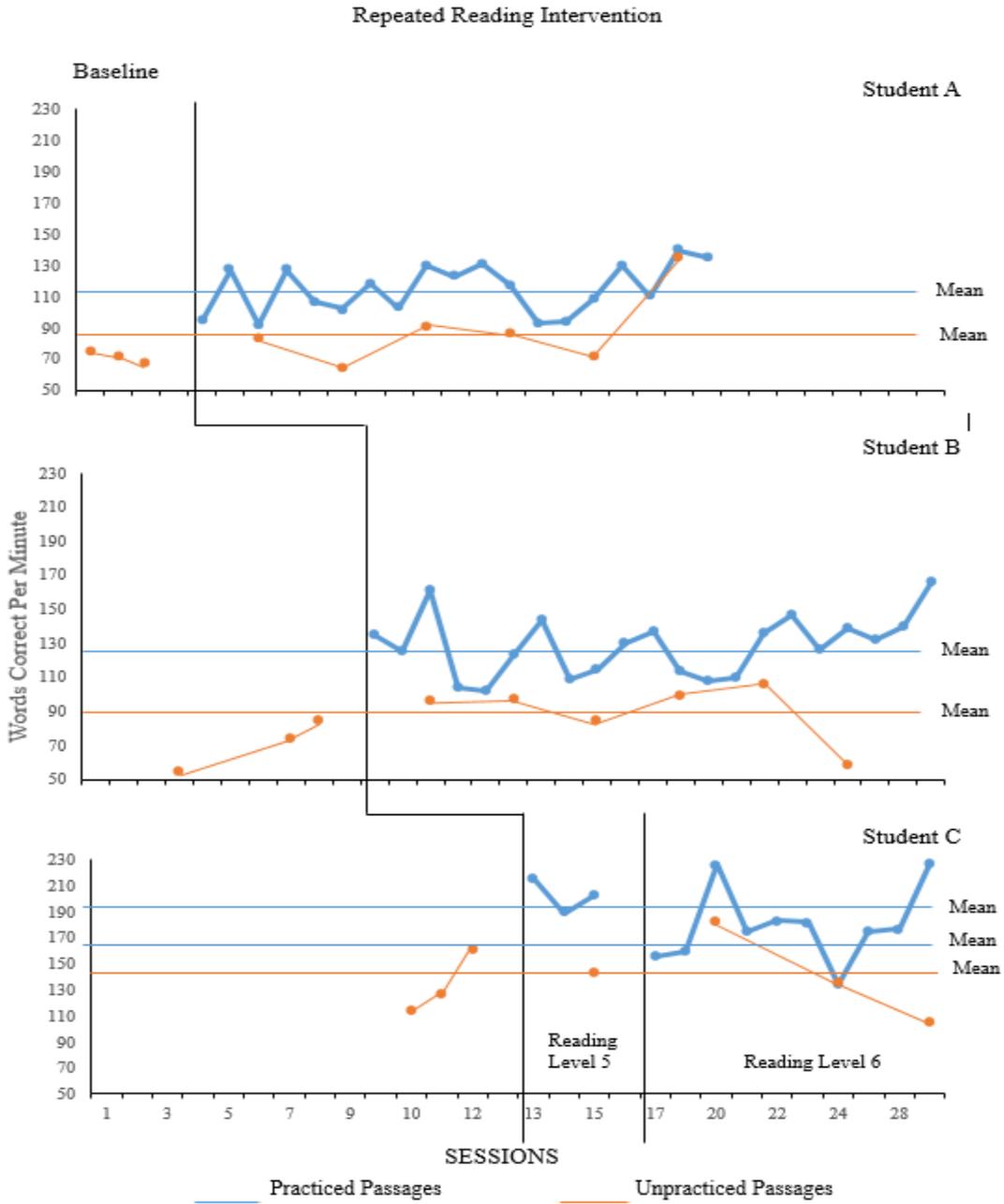


Figure 1. Multiple-baseline data on words correct per minute with practiced and unpracticed passages, and baseline data for Students A, B, and C.

Student B

Student B was a tenth grader identified as a student with the disability condition of SLD in the areas of basic reading, written expression, math calculations, and math reasoning, and an Other Health Impairment (OHI) due to a diagnosis of Attention Deficit Hyperactive Disorder (ADHD). He was first identified with dyslexia while attending the second grade in a public school. During third through eighth grades he attended a private school dedicated to educating students with disabilities. Student B returned to public school for his ninth-grade year. Due to limited academic progress during the first semester of his ninth grade year, an evaluation was conducted and supports through special education was recommended with an identification of SLD and OHI. For this study, the informal reading assessment indicated Student B demonstrated a fourth-grade level instructional reading level.

There was a procedural irregularity with Student B during the baseline phase. On days two, three, and four of the baseline phase, the teacher did not follow baseline procedures and asked Student B to read the baseline passages four times measuring WCPM during the fourth read. Due to this error, the baseline phase for Student B continued into the third week. Student B participated in 24 baseline and intervention sessions, with six measures of WCPM with unpracticed passages.

WCPM performance during baseline, practiced passages, and unpracticed passages are illustrated in Figure 1. During baseline, Student B demonstrated a reading fluency mean of 71 WCPM. Visual analysis shows an immediate increase in WCPM with practiced passages once the repeated reading intervention sessions were implemented.

With the implementation of the repeated reading intervention, the mean increased to 129 WCPM with practiced passages, with a mean of 90 WCPM with unpracticed passages. There were no overlaps in data points when comparing the repeated reading intervention to baseline. However, Student B demonstrated two overlaps (33.3%) when comparing WCPM with unpracticed passages to the baseline condition. While the mean for WCPM with unpracticed passages is lower than the intervention mean, WCPM with unpracticed passages increased 19 WCPM over the baseline mean.

Student C

Student C was a tenth grader identified as a student with SLD in basic reading and math calculations as well as a speech impairment in the areas of receptive and expressive language. For this study, the informal reading assessment indicated Student C was at a fifth-grade instructional reading level. However, due to a high level of performance during the first week of the intervention phase, the student's reading level for this study was increased to a sixth-grade level. Attendance was inconsistent during this study and Student C did not consistently participate in the intervention sessions three times per week. Student C participated in 15 baseline and intervention sessions, with four measures of WCPM on unpracticed passages.

Student C's WCPM performance during baseline, practiced passages, and unpracticed passages are illustrated in Figure 1. During the instructional reading level 5 baseline, Student C demonstrated a reading fluency mean of 134 WCPM. Visual analysis shows an immediate increase in WCPM with practiced passages once the repeated reading intervention sessions were implemented. With the implementation of the repeated

reading intervention on reading level 5, the mean increased to 203 WCPM, with WCPM of 143 for the unpracticed passage.

Due to the high level of performance during the first week of instructional reading level 5 intervention, Student C was placed on an instructional reading level 6 and demonstrated a reading fluency mean of 179 WCPM, with a mean of 141 WCPM with unpracticed passages. With the change in instructional reading level, Student C exhibited three overlaps in data points with reading level 6 when comparing practiced passages to baseline. WCPM with the instructional reading level 5 unpracticed passage increased 9 WCPM over the baseline mean, with an increase of 7 WCPM during instructional reading level 6. Additionally, he demonstrated three overlaps (25%) in data points when comparing WCPM with unpracticed passages on instructional reading levels 5 and 6 to the baseline condition.

Student and Teacher Comments

Student and teacher opinions were gathered anecdotally with the researcher asking the teacher and the participating students in the class their opinions of the repeated reading intervention. The students reported an increase in word recognition, text comprehension, and more confidence in reading aloud after reading a passage multiple times. The participating teacher reported a positive difference in reading fluency and an increase in student's volunteering to read during the reading class.

Table 4

Individual Performance Results

| | Participants | | | |
|--------------------------------|------------------|------------------|------------------|-------------|
| | <u>Student A</u> | <u>Student B</u> | <u>Student C</u> | |
| Baseline | | | | |
| Mean | 71 | 71 | 134 | |
| Range | 67-75 | 54-84 | 114-161 | |
| WCPM with Practice Passages | | | <u>RL 5</u> | <u>RL 6</u> |
| Mean | 115 | 129 | 203 | 179 |
| Range | 92-140 | 102-166 | 189-216 | 134-227 |
| Difference from Baseline | 44 | 58 | 69 | 45 |
| WCPM with Unpracticed Passages | | | | |
| Mean | 88 | 90 | 143 | 141 |
| Range | 64-135 | 58-106 | NA | 105-183 |
| Difference from Baseline | 17 | 19 | 9 | 7 |

Note: NA= No Data Available; RL= Reading Level; WCPM=Words Correct Per Minute

Research Question One

What are the effects of a repeated reading intervention on WCPM with practiced passages for high school students identified with SLD?

All participating students in this study demonstrated an immediate increase in WCPM with practiced passages during the repeated reading intervention sessions. Student A increased WCPM an average of 44 WCPM with practiced passages over the baseline mean with no overlap in data points. Student B increased WCPM with practiced passages an average of 58 WCPM over the baseline mean with no overlap in data points. Student C increased WCPM with practiced passages an average of 69 WCPM during level 5, and 45 WCPM during level 6 over the baseline mean. While Student C demonstrated three overlapping data points, this was while working with instructional

reading level 6 passages which included a higher level of vocabulary than instructional reading level 5 passages.

Research Question Two

What are the effects of a repeated reading intervention on WCPM with unpracticed passages for high school students identified with SLD?

Two of the three participating students demonstrated an immediate increase in WCPM when presented an unpracticed passage. While having two overlapping data points, Student A increased WCPM with unpracticed passages an average of 17 WCPM over the baseline mean. Student B also had two overlapping data points, however there was an increase of WCPM with unpracticed passages an average of 19 WCPM over the baseline mean. Student C had one unpracticed passage measure for instructional reading level 5 demonstrating an increase of 9 WCPM over the baseline mean. With instructional reading level 6, Student C demonstrated an average increase of 7 WCPM with unpracticed passages over the baseline mean. While Student C did not show as great an increase in WCPM as did Student A and Student B, attendance was inconsistent for Student C and he did not participate in the intervention on a regular basis. Additionally, Student C was given a higher instructional reading level after the first week of entering the repeated reading intervention due to his performance on instructional reading level 5.

CHAPTER V

DISCUSSION

High school curriculum includes an extensive amount of reading with expectations of word knowledge (Hawkins et al., 2011; Paige et al., 2012). With poor reading skills impacting academic progress for high school students who have been identified with a specific learning disability, research within the high school setting is important in order to find reading instruction and remediation that are effective and appropriate. Yet, there are few studies that focus on effective and appropriate reading interventions at the high school level (Josephs & Jolivet, 2016; Valleley & Shriver, 2003). A review of the literature indicated repeated reading can be an effective intervention for building oral reading fluency, yet there were few studies with repeated reading that focused on high school students who had been identified with a disability and demonstrated reading related weaknesses (Wexler et al., 2010). Thus, the purpose of this study was to extend the research utilizing a multiple-baseline design to evaluate the effectiveness of repeated reading as an intervention for high school students identified with a specific learning disability.

Visual analysis of data gathered in this study suggested a functional relationship was demonstrated for all three high school students who participated, with data patterns indicating an immediate increase in WCPM with practiced passages when the repeated reading intervention was introduced. This supports previous studies that suggested repeated reading is an effective intervention for increasing reading fluency skills for high

school students who struggle with reading (Josephs & Jolivette and Valleley & Shriver, 2003).

A visual analysis of the graphs indicated repeated reading had a positive affect on oral reading fluency with unpractice passages for two of the three students. Student A participated in the intervention consistently for 19 sessions with improvement in WCPM from a baseline mean of 71 WCPM, to an intervention mean of 115 WCPM with practiced passages and a mean of 88 WCPM with unpracticed passages. With each intervention session, Student B demonstrated improvements in WCPM with a baseline mean of 71 WCPM, to a mean of 129 WCPM with practiced passages and 90 WCPM for unpracticed passages. Student C received the repeated reading intervention inconsistently due to inconsistent school attendance. Even so, an immediate increase was demonstrated in WCPM with practiced passages and maintained even when placed on a higher reading level. While Student C did not demonstrate the same level of increase from baseline mean with practiced and unpracticed passages when compared to the performances of Students A and B. This may have been due to his reading rate being considerably higher at baseline. Research shows those students with a lower level of performance in decoding and word recognition demonstrate the greatest gains with the repeated reading intervention (Alber-Morgan et al., 2007).

Student and teacher opinions were gathered anecdotally with the researcher asking the teacher and the participating students in the class their opinions of the repeated reading intervention. The teacher reported an increase in the student's confidence with reading among the participating students. The students who responded indicated they

believed reading a passage more than once increased comprehension of what was read. The students and teacher reported an increase in word recognition and more confidence in reading aloud after reading a passage multiple times. Studies show repeated reading can have positive impact on the slow reader's confidence in their reading ability (Kuhn & Stahl, 2003). Additionally, the students reported they felt more comfortable with oral reading when given the chance to read through a passage multiple times.

Although oral reading fluency is not the sole purpose of reading, research shows oral reading fluency is highly correlated to reading comprehension and overall reading achievement (Samuels, 1997; Welsch, 2007, Yurick et al., 2006). In 1974, LaBerge and Samuels introduced their theory of automatic processing in reading. The authors suggested automaticity of recognition of letters, spelling patterns, and individual words improves with repeated practice, much like an athlete practicing a sport (LaBerge & Samuels, 1974).

This study supports the idea that repeated reading as an intervention for high school students identified with SLD and who struggle with reading can be effective as it exposes them to unfamiliar spelling patterns and words, allowing opportunities to build automaticity of word recognition and improving oral reading fluency. The findings of this study also support previous research that utilized a multiple-baseline design to show repeated reading as an intervention to increase oral reading fluency has a positive effect on increasing WCPM for high school students who have been identified with a disability (Hawkins et al., 2010; Josephs & Jolivette, 2016; Valleley & Shriver, 2003). This study is significant in that it focuses specifically on high school students who have been identified

with a specific learning disability and demonstrated a history of academic weaknesses associated with reading deficits.

The repeated reading intervention was easy to implement, took little time per student, and was cost effective. This intervention required the student to practice oral reading in a safe environment with guidance from a listener who can provide appropriate and accurate corrective feedback. Thus, the repeated reading intervention gave the students word level practice that was needed to help improve oral reading fluency and overall reading achievement.

Reading is a tool that can be used to access written information. Reading interventions that expose students to more vocabulary, thus increasing their vocabulary knowledge and improving overall reading achievement give students a tool that will help them progress in the educational environment. Additionally, effective reading interventions help students to move toward their post-secondary goals of continuing their education or gaining competitive employment, along with involvement in the community.

Limitations

The study was conducted within a special education reading classroom with high school students who have been identified with a disability. Due to student absences, demands of core content, student discipline issues, and classroom time constraints it was difficult to implement the repeated reading intervention consistently three day a week for 10 weeks. During the intervention sessions, Student B had difficulty receiving corrections of miscues and required encouragement to slow down and read each word however, when given the unpracticed passages no encouragement or instructions were offered. Due to the

high level of oral reading fluency performance for Student C with reading level 5, reading level 6 was implemented the second week of his intervention sessions resulting in an immediate change in oral reading rate. Since this study was a single-subject design utilizing a limited number of participants, generalizability of the results may be limited. Finally, all participants continued to receive academic instruction in all academic classes, including the reading class. Since the students continued receiving academic instruction, they were exposed to more vocabulary practice, thus risking influencing the participating student's WCPM and the study outcome.

Future Research

This study focused on high school students who had been previously identified with a specific learning disability and demonstrated a history of struggling with reading achievement. While visual analysis of this study shows an immediate improvement with WCPM when the repeated reading intervention was introduced, results were inconsistent when reviewing results of WCPM with unpracticed passages. All student participants in this study have been identified with SLD however, two of the participants had been identified with an additional disability under IDEA (Other Health Impairment for ADHD and Receptive and Expressive Language Impairment). More research is needed that focuses on students solely identified with a specific learning disability in an area of reading. This research may offer a better understanding of the effectiveness of repeated reading with students identified with SLD and struggling with reading. With this knowledge, reading interventions can be more individualized and strategic thus improving overall reading achievement, and ultimately post-secondary outcomes.

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APPENDIX A

TWU Institutional Review Board for Human Research Protection Approval



Institutional Review Board
Office of Research and Sponsored Programs
P.O. Box 425619, Denton, TX 76204-5619
940-898-3378
email: IRB@twu.edu
<http://www.twu.edu/irb.html>

DATE: April 17, 2017

TO: Ms. Julie Southward
Teacher Education

FROM: Institutional Review Board (IRB) - Denton

Re: Approval for Repeated Reading with Error Correction for High School Students Identified with a Specific Learning Disability (Protocol #: 19430)

The above referenced study was reviewed at a fully convened meeting of the Denton IRB (operating under FWA00000178). The study was approved on 4/13/2017. This approval is valid for one year and expires on 4/13/2018. The IRB will send an email notification 45 days prior to the expiration date with instructions to extend or close the study. It is your responsibility to request an extension for the study if it is not yet complete, to close the protocol file when the study is complete, and to make certain that the study is not conducted beyond the expiration date.

If applicable, agency approval letters must be submitted to the IRB upon receipt prior to any data collection at that agency. A copy of the approved consent form with the IRB approval stamp is enclosed. Please use the consent form with the most recent approval date stamp when obtaining consent from your participants. A copy of the signed consent forms must be submitted with the request to close the study file at the completion of the study.

Any modifications to this study must be submitted for review to the IRB using the Modification Request Form. Additionally, the IRB must be notified immediately of any adverse events or unanticipated problems. All forms are located on the IRB website. If you have any questions, please contact the TWU IRB.

cc. Dr. Gina Anderson, Teacher Education
Dr. Jane Pemberton, Teacher Education
Graduate School

APPENDIX B

Richardson Independent School District Research Approval Letter



ACCOUNTABILITY AND CONTINUOUS IMPROVEMENT
Richardson Independent School District
Where all students learn, grow, and succeed

January 25, 2017

Mrs. Julie Southward

Re: Request to Conduct Research in the Richardson Independent School District

Dear Mrs. Julie Southward:

The Richardson Independent School District (RISD or the District) reviewed your proposal to conduct the following research:

Repeated Reading with Error Correction as an Intervention for High School Students Identified with a Specific Learning Disability

Involved Campuses: Richardson High School

Data Collection:

1. The researcher will investigate the efficacy of repeated reading as an instructional intervention on increasing words correct per minute (WCPM) for high school students identified with special learning disability (SLD).
2. Two special education teachers and four students will participate in the research during their scheduled reading classes.

Subject to the conditions stated herein, we are pleased to grant approval for your requested study.

Although we expect a trouble-free, cooperative relationship, RISD reserves the right to withdraw its approval for the study at any time and to cease further participation in the research when, in the sole determination of RISD, such action serves the best interests of the District.

Conditions of Approval to Conduct Research:

- Research may be conducted only on the topic(s) and scope described in your request for approval.
- A copy of the project approval by your Institutional Review Board (IRB) or other approving body must be submitted to the undersigned before any research may begin. Contact information for such approving body must be included with the submission.
- Approval must be obtained from the principal at each school at which you wish to obtain data before any research may begin. The campus principal retains the right to decline to participate in a study and to set additional conditions for campus participation. If the researcher is a principal, the executive director of the approved campus must give approval for the research.
- Any research activities may not be conducted in a manner that in any way disrupts the operations of the campus or interrupts the work of RISD employees.

ACI Decision Letter on External Research

- All costs of the research must be borne by the researcher, including expense of any required fingerprinting or background checks. RISD will not incur any cost in connection with the study and researcher agrees to promptly reimburse RISD if any such costs are incurred.
- Researcher must follow all District and campus rules when on RISD premises.
- Upon completion of your research, please submit a copy of your full report for our records.

Confidentiality statement

You may not access any identifiable student information unless and until RISD approval is obtained. You agree to keep all data confidential which includes creating special subject numbers, keeping data safeguarded, not sharing or reporting individual data to third parties for research or other purposes, and using the data only for agreed upon research and program development purposes. You understand and agree that no confidential information regarding any participants will be disclosed in any document intended for public disclosure.

Although this letter constitutes the District level approval, the participation of any RISD stakeholder including student (parent consent), teacher, and principal, is strictly voluntary.

Statement for Background Check (if applicable)

Please ensure that all individuals who will be observing classroom instruction complete and pass the District's criminal background check for volunteers, which is administered through our Department of Human Resources. Please call 469-593-0000 if you have any questions.

Thank you for choosing the Richardson Independent School District to participate in your study. We wish you the best in conducting your study at RISD. Please let us know if we can be of further assistance.

Sincerely,



For RISD Research
Application Only

W. Hugh Yuan
Director, Research & Evaluation
Accountability and Continuous Improvement
970 Security Row, Richardson, TX 75081
hugh.yuan@risd.org

APPENDIX C

IRB Stamped Parental Consent Form

TEXAS WOMAN'S UNIVERSITY
CONSENT TO PARTICIPATE IN RESEARCH

Title: **Repeated Reading as an Intervention for High School Students Identified with a Specific Learning Disability**

Investigators: Julie D. Southward M.Ed. jsouthward@twu.edu 214- -
Jane Pemberton, Ph.D..... jpemberton@mail.twu.edu 940-898-2271

Explanation and Purpose of the Research

You son/daughter is being asked to participate in a research study for Mrs. Southward's dissertation at Texas Woman's University. The purpose of this research is to extend the research on the effectiveness of repeated reading as an intervention for building oral reading fluency for high school students who have been identified with a Specific Learning Disability (SLD) and demonstrate weaknesses in reading.

Repeated reading is a reading intervention that requires the student to read a short passage aloud multiple times to either a teacher or tutor (Lo et al., 2011; Samuels, 1997). The theory is with multiple readings of a short passage, the likelihood of recognizing the words when later encountered increases, therefore building automaticity of text (Chard et al., 2009). With each additional reading, comprehension of text increases as the student is spending less time decoding to identify words and more time gaining meaning from the passage (Samuels, 1997). Repeated reading is a common reading intervention used in schools of all levels to help increase oral reading fluency skills for students who demonstrate weaknesses in reading.

Description of Procedures

High school students enrolled in the participating special education reading class and who meet the Texas Education Agency (TEA) eligibility criteria as a student with a disability condition with weaknesses in reading achievement are invited to participate in this study. This study will take place during your child's regularly scheduled reading class with the repeated reading fluency intervention taking place as part of their daily reading instruction. All students enrolled in this class are invited to participate. However, only those who have returned a signed consent and assent form will be eligible to participate.

Study Procedures

The study procedures will consist of two phases: a) baseline and b) repeated reading intervention. The baseline phase is to measure your child's present performance level. The repeated reading intervention phase is to intervene and measure your child's progress with sessions occurring 3 times a week, with each session lasting approximately 5-10 minutes. The study will last 10 weeks with a total time commitment ranging from 150 to 300 minutes (2.5-5 hours).

Potential Risks

There may be several potential risks.

- (1) Your child would feel emotional discomfort, embarrassed, or frustrated when the repeated reading intervention is presented to him/her.

Parent's Initials

Approved by the
Texas Woman's University
Institutional Review Board
Approved: April 13, 2017

Page 1 of 3

- (2) The researchers may lose the confidentiality of your child's information.
- (3) The researchers may lose your child's information and there may be a loss of his/her anonymity.
- (4) Coercion
- (5) Loss of instructional time.
- (6) Your child may be concerned about their grades for the reading intervention sessions.

Minimizing the potential risks

Steps taken to minimize the potential risks mentioned above;

- (1) The research staff involving in the study will carefully monitor your child's responses. If the research staff finds that he/she does not feel comfortable, frustrated, or embarrassed with any research procedures, they will immediately stop the procedures. Additionally, the student will be advised that if he/she does not feel comfortable, frustrated, or embarrassed with any research procedures, he/she can ask to stop the procedures at any time.
 - (2) Confidentiality will be protected to the extent that is allowed by law. All identifiable study data will be stored in the primary researcher's locked on-campus office, in a locked cabinet. All identifiable forms will be stored securely in a locked cabinet at the primary researcher's off-campus office for four years after the closing of the study. There is a potential risk of loss of confidentiality in all email, downloading, electronic meetings, and internet transactions.
 - (3) All identifiable data will be stored in the primary researcher's locked on-campus office, in a locked cabinet. All identifiable forms will be stored securely in a locked cabinet at the primary researcher's off-campus office for four years after the closing of the study. There is a potential risk of loss of anonymity in all email, downloading, electronic meetings, and internet transactions.
 - (4) Participation in the study is completely voluntary. Your child may withdraw from the study at any time without question or penalty. Participation will in no way affect your child's classroom grades or his/her relationship with the high school or classroom teachers.
 - (5) The study will take place during your child's regularly scheduled special education reading class. This intervention is a regularly scheduled part of your child's current reading instruction, as well as all students enrolled within this special education reading class.
 - (6) Your child will be advised that he/she will not earn a grade while participating in this intervention. Participation will in no way affect your child's classroom grades or his/her relationship with the high school or classroom teachers.
- *The researchers will try to prevent any problem that could happen because of this research. You should let the researchers know at once if there are problems related to the research and they will help you. However, TWU does not provide medical services or financial assistance for injuries that might happen because you are taking part in this research.*

Parent's Initials

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|---|
| <p>Approved by the Texas Woman's University Institutional Review Board Approved: April 13, 2017</p> |
|---|

Page 2 of 3

Participation and Benefits

Your child could benefit from the repeated reading intervention because research shows this is a proven method to effectively increase oral reading fluency, word recognition and reading comprehension for students with weaknesses in reading achievement.

The following are important notes to know before you give the permission to us.

- (a) If we write a report about this study, we will do so in such a way that the student cannot be identified.
- (b) You will not benefit personally. However, we hope that others may benefit in the future from what we learn because of this study.
- (c) Taking part in this research study is completely voluntary. Therefore, if you decide you do not want your child to be in this study, or if he/she stops participating at any time, he/she will not be penalized or lose any benefits for which he/she otherwise qualify.

Questions Regarding the Study

You will be given a copy of this signed and dated consent form to keep. If you have any questions about the research study you should ask the researchers; their phone numbers are at the top of this form. If you have questions about your rights as a student in this research or the way this study has been conducted, you may contact the Texas Woman’s University Office of Research and Sponsored Programs at 940-898-3378 or via e-mail at IRB@twu.edu.

Signature of Parent of

Date

*If you would like to know the results of this study please tell us where you want them to be sent:

Email: _____ or Address: _____

Approved by the
Texas Woman's University
Institutional Review Board
Approved: April 13, 2017

APPENDIX D

IRB Stamped Student Assent

ASSENT DOCUMENT

Project Title: Repeated Reading as an Intervention for High School Students Identified with a Specific Learning Disability

Investigator(s): Julie Southward, M.Ed. and Jane Pemberton, Ph.D.

We are asking you to participate in a research study to find reading interventions to help high school students become better readers.

If you decide to be in this study, this is what will happen; you will work with Mrs. Southward or your regularly scheduled classroom reading teacher for 5-10 minutes 3 times a week for 7 weeks during your regularly scheduled reading class. The study will last 10 weeks with a total time commitment ranging from 150 to 300 minutes (2.5-5 hours). During this time, you will work on improving your oral reading fluency skills.

You may get frustrated working on some challenging words or embarrassed during the intervention. If this happens please tell your classroom teacher and we will take a break. Your participation is completely voluntary and you may stop at any time. You may think that what you do in the study will change the grades for your regular classroom. Your reading fluency will be measured but it will not be used for your regular classroom grades.

We hope to learn something that will help high school students improve their reading fluency skills. If you don't want to be in this study, we will still teach you and work to help you improve your reading skills.

When we are done with the study, we will write a report about what we found out. We won't use your name or anything that will identify you in the report.

It's up to you to be a part of this study. If you say okay now, but you change your mind later, that's okay too. All you need to do is tell us.

If you want to be in this study, please sign your name.

I, _____, want to be in this research study.
(Student's name)

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|---|
| Approved by the Texas Woman's University Institutional Review Board Approved: April 13, 2017 |
|---|

APPENDIX E

Sample Reading Passage

SAMPLE PASSAGE

You can make a tornado in the safety of your own home. Take two plastic bottles with screw-on caps. Glue the caps together so the tops are back-to-back. Make a hole through the glued bottle caps using a large nail. Fill one bottle about three-quarters full with water. Add food coloring and some glitter so the tornado will be easy to see. Screw the double cap onto the bottle with water in it. Screw on the empty bottle at the top. Turn the two bottles upside down. Use both hands to hold the bottom bottle. Turn the bottles like you were drawing circles in the air. The water inside the bottles will start to swirl. You should see a tornado-like funnel form in the water.

Education.com

APPENDIX F

WCPM Daily Tracking Sheet

WCPM Daily Tracking

Student #

Teacher #

Session # _____ Date _____ Passage # _____ WCPM _____
Time Start _____ Time End _____ # Errors _____
Notes _____

Session # _____ Date _____ Passage # _____ WCPM _____
Time Start _____ Time End _____ # Errors _____
Notes _____

Session # _____ Date _____ Passage # _____ WCPM _____
Time Start _____ Time End _____ # Errors _____
Notes _____

Session # _____ Date _____ Passage # _____ WCPM _____
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Session # _____ Date _____ Passage # _____ WCPM _____
Time Start _____ Time End _____ # Errors _____
Notes _____

Session # _____ Date _____ Passage # _____ WCPM _____
Time Start _____ Time End _____ # Errors _____
Notes _____

APPENDIX G

WCPM Progress Graph

Appendix H
Procedural Checklist

Procedural Checklist

Student # _____ Teacher # _____

Date _____

Time started: _____ Time ended: _____

- ___ 1. The classroom teacher will have stop-watch and student's repeated reading packet to begin each session. The student's repeated reading packet will contain two copies of an instructional level reading practice passage, procedural checklist, words correct per minute student (WCPM) data tracking sheet, and WCPM graph.
- ___ 2. Classroom teacher and student will go to assigned center.
- ___ 3. Classroom teacher and student will be seated across from each other at a table.
- ___ 4. Classroom teacher will give the student a copy of the practice passage.
- ___ 5. The classroom teacher will ask the student to read the selected passage aloud.
- ___ 6. While the student reads aloud, the classroom teacher will follow along on their copy of the passage and note miscues. Miscues were defined as a word that was mispronounced, omitted, inserted, substituted, or not pronounced correctly within 3 seconds. Self-corrections made within 3 seconds and repetitions were not counted as errors.
- ___ 7. The student will be instructed to re-read the practice passage aloud four times with the classroom teacher marking miscues. During these readings, the classroom teacher will correct the miscues as they occur.
- ___ 8. During the fourth re-reading, the student will read the passage with the classroom teacher utilizing a stop-watch to measure the number of seconds the student takes to read the practice passage.
- ___ 9. Once the student has finished reading, the WCPM will be reported to the student.
- ___ 10. The classroom teacher will input this information on the WCPM student data tracking sheet.
- ___ 11. The WCPM will be graphed to illustrate progress. Reading rate will be calculated by subtracting words read incorrectly from the total number of words read within 60 seconds.

___12. On the third day of the repeated reading intervention center time, a one minute timed reading of an unfamiliar passage will be conducted at the end of the session. The results will be graphed on the WCPM graph.

___13. The classroom teacher will place both copies of the practice passage, WCPM Daily Data form, and WCPM graph back into the student's folder.

___14. The folder will be placed in a locked drawer until picked up by the primary researcher at the end of the school day.