Repeated Reading as an Intervention for High School Students

Identified with a Specific Learning Disability

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Abstract: The current study was conducted to measure the effectiveness of a repeated reading intervention for secondary level students identified with a specific learning disability. Although previous research suggests that repeated reading is an effective intervention to build oral reading fluency for students identified with disabilities, there is little research on its effectiveness with high school students who have been identified with a specific learning disability. This study used a multiple-probe across students design to measure the effectiveness of repeated reading as a strategy to improve oral reading fluency with high school students identified with a specific learning disability. A visual analysis of data suggested a functional relationship was demonstrated with all participating students. While there were differences in performance, the visual analysis indicated repeated reading had a positive affect on oral reading fluency with unpracticed passages for all three students.

Key words: repeated reading, oral reading fluency, specific learning disability.

Although 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 (Guerin, & Murphy, 2015; Hawkins, Hale, Sheeley, & Ling, 2011; Paige, Rasinski, & Magpuri-Lavell, 2012). As a result of this, secondary level students who struggle with poor reading skills often 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). Particularly, students with a specific learning disability (SLD) in reading are at a greater disadvantage as they may encounter more words with grade-level texts they cannot read by sight and rely on guessing based on the context of the passages, compromising comprehension of text (Torgesen et al., 2001). Once a student enters secondary school, these weaknesses are compounded due to increased amounts of content reading and the high level of expectations in vocabulary knowledge needed to progress in classes. Research indicates that students with poor reading skills are more likely to experience a higher rate of dropping out of school, unemployment, and lower income (Valleley & Shriver, 2003). Therefore, it is imperative to find effective reading remediation while students are still attending high school.

The National Reading Panel (NRP; 2000) reported on 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). ORF is the ability to read aloud fluidly and effortlessly with adequate speed and prosody (Shanahan, 2005). Students who demonstrate weaknesses in ORF miss out on text exposure and word reading practice, limiting development of word knowledge and text comprehension (Chard, Ketterlin-Geller, Baker, Doabler, & Apichatabutra, 2009). Additionally, studies have identified evidence supporting the influence of ORF on reading comprehension and overall reading achievement (Lo, Cooke, & Starling, 2011; Schwanenflugel et al., 2009).

There are various evidence-based interventions used in schools to help improve ORF. One of the most commonly recommended interventions for students who are weak in ORF is repeated reading (RR; Hawkins et al., 2011; Ring, Barefoot, Avrit, Brown, & Black, 2013). Research indicates that when the RR intervention was implemented, students showed significant gains in both words correct per minute (WCPM) and reading comprehension (Schwanenflugel et al., 2009). The RR intervention 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 of recognition of the visual representations of a word, word groups, or short phrases, allowing the reader to direct their attention to comprehension of the text (LaBerge & Samuels, 1974).

The basis of the RR intervention requires a student to reread a short passage aloud to either a teacher or tutor a set number of times (Samuels, 1979) or until the student reaches a predetermined criterion of words read correctly (Lo et al., 2011). With repetition of text, 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 content increases as the student is spending less time decoding to identify words and more time gaining meaning from the passage (Samuels, 1997).

In 2000, the NRP conducted an extensive review of experimental and quasi-experimental research studies that had been published in peer-reviewed journals to examine the effectiveness of various reading fluency interventions. Of the identified 77 studies that met their inclusion criteria, the NRP panel conducted a meta-analysis of 16 studies that met their criteria of methodology of research with RR. The studies utilized in this meta-analysis included students with and without reading weaknesses, in grades second through ninth. Their review suggested oral reading practice with feedback has a positive impact on word knowledge and reading fluency, with some impact on reading comprehension. In addition, What Works Clearinghouse identified two studies of RR that met their group design standards and included students in grades 5 through 12 who were identified with 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).

Therrien (2004) conducted a meta-analysis on RR. The analysis indicated that RR improved reading fluency and comprehension skills for students identified with a learning disability. It also indicated RR 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. However, the meta-analysis did not specify its effects on the basis of the age or grade level of the participants for each study analyzed.

Wexler et al. (2010) synthesized research published between 1980 and 2005 to examine the effects of RR for secondary level students. The synthesis focused on the effectiveness of fluency interventions for students in grades six through twelve. The authors 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 RR 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 RR intervention.

Although there is a body of literature suggesting RR is an effective method of intervention for improving ORF with students identified with a disability, few studies have focused on high school students with SLD. Only two studies were identified for this review that investigated the effects of RR with high school students with an SLD (Valleley & Shriver, 2003; Josephs & Jolivette, 2016). Valleley and Shriver (2003) researched the effectiveness of RR with four high school students identified with a disability. The participants in this study resided in a residential treatment facility that specialized in working with students with behavioral concerns. Three of the students were identified with SLD in an area of reading, the fourth student was identified with an intellectual disability (ID). While individual results varied, results of their study showed a noticeable increase in WCPM with instructional level reading passages, grade level reading passages, and curriculum passages with all participating students. Additionally, Josephs and Jolivette (2016) investigated RR for high school students with SLD. They utilized a

peer-mediated RR intervention with four high school students who demonstrated weaknesses in reading. The researchers paired students who demontated a higher reading level with students who read at a lower level and then randomly assigned them to a treatment condition. The authors indicated all participants in this study showed increases in ORF suggesting peer-mediated RR was an effective intervention. However, while all students in their study demonstrated reading weaknesses, only one of the four participating high school students had been identified with SLD.

Research shows utilizing a RR intervention that requires students to read a passage multiple times is beneficial to students with and without disabilities (Alber-Morgan, Ramp, Anderson, & Martin, 2007). Yet, there are few studies that focused on high school students with SLD. Thus, the purpose of this study was to extend the literature on the effectiveness of RR as an intervention for improving oral reading fluency skills for high school students with SLD.

Research Questions
- What are the effects of a RR intervention on WCPM with unpracticed passages for high school students identified with SLD?
- What are the effects of a RR intervention on WCPM with practiced passages for high school students identified with SLD?

Method

Participants

Three high school students identified with SLD took part in this study (see Table 1). Inclusion criteria to recruit participants were as follows: (a) high school students meeting Texas state criteria as having an SLD, (b) enrollment in the special education reading course, (c) demonstrating an academic need for improving reading fluency, and (d) receipt of parental consent and student assent to participate. To recruit participants, the principal researcher met with the high school administrator and special education teachers and identified a special education reading class for participation. All nine students enrolled in the special education reading class were given the opportunity to volunteer for participation in the study. Parental consents and student assents, along with a recruitment letter informing families of the study, were sent home to gain permission. Seven of the parents and students returned parental consents and student assents. After obtaining the consents and assents, the students' IEPs were reviewed to determine if they met the inclusion criteria. Finally, three of the students met inclusion criteria and were included in this study.

Sarah. Sarah was a Hispanic female 10th grader identified as a student with SLD in the areas of basic reading and math problem solving. With deficits in basic reading, Sarah demonstrated weaknesses in word identification with both familiar and unfamiliar words. Due to weaknesses in word recognition, she demonstrated deficits in reading comprehension and math problem solving and received strategic reading and math instruction within a special education setting, with modified instruction in science and social studies within a general education setting. According to her previous standardized intellectual evaluation, she demonstrated weaknesses in the cognitive processing areas of short-term memory and long-term memory, with a full-scale intellectual quotient (IQ) of 86. Records showed Sarah repeated first grade due to limited academic progress and had received special education services since 1st grade with supports as an English Language Learner.

John. John was an African American male 10th grader identified as a student with dyslexia and an SLD in the areas of basic reading, written expression, math calculations, and math problem solving, with an Other Health Impairment (OHI) due to a diagnosis of Attention Deficit Hyperactive Disorder (ADHD). Due to academic weaknesses, he received strategic reading and math instruction within a special education setting, with modified instruction in science and social studies within a general education setting. His previous standardized intellectual evaluation indicated he demonstrated weaknesses in the cognitive processing area of short-term memory, with a full-scale IQ of 91. Records show John had received special education services since 9th grade. Prior to this, he attended grades three through eighth in a private school dedicated to educating students with disabilities.

Matthew. Matthew was a Hispanic male tenth grader identified as a student with an SLD in basic reading and math calculations, with a speech impairment in the areas of receptive and expressive language. His previous standardized intellectual evaluation indicated he demonstrated weaknesses in the cognitive processing areas of crystallized knowledge, short-term memory, and long-term memory, with a full-scale IQ of 87. Due to academic weaknesses, he received strategic modified instruction within a special education setting for reading, language arts, and math, with modified inclusion supports for science and social studies in a general education setting, and weekly speech therapy sessions. Records show Matthew had received special education services since 1st grade, with supports as an English Language Learner. Additionally, he repeated 1st grade, demonstrated a history of low academic progress, and sporadic school attendance.

Table 1. Demographic Information of Participants

Student #	Sex	Age	Grade	Identified Disability	Reading Level	ELL
Sarah	F	16	10	SLD	5th	yes
John	M	15	10	SLD, and OHI for ADHD	4th	no
Matthew	M	16	10	SLD and SI	5th	yes

Note: ADHD = Attention Deficit Hyperactive Disorder, ELL = English Language Learner, OHI = Other Health Impairment, SI = Speech Impairment, SLD = Specific Learning Disability.

Instructional Setting

This study was conducted in a special education classroom at an urban high school located in the South-Central United States. The high school enrolled 2,727 students in grades nine through twelve. The ethnicity of the school 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 special education classroom specifically focused on reading instruction for students with disabilities (i.e. intellectual disabilities, learning disabilities, autism, etc.). The classroom had approximately 15 student desks, with a teacher's desk, and a table with two chairs. The table with two chairs were situated away from the student desks and utilized during this study.

Materials

      Reading Passages. Individual reading passages were used during baseline, intervention, and probe sessions. Reading passages utilized in this study were found on an educational website (Education.com) which offered educational tools and learning resources for parents and educators with lessons ranging from pre-kindergarten through high school. The principal researcher downloaded fourth, fifth, and sixth grade level lessons and worksheets from the website for the study prior to implementation in order to have a new passage for each individual baseline, intervention, and probe. The principal researcher edited the downloaded passages to ensure each individual passage was within a 120- to 150-word range and fell within the appropriate reading level. The text difficulty of each passage was measured 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.

      Data Collection Documents. The principal researcher developed data collection documents: a daily tracking form to track the participants' words correct per minute (WCPM) and WCPM graphing form. The WCPM Daily Tracking form was used to document each session date and session number, reading passage number, and beginning and end times. Daily performance in WCPM, number of errors, and antidotal information (i.e., absences) were also documented on this form. The WCPM Progress Graph was completed each day for visual representation of a student's progress.

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 reading of the practiced passage during each RR intervention session (Chafouleas, Martens, Dobson, Weinstein, & Gardner, 2004; Welsch, 2007). WCPM on unpracticed passages were measured during the first minute of the first reading of a unfamiliar passage (Kubina, Amato, Schwilk, & Therrien, 2008). Measurements of WCPM on unpracticed passages were taken following the completion of the RR intervention sessions every third day. WCPM was calculated by subtracting words read incorrectly from the total number of words read in one minute (Kostewicz & Kubina, 2011). Miscues were defined as words that were mispronounced, omitted, inserted, substituted, or not pronounced correctly within 3 seconds (Alber-Morgan et al., 2007). Self-corrections made within three seconds and repetitions were not counted as errors (Josephs & Jolivette, 2016).

Experimental Design

A multiple probe across student design was used to examine the effectiveness of RR on increasing WCPM with practice and unpracticed reading passages. This study consisted of three phases: (a) baseline, (b) RR with practice passages, and (c) probes with unpracticed passages. The baseline phase was used to measure the student's present level of ORF with unpracticed passages on their individual reading levels. The RR intervention phase measured the student's progress in ORF with practiced and unpracticed passages on their individual reading levels.

Procedures

Teacher Training Session. Prior to the start of the school year, the principal researcher and the participating teacher met for a training session. During this session, the principal researcher presented the teacher with an unmarked folder that included an example of a reading passage, a procedural checklist, a WCPM Daily Tracking form, and a WCPM Progress Graph. The teacher and principal researcher then reviewed the procedural checklist and discussed and practiced delivering the intervention. The principal researcher and the teacher then reviewed the WCPM Daily Tracking form and the WCPM Progress Graph and discussed how to document the collected data. At the end of this session, the folder was given to the teacher to allow her to independently practice prior to the implementation of the study. This training session took approximately 30 minutes. During this session, the teacher was given the opportunity to ask questions to gain clarification of procedures, if needed.

Each week the principal researcher provided the teacher with an unmarked folder for each student. The folder included four different new reading passages based on the student's individual reading level. Three of the reading passages in the folder were utilized for the three days of RR intervention sessions. The fourth passage was for measuring WCPM with an unpracticed passage on the third day, after the RR intervention sessions had completed. The unmarked folder also included procedural checklists that were to be completed for each session, the WCPM Daily Tracking form, and WCPM Progress Graphs.

Baseline phase. The RR intervention was not implemented during the baseline phase; however, the reading teacher began the process of implementing the core reading curriculum (e.g., introducing the program, getting the students to access the program on their computers, etc.) with the students during class time.

To start the baseline sessions, the principal researcher called the first student over to the table situated away from the other students in the classroom. Sitting at the table across from the principal researcher, the first reading passage was given to the student and they were asked to read aloud to the principal researcher as clearly as possible. While the student read the passage aloud, the principal researcher kept time with a stop watch and marked miscues. Miscues were defined as words that were 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 miscues (Josephs & Jolivette, 2016). WCPM were reported to the student and documented on the WCPM Daily Tracking form. This process was repeated once per day during class time until baseline was established for the student. Baseline was established when the student demonstrated at least three consecutive reading data points within 50% of the mean (Josephs & Jolivette, 2016). Once baseline was established for the first student, the principal researcher advised the teacher they were ready to enter the intervention phase. At that time, the next student entered the baseline phase. Each session lasted approximately 5 to 10 minutes per student, depending on their daily performance.

Intervention phase. The RR intervention sessions were delivered to students individually while the remaining students in the class received core reading instruction. During each intervention session, the principal researcher or the teacher picked up the student's

individual study folder from a locked cabinet along with a stop-watch, and moved with the student to a table located away from the other students in the classroom.

When seated at the table, the principal researcher or teacher removed a new reading passage from the student's study folder, along with the study procedural checklist, WCPM Data Tracking form, and the WCPM Graphing Sheet. The student was then given the reading passage and asked to read it aloud three times. The examiner corrected the student's miscues while they were reading the passage. Miscues were defined as words that were 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 miscues (Josephs & Jolivette, 2016). During the student's fourth read aloud, the examiner kept time with the stop watch and noted miscues without comment to the student. After the student's fourth read, WCPM were reported to the student, noted on the student's WCPM Daily Tracking form, and graphed on the WCPM Graphing Sheet to illustrate progress.

A new reading passage was presented to the student during each RR intervention session. On the third day of the RR intervention sessions, after the RR intervention sessions had completed, the student was given a new unpracticed passage and asked to read it aloud to the examiner. During this read, miscues were not corrected and no anecdotal comments were made regarding the student's reading performance. After the student had completed reading the new unpracticed passage, WCPM were reported to the student, noted on the student's WCPM Daily Tracking form, and graphed to illustrate progress. This process was utilized for the remaining students throughout the study. Each session lasted approximately 5 to 10 minutes per student, depending on the student's daily performance.

Inter-observer Agreement

Inter-observer agreement and treatment integrity for WCPM were assessed throughout the baseline, intervention, and probe phases. Each individual reading passage, the WCPM Daily Tracking form, and the WCPM Graphing Sheets were reviewed by the principal researcher at the end of each week to ensure information noted on the tracking forms matched notes made on the individual reading passages. Words read correct and miscues noted were recalculated at that time by the principal researcher. An agreement was counted if the WCPM calculated was correct on both the reading passages and the WCPM Daily Tracking forms. The inter-observer agreement was calculated by dividing the number of agreements between the teacher and the principal 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 principal researcher.

Procedural Integrity

Procedural integrity for this study was assessed throughout the baseline, intervention, and probe phases to ensure adherence to established intervention and scoring procedures by utilizing a 14 point checklist (e.g., classroom teacher and student will be seated across from each other at a table, classroom teacher will give the student a copy of the practice passage, etc.). A new procedural checklist was completed during each individual session. Before implementing the

study, the principal researcher trained the teacher on the exact procedures for conducting baseline sessions and implementation of the RR intervention phase.

At the start of the study, the principal researcher delivered the first baseline with the first student while the teacher observed. The principal researcher then observed the teacher deliver the second baseline session with the first student during the second day of the study to ensure understanding of procedures. During all sessions, the teacher and principal researcher utilized the procedural checklist to ensure adherence to established intervention and scoring procedures (Kubina et al., 2008). Procedural integrity was assessed by the principal researcher reviewing the procedural checklists weekly to assess adherence to the study's procedures. The principal researcher reviewed the procedural checklists, the WCPM Daily Tracking forms, 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 WCPM Graphing Sheet. Additional WCPM Graphing Sheets were developed with a higher number of WCPM for use when working with students.
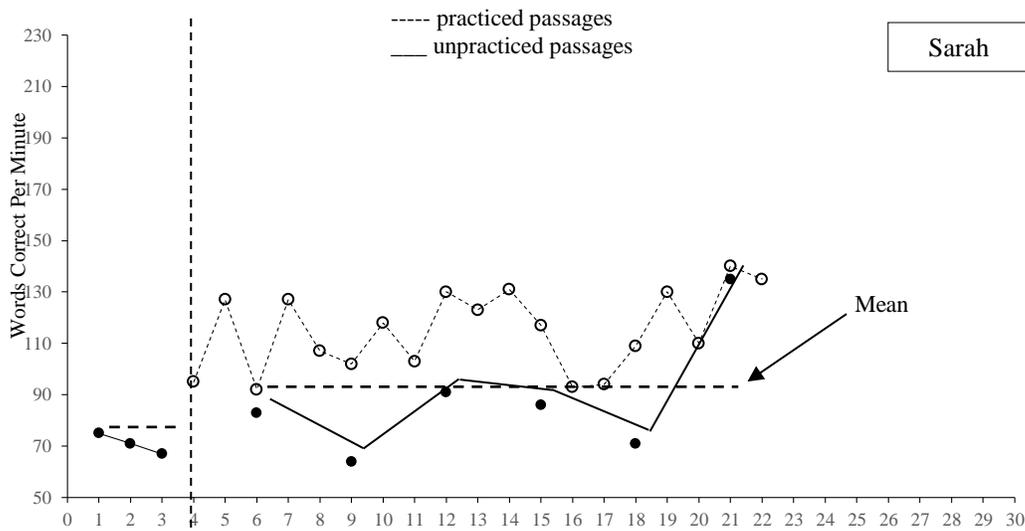
Results

Results for each student are presented in Figure 1. A visual analysis was utilized to examine the change in ORF when RR was introduced. All participating students in this study demonstrated an immediate increase in WCPM with practiced passages during the repeated reading intervention sessions, as well as demonstrating an immediate increase in WCPM when presented an unpracticed passage.

Sarah. During the baseline phase, three data points were collected, with Sarah demonstrating a mean of the baseline data (unpracticed passages) of 71.0 WCPM (range = 67.0 – 75.0). During the intervention phase, 19 data points for practiced passages and five data points for unpracticed passages were collected. There was an immediate change when the RR intervention was introduced with Sarah's performance with practiced passages significantly improving with a mean of 114.9 WCPM (range = 92.0 – 140.0). Her performance of unpracticed passages also demonstrated an immediate improvement with a mean of 88.3 WCPM (range = 64.0 – 135.0). Sarah's performance with unpracticed passages improved by approximately 24.4% as compared to the baseline data. During most of this study, Sarah demonstrated consistent daily attendance and study participation. 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.

John. During the baseline phase, three data points were collected, with a mean of the baseline data (unpracticed passages) of 71.0 WCPM (range = 54.0 – 84.0). During the intervention phase, 20 data points for practices passages and six data points for unpracticed passages were collected. When the RR intervention was introduced, John's performance of practiced passages showed an immediate improvement with a mean of 129.0 WCPM (range = 102.0 – 166.0). His performance with unpracticed passages also exhibited an immediate improvement with a mean of 90.0 WCPM (range = 58.0 -106.0). John's performance with unpracticed passages improved by approximately 26.8% as compared to the baseline data. John demonstrated a sharp decrease in performance during the last measure of unpracticed passages. During this session, John appeared frustrated with the task and the principal researcher was having difficulty getting get him focused on the reading session. While he performed well on the

practiced passages, when presented with the unpracticed passage John had to be encouraged to read and finish out the session, thus affecting his performance with the unpracticed passage.

   Matthew. In the baseline sessions, three data points were collected, with a mean of the baseline data (unpracticed passages) of 134.0 WCPM (range = 114.0 – 161.0). During the intervention phase, twelve data points for practices passages and four data point with an unpracticed passage were collected. When the RR intervention was introduced, Matthew's performance with the practiced passages showed an immediate significant improvement with a mean of 203 WCPM (range = 189.0 – 216.0). His performance with the unpracticed passage also improved with 143 WCPM (Matthew only had one data point for unpracticed passages for this level). His performance with the unpracticed passage improved by approximately 6.7% when compared to the baseline data. Due Matthew's high level of performance with the instructional reading level 5, his level was increased to an instructional reading level 6. During this phase, nine data points for practiced passages and three data points for unpracticed passages were collected. Matthew's performance during practiced passages continued to show an immediate improvement with a mean of 179.0 WCPM (range = 134.0 – 227.0). Matthew continued to show improvement with unpracticed passages achieving a mean of 141.00 WCPM (range = 105.0 – 183.0), with a performance improvement of approximately 5.2% when compared to the baseline data. There was a sharp decrease in Matthew's reading performance during the last two sessions with unpracticed passages. Throughout the intervention sessions, Matthew's attendance was inconsistent and he missed many sessions, which affected his performance during the intervention sessions. During the repeated reading intervention sessions with practiced passages, his performance improved during each reading of a passage. However, when given an unpracticed passage with unfamiliar vocabulary, Matthew's reading was slow, with many stops and starts, affecting his overall performance.
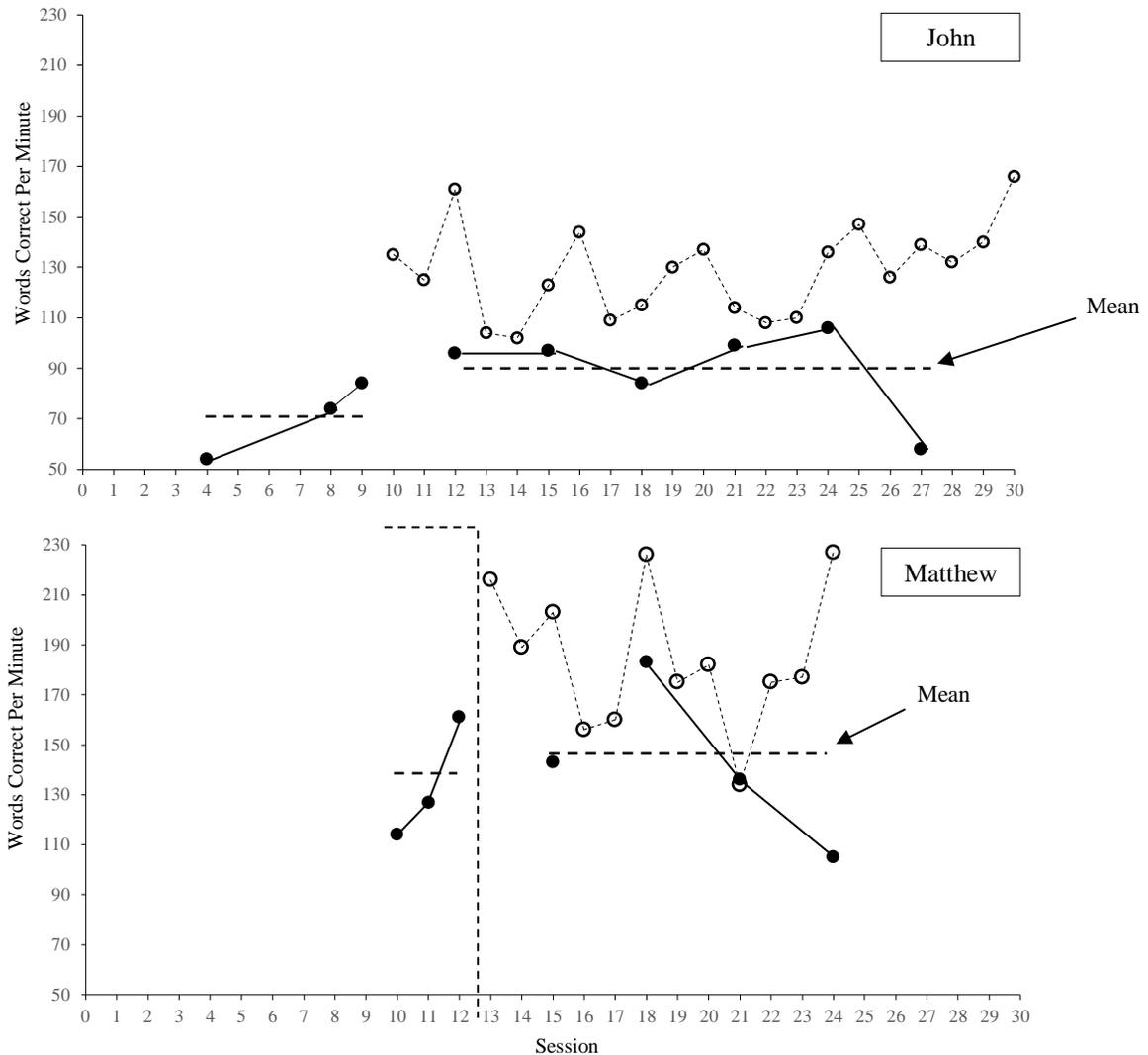
Figure 1. **Words Correct Per Minute with Practiced and Unpracticed Passages.**

Discussion

High school curriculum includes an extensive amount of reading with expectations of word knowledge (Hawkins et al., 2011; Paige et al., 2012). Studies show ORF is a prerequisite skill for students to gain meaning from text (NRP, 2000; Wexler et al., 2010). Those who are proficient in ORF are able to recognize words with automaticity allowing them to focus their attention on the text rather than having to decode a word (Samuels, 1997). LaBerge and Samuels' theory of automatic processing 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). Thus, oral reading practice helps build automaticity of ORF by providing successive exposure to print (Kuhn et al., 2010; LaBerge & Samuels, 1974). Additionally, fluency instruction exposes students to both familiar and unfamiliar vocabulary, increasing the chance of recognition of a word the next time it is encountered (Samuels, 1997).

There are a plethora of studies regarding interventions for increasing ORF for students with and without disabilities (NRP, 2000). In 2000, the NRP conducted an extensive review of liturature and reported RR has a, "consistent, and positive impact on word recognition, fluency, and comprehension as measured by a variety of test instruments and at a range of grade levels" (NRP, 2000, p. 3-3). The results of their report suggest RR as an intervention for secondary level 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 ORF. A review of the literature for this study indicated RR can be an effective intervention for building ORF, yet there were few studies with RR that focused on high school students who had been identified with SLD and demonstrated reading related weaknesses (Wexler et al., 2010). Thus, the purpose of this study was to investigate the effects of a RR intervention on WCPM with practiced and unpracticed passages for secondary level students identified with SLD.

A visual analysis of results for this study showed a functional relationship was established between the RR intervention and the immediate improvement of reading fluency for the participating students identified with SLD. While there were differences and variability within performances, visual analysis indicates RR had an immediate positive affect on oral reading fluency with practiced and unpractice passages for all three students. Sarah participated in the intervention consistently for 19 sessions and demonstrated an immediate improvement with unpractice passages by approximately 24.4% as compared to the baseline data. Likewise, John participated in 20 sessions and demonstrated immediate improvements in WCPM with unpractice passages by approximately 26.8%. Matthew participated in 12 sessions and received the RR intervention inconsistently due to inconsistent school attendance. While Matthew did not demonstrate the same level of ORF increase when compared to the performances of Sarah and John, he demonstrated an immediate increase over the baseline mean with unpracticed passages of approximately 6.7% with reading level five, and 5.2% with reading level six. Matthew's low performance during this study may be related to his inconsistent participation in the study. Additionally, his reading rate started at a considerably higher level at baseline than Sarah and John. Research shows those students with a lower level of performance in decoding and word recognition demonstrate the greatest gains with the RR intervention (Alber-Morgan et al., 2007).

The findings of this study support previous research that indicated RR as an intervention to increase ORF has a positive effect on increasing WCPM for secondary level 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 SLD and demonstrated a history of academic weaknesses associated with reading deficits.

Limitations

Studies report establishing a stable baseline prior to a participant entering the intervention phase of a study helps in demonstrating a cause and effect relationship (Barger-Anderson, Domaracki, Kearney-Vakulick, & Kubina, 2004). During this study, two participants entered the intervention phase of the study demonstrating an increasing baseline, rather than a stable baseline. Thus, it is difficult to determine if the immediate increase in ORF performance is a direct result of introducing the intervention rather than a continuation of the baseline improvement.

Due to the high level of oral reading fluency performance for Matthew 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. Additionally, there was a procedural irregularity with John during the baseline phase. On days two, three, and four of the baseline phases, the teacher did not follow baseline procedures and asked John to read the baseline passages four times measuring WCPM during the fourth read. Due to this error, the baseline phase for John continued into the third week.

This study was conducted within a special education reading classroom with high school students who have been identified with a disability (SLD, Other Health Impairment, etc.). Due to student absences, demands of core content, student discipline issues, and classroom time constraints, it was difficult to implement the RR intervention consistently three day a week for 10 weeks. Additionally, 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 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
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Implications for Practice

This study supports previous studies indicating RR as an intervention for high school students identified with SLD and who struggle with reading can be effective as it exposes students to unfamiliar spelling patterns and words, allowing opportunities to build automaticity of word recognition, thus improving oral reading fluency. The RR intervention was easy to implement, took little time per student, and is cost effective. This intervention allowed students to practice oral reading in a safe environment with guidance from a teacher who could provide appropriate and accurate corrective feedback. Thus, the RR intervention provided participating students word level practice that was needed to help improve oral reading fluency and overall reading achievement.

Implications for Future Research

This study focused on high school students who had been identified with SLD in word recognition and demonstrated a history of struggling with reading achievement. While visual analysis of this study shows an immediate improvement with WCPM when the RR intervention was introduced, it is difficult to determine if these are the result of implementation of the intervention due to questions regarding baseline data. Additionally, all students in this study have been identified with SLD however, two of the students had been identified with an additional disability under IDEA (Other Health Impairment for ADHD and Speech Language Impairment). Thus, more research is needed that focuses on high school students solely identified with SLD in an area of reading (i.e. basic reading, reading comprehension, reading fluency). This research may offer a better understanding of the effectiveness of RR 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.

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