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**Using Repeated Reading and Previewing Vocabulary Interventions with Elementary-Aged
Struggling Readers to Improve Fluency and Comprehension**

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by

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ABSTRACT

Using Repeated Reading and Previewing Vocabulary Interventions with Elementary-Aged

Struggling Readers to Improve Fluency and Comprehension

Khaled S. Alotaibi
Old Dominion University, 2022
Director: Dr. Peggy P. Hester

Students with Learning disabilities and at risk for reading difficulties often face challenges in reading fluency and comprehension that impact negatively on academic success. Repeated reading (RR) is an intervention designed to increase reading fluency and comprehension skills among students at risk and diagnosed with disabilities. The purpose of this review was to investigate the effectiveness of the repeated reading (RR) and vocabulary previewing (VP) interventions on the fluency and comprehension skills of elementary school students. The review yielded a modest number of research articles published between 2008 and 2019. The results of these studies suggested that RR can have a positive effect on reading fluency and comprehension skills of students at-risk and those with identified learning disabilities. Discussion includes limitations of the RR intervention, implications for future research, and classroom practice.

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I dedicate this dissertation to the soul of my father. Also, I dedicate this dissertation to my brothers and sisters and my wife and my children, as well as my mother, who always supported me and encouraged me during my graduate studies. I also dedicate my dissertation to all educators and practitioners who provide support to students with reading difficulties.

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Chapter One: Introduction

Reading is one of the most fundamental skills students need to function and succeed in school and in life (Lo et al., 2011). Many students face challenges with reading, and about 20% of these students have difficulty with reading acquisition. According to the National Assessment of Educational Progress, both fourth- and eighth-grade students read below the basic proficiency level compared to 2017 (United States Department of Education, 2019); the most recent NAEP figures, from 2019 showed an insignificant decrease. Reading skills also significantly limit students with learning difficulties at school; these students usually have below-average reading fluency and comprehension. Reading fluency “comprises several features, including rate of reading, prosody, and attention to punctuation, all of which intersect to bring words on a page to life” (O’Connor et al., 2007, p. 31). Reading fluency can also include the number of words read correctly in one minute. Moreover, students struggle to comprehend (i.e., extract meaning from the text), which results in low achievement, poor grades, low self-esteem, and a lack of motivation to study (Anderson et al., 2001). Without addressing reading difficulties via explicit instruction or interventions, these students will likely fail school, which can lead to jobs with only minimal pay or the inability to get a job (Elwan, 1999).

In addition, about 80% of students with learning disabilities have difficulties in reading that need effective interventions. One effective intervention for students with difficulties is the Repeated Reading (RR) intervention. The RR intervention is the most common instructional intervention used to address reading difficulties for students with disabilities and for at-risk students (Therrien et al., 2012). Many studies (e.g., Elbaum et al., 2000; Meyer & Felton, 1999; Savaiano & Hatton, 2013; Vadasy & Sanders, 2008) define RR as an intervention of reading a text multiple times until achieving fluency. As an academic procedure, RR also requires students

to read a short passage aloud for a specific amount of time to achieve a certain reading rate (Dowhower, 1987). RR can be done many ways, such as requiring students to silently read and reread a certain passage or to read a passage aloud with a reader model (e.g., a teacher reads for students, and then students read a passage after listening to the teachers). Teachers must also scaffold and correct student errors to help them improve their reading skills. The RR intervention requires students to read a passage appropriate to their reading level and then gradually increase the difficulty of the reading requirements.

Due to an absence of direct and intensive instruction at the elementary level, some argue that students with reading deficiency may not attain fundamental basic reading skills at the grade level (Hawkins & Hale, 2011). Moreover, many teachers are not prepared to teach students who lack reading skills, given that, in most cases, it is not included in teacher training programs. As a result, many students lack the support they need, further impeding their abilities to read (Hawkins & Hale, 2011). Reading fluency is how quickly and precisely a student is able to read a passage. Due to reading deficiencies, students need more time to decode text, leaving their reading fluency level far below their peers. Although reading fluency is often overlooked, it may be a more important component than comprehension when planning an intervention. Repeated Reading is the most commonly used intervention and previous studies have indicated its effectiveness for reading fluency and comprehension. In repeated reading interventions, participants must read a given passage a specified number of times, or until they reach a standard of fluency that coincides with their objective. Students read either until they finish the passage or read in one-minute time segments. According to Therrien (2004), three to four repetitions yield positive effects on reading fluency. For comprehension, four repetitions are widely effective. Most research conducted on repeated reading interventions has focused primarily on secondary

school students. For example, Wexler et al. (2010) conducted 19 studies on fluency and comprehension interventions with secondary students from 1980-2005. Researchers identified 19 studies assessing the effects of multiple reading fluency intervention procedures on the reading fluency and comprehension of students; of these, nine studies included elementary school students. These nine studies were positive for reading fluency and comprehension and one used vocabulary previewing that had positive results. The latter study offered positive effects that could benefit from a systematic replication with elementary school students. The researchers concluded that RR interventions yielded positive effects on reading fluency and also showed that fluency was not directly parallel to comprehension. The finding supported previous research that indicated few interventions targeting fluency had positive effects on overall comprehension. The correlation between the two attributes, fluency and comprehension, decreased as students progressed to higher grade-levels. As only nine of the studies included elementary school students, there is a clear need for research on repeated reading interventions that focuses on students in elementary.

The Statement of Problem

Statistically, students with LDs represent one of the largest disability groups of students in schools. These students attend general education classes and receive most of their education from general education teachers, even though they are educated by special education teachers for part of the time. The large number of students with LDs require schools to use effective interventions, such as RR. Given the need for such research, the present study will systematically replicate the 2011 study by Hawkins and Hale, comparing the effectiveness of RR interventions with repeated RR coupled with the RR intervention plus a VP intervention in terms of reading outcomes of students with LD in elementary school.

Chapter Two: Review of the Literature

In this chapter, multiple research studies are discussed and reviewed to identify the effectiveness of using RR with elementary school students with reading difficulties. Also, results of review of the literature will help to determine the gap of the review studies.

Timeline of Using RR

According to Dowhower (1987), RR has been used as an intervention since the beginning of the 20th century. Although RR terminology and methods differ in many cases, the common goal is enhancing reading fluency by repeatedly reading a passage until the oral outcome is facile, flowing, and fluid (Dowhower, 1987). A meta-analysis of RR intervention studies (Lee & Yoon, 2017; Therrien, 2004) supported its effectiveness for increasing fluency and comprehension for all students, including those with disabilities. Furthermore, Therrien and Hughes (2008) reported gains in fluency and in comprehension via repeated reading for students with learning disabilities. Interestingly, Therrien and Hughes (2008) found that RR improved fluency and, more importantly, factual comprehension. According to Dowhower (1987), RR can theoretically be conceptualized as a combination of whole-language theory and automaticity theory, both of which describe information processing. Verbal efficiency theory also supports RR's rationale by giving credence to RR as a means of increasing word recognition speed. Likewise, Schreiber, as cited in Dowhower (1987), suggested that RR compensates for text's lack of prosodic cues and enhances reading fluency. Therefore, all these theoretical assumptions support RR's effectiveness for improving students' reading skills. Many studies support using RR with at-risk reading students and show that RR can appropriately support the reading skills of students with reading difficulties.

Effective reading instruction is a cornerstone of special education, particularly among students with reading difficulties (Therrien et al., 2006). Dowhower (1987) examined second-grade students exposed to RR. Dowhower (1987) found that oral reading comprehension and word-recognition accuracy improved and that unassisted and assisted repeated reading improved the reading and prosodic reading rates. These improvements occurred via an intervention with phonemic-awareness training, letter-sound practice, and practice with word families. Elementary students were divided into two learning groups. One practiced accuracy through repeated reading, and the other practiced reading speed using the same intervention. The results indicated no significant differences between the outcomes of the two strategies. However, learning to read accurately and automatically yielded better progress in overall reading fluency: “Despite the lack of differences between groups, the growth models showed that both conditions of practice with isolated letter sounds and words led to increased text reading fluency” (Hudson, 2011, pp. 22–23).

In addition, many researchers (e.g., Therrien, 2004; Therrien & Hughes, 2008; Therrien et al., 2006; Wexler et al., 2010) have studied the effectiveness of RR and other strategies to enhance comprehension of at-risk reading students. Levy et al. (1997) showed that word training or word identification with RR benefited context reading in extended passages with similar words. Other research targeted comprehension outcomes in addition to fluency. However, the previous studies show a lack of research examining the effectiveness of RR in prekindergarten, kindergarten, middle and high school students. Also, previous studies showed little examination of the effectiveness of repeated reading with students with learning disabilities who struggle in reading.

According to Levy et al. (1997) fluency can be improved through learning word recognition skills, which are then transferred toward content that uses similar words. One practical implication is that word repetition can enhance fluency in reading. In addition, practice in word recognition is important as a pre-requisite skill to contextual reading, particularly for slow learners. On the other hand, Levy and colleagues (1997) argue that more skills are required for comprehension over and above word recognition.

Enhancing reading ability is a complex undertaking because reading ability in itself is a composite skill involving an amalgam of lower and higher order processes (Therrien et al., 2006). For example, repeated reading enhances lower order processes, while question generation increases abilities in higher order processes. Therrien and colleagues (2006) have argued, however, that the effectiveness of these combined interventions is not conclusive.

Recent Repeated Reading Studies

Many students who aim to achieve fluency in non-native languages also struggle with comprehension, which can be addressed through RR sessions. Webb and Chang (2012) developed studies that explored RR's implications in the context of learning English for non-native speakers. These experiments' primary objective was to determine whether rereading texts helps foreign language learners improve their pronunciation and comprehension of words. In their study, Webb and Chang (2012) examined Taiwanese fifteen- and sixteen-year-old high school students enrolled in English classes and assigned them to groups that used assisted or unassisted RR. The researchers also used vocabulary learning in this study because it is an important part of improving language understanding. Preintervention and post-RR assessments were applied to examine the impact of assisted and unassisted practices.

Although educators have used RR for many years and researchers have produced numerous studies suggesting its efficacy, aspects of RR's design and various approaches, especially in the context of learning a foreign language, must be examined. Webb and Chang (2012) concluded that assisted learning produces a more noticeable impact on students' vocabulary when compared to unassisted RR, although both methods produce improvements for learners.

The primary difficulty in developing learning comprehension in a foreign language relates to the need to improve word recognition, which RR targets. The results indicate a need to examine the implications of this methodology on students' working memory to improve researchers' understanding of the concept. The vocabulary learning methods Webb and Chang (2012) used with high school students needs to be incorporated into RR. However, reading fluency, or the accuracy of pronunciation and speed of recognizing words, improved in the RR sample group of 28 students when compared to the 26 individuals in the control group.

Method of the Literature Review

To initiate the literature review, a comprehensive search was conducted of the following databases: Child Development & Adolescent Studies, Education Research Complete, Education Source, ERIC, Psychology and Behavioral Sciences Collection, and Teacher Reference Center. Key terms searched included: *repeated reading*, *reading*, *students with disabilities*, *students at risk*, *students with learning disabilities*, *students with emotional behavioral disorder*, *students with autism*, and *students with intellectual disability*. This initial search yielded 35 articles. All the articles' titles and abstracts were examined to ensure that the studies met the following inclusion criteria: (a) conducted between 2008 and 2019; (b) used empirical research methods (e.g., single subject, pre and posttest); (c) implemented RR as an independent variable; (d)

involved participants at pre-school, elementary, middle, and high school levels; (e) were written in English; and (f) were published in peer-reviewed journals. After reviewing all 35 studies using inclusion criteria, only seven studies met all the inclusion criteria. A hand search of the reference lists was then completed, and four additional articles were found that met the inclusion criteria. A total of 13 articles were found.

Results of the Literature Review

Of the results located (Escarpio & Barbetta, 2016; Hawkins et al., 2011; Hawkins et al., 2015; Hua et al., 2012; Huemer et al., 2010; Korat, 2009; Rohlfing et al., 2018; Savaiano & Hatton, 2013; Sukhram & Monda-Amaya, 2017; Therrien et al., 2012; Therrien and Hughes 2008; Vadasy & Sanders, 2008; Webb & Chang, 2012), the literature was categorized into two categories. First, six studies used RR for students at risk for reading difficulties but without diagnosed disabilities. Second, seven studies used RR for students with disabilities (learning disabilities [LD], autism [ASD], intellectual disabilities [ID], visual impairments [VI], and other disabilities). In addition, all reviewed studies examined the RR's effectiveness, how the intervention was implemented, and the type of students in the intervention. The studies and corresponding findings will follow. (See Appendix F for more information about the studies).

Students with Disabilities with and Without Reading Difficulties

Vadasy and Sanders (2008) and Hawkins et al. (2015) examined RR among elementary school students. Both studies' results indicated that RR helps to address students' reading difficulties. Vadasy and Sanders (2008) developed the Quick Reads program to improve students' vocabulary, word comprehension, and passage comprehension. This program involved repeatedly reading nonfiction texts written at a student's grade level. The students involved in this yearlong study were in grades four and five, and they had lower reading scores when

compared to their classmates. Seventy students were divided into two groups (treatment and control). The students in the treatment group worked in pairs using RR and Quick Reads, and students in the control group worked with a tutor.

Vadasy and Sanders (2008) found that RR interventions improved students' vocabulary, word comprehension, and passage comprehension. However, word-level comprehension among participants did not improve. In addition, the researchers suggested that peer-assisted learning strategies (PALS) could also be applied as a part of RR and feedback provision. Because the study examined the long-term impact of RR, this method appeared more effective.

Hawkins et al. (2015) used an alternative treatment design to examine the effectiveness of adult-mediated RR, comparing it with the listening-while-reading (LWR) technique and evaluating the techniques' effect on comprehension and maze accuracy using a timed recording of students' responses. Hawkins et al. (2015) implemented the intervention with elementary students. Four male African American fourth-grade students between 9 and 10 years old were exposed to these treatments in twice-weekly sessions for 12 weeks. In the RR condition, the students read a passage aloud to the researcher, who recorded the number of words read correctly within one minute. Students had three minutes to silently read the same passage and circle the correct word choices. In the LWR condition, students read passages along with an audio recording using an MP3 player. Each student received a performance score.

Results indicated that the two intervention conditions had similar effects on the reading fluency of three students with a slightly higher effect on a fourth student. The students' fluency and reading skills also improved with time during the study period. The oral reading fluency (ORF) efficiency improved for three participants with the LWR intervention as compared to the RR intervention. Two participants almost doubled the number of words they read correctly in

one minute with the LWR intervention as compared to RR intervention alone. Furthermore, the RR condition improved the maze assessment performance for all four students. However, one student demonstrated higher maze performance with the LWR intervention than with only using RR.

In contrast, Sukhram and Monda-Amaya (2017) used a pretest–posttest design to examine RR’s effectiveness among seventh-grade students struggling to develop appropriate reading skills. Two main strategies, RR and RR with feedback, were explored, and the students’ fluency and comprehension were measured to determine their narrative and expository capabilities. The ANOVA and ANCOVA tests revealed that feedback improved students’ results more significantly than RR did. The results also indicated that feedback improved participants’ fluency and comprehension. Both interventions were effective, so educators can employ corrective feedback when students read, when attention is required, or when students have significant reading issues.

Huemer et al. (2010) also used a pretest–posttest design to examine an RR intervention’s effectiveness, but with elementary students in Finland. Students were in fourth, fifth, and sixth grades. The students were perceived as bad readers with a reading performance lower than that of their typical peers. The researchers hypothesized that appropriate training would enhance the students’ reading speed and fluency. In addition, Huemer et al. (2010) employed a switching replication design that incorporated sample and control groups undergoing the same training and syllable-reading tests. Group A’s 20 children and Group B’s 16 children were asked to read pseudowords with syllables familiar to the students. The results suggest that this approach effectively improved students’ overall reading speed and pronunciation fluency but had little

impact on students' reading fluency for words with syllables not incorporated into the student learning program.

In addition, Hawkins et al. (2015) found that LWR can be more effective for ORF (i.e., reading words without error correction or listening to themselves or others during reading) and suggested that schools could target interventions based on students' needs. However, Vadasy and Sanders (2008) reported that Quick Reads could be used as a long-term program for students diagnosed with or at risk of reading difficulties. Therefore, Hawkins et al. (2015) and Vadasy and Sanders (2008) found that increasing the RR intervention's length could improve students' reading skills, and they suggested that practitioners implement interventions longer than one or two weeks (e.g., one month) to obtain credible results. Similar to Hawkins et al. (2015), Korat (2009) examined the use of CD-ROM storybooks to identify listening's impact on a total of 214 of prekindergarten and kindergarten students. The author used a pretest–posttest design to evaluate three groups. These students were assigned randomly into three age-appropriate groups. The first student group, an intervention group, was afforded three CD-ROM storybook reading sessions. The second group was afforded five reading sessions. However, the third group received the regular kindergarten program and served as a control group. The results suggest that the CD storybooks improved phonological awareness in both age groups, indicating that this method could improve early childhood literacy.

Various researchers have used modifications of RR to improve the method's initial design. Therrien et al. (2012) used a pretest–posttest design to examine the RR intervention's effectiveness among elementary school students. They developed the Reread-Adapt and Answer-Comprehend (RAAC) intervention, which combines RR and answering questions about the text to examine students' understanding of the passage. The researchers compared RAAC to a similar

method without RR. Over 4 months, the study's 30 third- through fifth-grade students participated in 50 sessions. Therrien et al. (2012) reported that the sample group with RR and the control group experienced enhanced reading results. The researchers focused only on text comprehension and did not assess reading fluency and errors, but these findings suggest that more effective alternatives to RR exist. Results indicated that six out of the 11 reviewed studies implemented RR intervention with students not diagnosed with any disabilities or disorders. However, they were considered at-risk for reading because they had low scores on reading assessments.

Students with Disabilities

Learning disabilities. RR has been an effective strategy to improve the skills of children with lower reading capabilities when compared to their peers, so this method may also assist those with learning disabilities (LD), which is “a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities” (Hammill et al., 1987, p 2). Studies by Hawkins et al. (2011) and by Therrien and Hughes (2008) applied alternative treatments to test the validity of RR for students with LD this implication. The first study examined 10th- and 11th-grade students with reading abilities compared to fourth- and fifth-grade students. Hawkins et al. (2011) incorporated the vocabulary previewing (VP) method into RR. VP explains unknown words to students as they read a text to improve comprehension. The control group performed at lower levels than the intervention group following the RR+VP procedure. Therefore, the VP and RR intervention was demonstrated as valid strategies for addressing reading issues in students with LD as the students in the RR and VP group demonstrated improved reading skills.

As in studies that use a general population, educators working with students who have LD can employ various RR designs. Hawkins et al. (2011) tested three groups (control, RR, and RR with VP) in 10- to 20-minute sessions that occurred three to five times per week. To test the outcomes, students read three passages ranging from 70 to 100 words and answered three multiple-choice questions about the passages.

To pass, participants had to make fewer than seven errors while reading. Hawkins et al. (2011) argued that the results indicated that RR with VP significantly improved students' text comprehension, as was supported by the authors' effect-size data. Hawkins et al. (2011) found that VP helped students improve oral comprehension, but it did not affect the main variables of reading comprehension and fluency. Therrien and Hughes (2008) reported similar results for fourth, fifth, and sixth-grade students with LD who were enrolled in weekly four-day RR sessions for two weeks. The 32 students demonstrated improvement when reading familiar passages and when understanding instructions and factual information. However, the researchers did not compare the outcomes of unrepeated oral reading to RR outcomes, which might have provided a better understanding of this relationship.

Autism and intellectual disability. Hua et al. (2012) examined using RR for improving reading outcomes for elementary students who struggle with reading due to Autism (ASD) or Intellectual Disability (ID) diagnoses. Hua et al. (2012) used a pretest–posttest design. The authors tested the reading proficiency of elementary school students with cognitive disabilities to determine whether RR improves this aspect of learning. The three participants read passages written for grades one, two, and six. The applied developed a Reread-Adapt and Answer-Comprehend (RAAC) procedure and used multiple questions for each passage along with a checklist. Hua et al. (2012) stated that all participants' outcomes indicated positive

improvements in the controlled variables, such as ORF and correct words per minute (CWPM). Hence, this study suggests RR benefits students.

Emotional and behavioral disorders. Individuals with emotional and behavioral disorders (EBD) experience issues in various educational domains. Escarpio and Barbetta (2016) used RR to address the reading difficulties of middle school students with EBD by evaluating RR's effect on sixth-grade students. Escarpio et al. (2016) used alternating treatment designs to examine RR's effectiveness on improving three conditions (reading fluency, errors, and comprehension). The results indicated positive changes for all students regarding measured variables, such as reading fluency and the number of errors. The participants were required to read texts ranging from 100 to 150 words and 300 to 450 words. Teachers conducted the sessions, and the RR involved reading the same passage three times. Escarpio and Barbetta (2016) found that RR helped all participants improve their reading fluency and comprehension with fewer errors during reading. However, the participants all had various fluency outcomes.

Visual impairment. Children diagnosed with visual impairments may require additional support, such as reading glasses or larger print, to read a passage. However, Savaiano and Hatton (2013) tested the claim that RR can be applied to improve these children's reading measures by examining the oral reading rate and text comprehension of third- through sixth-grade elementary school students. Two of the experiment's participants used reading glasses routinely. The tutors provided instructions for the children, and the researchers used a questionnaire to determine whether RR altered the participants' attitudes towards reading. The findings revealed a functional relationship between RR, oral reading, and comprehension, suggesting a positive impact of the methodology on children's reading ability. However, this study produced some

conflicting results for two of the three participants; this should be considered when designing similar interventions for children with visual impairments.

Other disabilities factors. Specific language impairment (SLI) can affect a child's ability to understand reading material or learn subjects such as math (Rohlfing et al., 2018). One of the interventions that can be used with students with SLI to improve their reading is RR. Rohlfing et al. (2018) examined whether RR could help students overcome SLI-related issues by examining 16 prekindergarten children from Germany. Eight were diagnosed with LD, and other students were diagnosed with SLI. The researchers conducted three at-home sessions while children listened to a text narration, and the examiner repeated object names several times. Each story was recited three times, and identified words were repeated four times. The primary measures (retention and recall) were tested after each session, and the results suggested that the sample and control groups demonstrated an improved understanding of words, even though children with SLIs showed poorer results than their peers. Even though SLIs severely and directly impact learning outcomes, RR can significantly improve the reading comprehension of children with SLIs.

One of the important aspects to improving reading comprehension is vocabulary knowledge gained through previewing vocabulary. Some researchers (i.e., Hawkins & Hale, 2011; National Reading Panel, 2000) refer to the strong relationship between reading comprehension and vocabulary words. When students increase their vocabulary words, they increase their understanding of the text. In addition, there are a variety of vocabulary strategies that can help the students improve their vocabulary and help them better understand the text when they read. Thus, incorporating a vocabulary-building strategy within fluency training may be an effective strategy to support reading comprehension. Hawkins and Hale (2011)

implemented a vocabulary-building strategy, which involved students previewing a list of vocabulary words before they read the passages which strengthened children's reading skills. Their results indicated that previewing vocabulary was a method that helped students understand the meaning of the words and improve their vocabulary acquisition (Hawkins & Hale, 2011).

Research Designs

The studies' research designs varied. Eight studies employed pretest–posttest designs (Huem et al., 2010; Korat, 2009; Rohlfing et al., 2018; Sukhram & Monda-Amaya, 2017; Therrien et al., 2012; Vadasy & Sanders, 2008). Three studies used an alternating treatments design (Escarpio & Barbetta, 2016; Hawkins et al., 2011; Hawkins et al., 2015). Hua et al. (2012) used a multiple baseline across subjects and only examined RR's effectiveness between two phases (baseline and intervention). Therrien and Hughes (2008) used a single-factor design to examine RR by comparing results between the baseline and intervention phases. None of the reviewed studies examined maintenance of RR.

Major Findings of Treatment fidelity and Social Validity in the Reviewed Studies

Results of the review studies indicated that only one study (Savaiano & Hatton, 2013) recorded treatment fidelity. The study collected treatment fidelity data on 20%-38% of the sessions for the three teacher participants with overall scores between 92-100% for teacher implementation. Moreover, only two studies (Hawkins et al., 2011; Savaiano & Hatton, 2013) reported the social validity using questionnaires or interviews. Savaiano and Hatton (2013) used a questionnaire adapted from the Reader Self-Perception Scale to identify whether the interventions was seen as effective by the participants. In addition, a teacher read the statements to participants, who verbally answered yes or no to whether they felt the intervention was

perceived as a worthwhile intervention. The teacher recorded the students' answers twice--once prior to baseline and after the intervention. The results indicated that all students answered that the intervention was effective and provided positive responses about the RR intervention.

Hawkins et al. (2011) examined social validity among six students, all of whom responded to five questions. Five students strongly agreed that RR increased their reading, and one strongly disagreed. The collaborating teacher completed a questionnaire about the intervention, and he responded he liked using the VP component with RR to help students increase their reading.

Evidence of Repeated Reading's Effectiveness

Students at risk of reading difficulties. Students with reading difficulties can benefit from RR. Sukhram and Monda-Amaya (2017), Therrien et al. (2012), and Vadasy and Sanders (2008) suggest that struggling readers understand text better and read more fluently if they use RR. Six of the 11 publications focused on students who failed to achieve the reading accuracy and comprehension rates of their peers. The following researchers examined elementary students: Vadasy and Sanders (2008), Hawkins et al. (2015), Korat (2009), and Huemer et al. (2010). The authors highlighted the improved text comprehension and reading accuracy, which they attributed to RR use. Most participants in the reviewed six studies were regular students who attend elementary school. Only one out of the six used RR with middle school students at risk in reading. Improving adult students' reading capabilities can be more challenging when compared to younger individuals. Middle school students who used RR were part of study by Sukhram and Monda-Amaya (2017), and this study indicated that RR is adequate for these populations as well. These results support RR's versatility and ability to be adjusted for various populations' needs.

However, some researchers reported conflicting results regarding RR's efficiency for the general student population when compared to other reading-enhancement methods. For example, Vadasy and Sanders (2008) stated that subjects' word-level comprehension did not improve. Some studies suggested that methods such as RAAC and LWR were more productive than RR. This literature gap exists because this review did not find a study comparing and evaluating all the reading comprehension improvement methods described above. In addition, using another strategy with RR can be more effective than using only RR. Vadasy and Sanders (2008) used peer tutoring with RR for positive results. Combining other strategies with RR can improve students' reading skills more than using only RR.

Individuals with Disabilities. Some RR researchers focused on creating strategies to improve the reading capabilities of students with disabilities. Specifically, Therrien and Hughes (2008), Hawkins et al. (2011), and Rohlfing et al. (2018) examined learning disabilities; Hua et al. (2012) focused on intellectual disabilities; and Escarpio and Barbetta (2016) developed an intervention for EBD. Only two of these studies (Hawkins et al., 2011; Therrien & Hughes, 2008) implemented RR with high school students. These studies indicated that RR is also adequate for these populations. However, other studies used RR with elementary students. Most of these studies indicated that RR effectively improved students' reading skills. These studies showcase improved reading fluency and comprehension rates, but some conflicting results emerged. For example, Hua et al. (2012) only studied three participants, one of whom did not improve in reading fluency and accuracy.

Research Design

The methodology that RR researchers use is important because reading interventions are meant to provide students with a tool and with help from tutors to significantly decrease errors and miscomprehension when reading a paragraph. Most of the articles described a pretest–posttest design, meaning that the students’ reading metrics were recorded before and after the RR intervention. Six researchers used a single-subject method to evaluate a causal relationship between the dependent and independent variables. In general, the methodologies in the examined literature were suitable for research designed to assess intervention effects, and the findings support that RR is appropriate for addressing reading issues.

However, one single-subject study examined RR’s effectiveness in the maintenance and generalization phases. For any intervention, it is important to know whether the intervention’s effects are maintained over time and whether a participant can generalize these effects across settings, teachers, or subject areas.

Social Validity

Only one of the 13 studies examined social validity. Examining participants’ opinions about the process and the RR intervention’s impact is important. The results indicated a gap in the research that must be addressed. Specifically, researchers must ask participants about the RR’s effectiveness via questionnaires or interviews.

Gaps of the Reviewed Studies

Out of five single-subject studies, only one provided social validity measures. In addition, none of the single case studies reported treatment fidelity measure. Important aspects of any intervention are the accuracy of implementation of intervention. The absence of content and

procedural treatment fidelity measures is another limitation of the single-subject studies. The effect of interventions must be interpreted with caution without a measure indicating that the intervention was implemented accurately across participants. Another gap in the single-subject research is that the intervention was implemented only a limited number of sessions. For example, Therrien and Hughes' (2008) intervention lasted only two weeks. Thus, drawing conclusions about RR's long-term impact on students' educational achievement based on limited data is difficult, especially if the study lacked maintenance data.

Results of this review of 11 RR studies reveal that researchers and educators should focus on developing reading improvement methods for children with disabilities. Long-term studies that examine a systemwide approach to addressing reading errors and text understanding are necessary. Research outcomes could be improved by implementing studies for a longer period of time, ensuring enough data point to demonstrate the effects of a given intervention and examine how intervention benefits students. Incorporating varied approaches, such as providing above-grade-level passages or working on various texts instead of focusing on only one paragraph, might be beneficial. Developing interventions that use these methods have the potential to create better outcomes for students with reading difficulties.

Frank et al. (2007) found that practicing several stories appropriate to students' reading levels or abilities was more effective than practicing one story because many stories' vocabularies overlap. This additional step could combine RR with other strategies, such as using social story, that can improve students' reading skills. Future studies might study this aspect in more detail to determine whether the same benefit would persist at higher reading levels when the story vocabulary is more varied. In addition, future studies could investigate whether stories

about different topics might contribute to the strategy's effectiveness. Hopefully children could carry the gains from one reading to another through RR.

Achieving grade-specific reading comprehension and fluency is an essential skill for schoolchildren, but many students experience difficulties with this task because of disorders, disabilities, or because they need more time and practice to master reading. Educators can use RR, which involves reading the same text several times until a student makes no mistakes, to enhance children's reading abilities. It can also be combined with other methods, such as tutoring sessions, listening, reading, and vocabulary previewing.

The Purpose of the Study

Many students face reading difficulties at school (Therrien et al., 2012; United States Department of Education, 2019), and these students need effective intervention. RR is an established evidence-based practice that has successfully increased comprehension and fluency skills for students with reading difficulties. However, it is unclear how RR intervention can help students with LD to increase their reading ability. Results of the reviewed studies indicated that few implemented RR with students with LD compared with other students with reading difficulties, especially, elementary aged students. The purpose of this study is to examine the RR intervention's effectiveness for elementary aged students at risk of reading and students with learning disabilities by systematically replicating a study conducted by Hawkins et al. (2011) that examined the effectiveness of a RR intervention with an RR plus VP intervention and their effects on students' reading fluency and comprehension.

Research Questions

Previous research by Hawkins and Hale (2011) demonstrates that the combination of repeated reading and previewing vocabulary were the most effective interventions in increasing fluency and comprehension with students with LD; consequently, this study will aim to answer the following questions:

1. Is there a functional relation between the repeated reading intervention and an increase in student reading fluency and comprehension?
2. Is there a functional relation between the repeated reading plus vocabulary previewing interventions and an increase in student reading fluency and comprehension?
3. What are students' and teachers' perceptions of the use and effectiveness of the RR intervention and the RR plus the VP intervention?

Chapter Three: Methods

Participants

Student participants included four (4) elementary school students, all with learning disabilities (LD) who had difficulty in reading fluency and in comprehending what they read, as identified by their teachers (See Table 1). Participants were selected whose reading performance is at least one year lower than their current grade level, and who met the criteria for learning disabilities in reading. These students received special education services for one hour each school day. To address gender effects, efforts were made to have an equal number of boys and girls, ages eight to nine, who are struggling readers in the third, fourth grades.

Procedure of Selection of Participants

All student participants were recruited from the internet. An announcement was posted online describing the research study and asking students with learning disabilities (LDs) who had reading difficulties and who were at risk for reading problems to participate in the study. A phone number was provided so that the parents of the student could call the researcher, who would describe the study in detail and provide them with a consent form for them to sign. In addition, the parents were told they would be given a \$20 gift certificate for their child at the conclusion of the study. Four students who were diagnosed with LD were identified to participate in this study. These students had difficulty with reading fluency skills and comprehension and could benefit from a reading intervention program to improve these skills. Their teachers had also identified these participants as having specific difficulty in reading after assessing them and said they met the study's inclusion criteria explained in the procedures to determine student participants' instructional level. In addition, the students were already diagnosed as having LDs by their school, which qualified them to receive special education

services. It was emphasized to the teachers that they identify and select students who were having difficulty in the areas of reading fluency and overall comprehension. Teachers were graduate students at Old Dominion University and were already special education teachers with many years of teaching experience. One criterion of selecting participants was that each participant needed to be diagnosed as having an LD or reading difficulty. Students were considered to have reading difficulty if they scored a year lower than average in reading when compared to their peers in the same grade and they were thus considered at risk of failure, as measured through a reading test implemented by the teacher as well as class scores in reading. After the special education teachers had identified potential participants who had received low scores on the assessment and who were already diagnosed as having learning disabilities, the researcher determined each student's reading level and LD diagnosis before choosing the final participants and implementing any experimental procedures. Any student who was not diagnosed with an LD and who was older than 11 or younger than 9 was excluded from the study. Only four students who had low scores on the assessment and who were diagnosed as having LDs were included in the study.

Table 1

Descriptive of students

Name	Age	Gender	Grade	Disability
Participant A	9	Male	4	Difficulty with reading
Participant B	8	Female	3	Learning disability

Participant C	8	Male	3	Difficulty with reading
Participant D	8	Female	3	Learning disability

Teachers

Two doctoral students were the teachers who worked with the participants in this study. Both teachers had master's degrees in special education. Both have more than 15 years of working experiences teaching students with disabilities. These doctoral students were responsible for implementing the intervention with the student participants.

Table 2

Descriptive of teachers

Name	Age Range	Gender	Degree	Year of Teaching Experiences
Teacher 1	45-55	Female	Master's degree	More than 15 years
Teacher 2	45-55	Female	Master's degree	More than 15 years

Setting

This study was conducted with students with LD and reading difficulties who were enrolled in public school in the southeastern United States. All participants attended both general and special education programs. However, this study was conducted online because of the Covid-19 pandemic. All the intervention procedures were implemented online by using the

Zoom application. All participants and teachers were required to attend online sessions through Zoom. Also, coders and the researcher monitored each student's session and progress and reading performance via the online session.

Determining Students Participants' Instructional Level

To identify her/his instructional level, each participant was asked to read three passages, each at a different designated grade level. The students were asked to read aloud text passages with decreasing grade level readability, starting with their current grade level until they met the instructional level. The instructional level was determined when the participants read between 50 and 70 words correct per minute with no more than seven mistakes (Hawkins & Hale, 2011). The researcher used each student's median scores to evaluate performance at each grade level.

Materials

During both the instructional level assessment and experimental sessions, students read passages from the Timed Reading Series (Spargo, 1989). Each passage included 200 words and each passage covered different topics. Passages had 10 multiple-choice comprehension questions, each with three answer options. Some questions targeted factual knowledge, and some targeted inferential knowledge. The passages were assigned randomly to students. For the RR + VP condition, the collaborating special education teacher and researcher independently selected 10 words that were unknown, or students had mistaken during the first reading of the passage to help them with their comprehension. Words selected by the teacher participant and the researcher were compared and disagreements were discussed to create a final list of 10 target words for each passage. The researcher and teacher participant worked together to make brief definitions for each of the target words that were relevant to the content of the passage.

Experimental Design

The study used an alternating treatment design to compare the effects of the two interventions and their effects on reading fluency and comprehension (Hawkins & Hale, 2011). This design was chosen because it allows a comparison between the two phases (baseline phase and treatment phase) and investigation of the effectiveness of the treatments. In addition, it allowed the investigation of the greater effect between the two treatments. During the baseline, students' reading level scores were examined prior to any treatment. However, in the treatment phase, students received two different treatments in separate sessions that allowed the researcher to compare each student's scores. This study was a systematic replication of an alternating treatment design implemented by Hawkins and Hale (2011). In this design, there is a rapid and frequent alternation of conditions in each phase. In each phase, at least five sessions were conducted. Having a clear pattern demonstrating results was established and allowed the use of statistical methods, such as *p* value (Kratochwill & Levin, 2014).

Measures

The first dependent variable, oral reading fluency (ORF), was measured as the number of words read correctly in 1 minute. The second dependent variable was participants' reading comprehension level, which was determined by the percentage of comprehension questions answered correctly. The third dependent variable measured the reading comprehension rate (Hawkins & Hale, 2011). Reading comprehension was calculated by measuring the percentage of comprehension questions answered correctly, divided by the total number of seconds taken to read the passage multiplied by 60 (Hawkins & Hale, 2011). Dependent variables were evaluated using measures from intervention sessions.

Independent variable. The dependent variables were the Repeated Reading intervention and the Repeated Reading plus Previewing Vocabulary intervention.

Dependent variable. Three dependent variables were used to measure the effects of the repeated reading intervention and the repeated reading plus vocabulary previewing intervention:

- 1) Oral reading fluency (ORF), defined as the number of words students read correctly in one minute,
- 2) Reading comprehension level, defined as the percentage of comprehension questions students answer correctly, and
- 3) Oral reading comprehension rate, defined as the percentage of comprehension questions answered correctly, divided by the total number of seconds taken to read the passage multiplied by 60 will be measured as the reading comprehension rate (Hawkins & Hale, 2011).

Observation.

All intervention sessions were recorded by videotape to allow the observers watch and record each participant's performance. Each student was observed by two coders. Observation was essential to the process of obtaining accurate data on reading passages for this study. The teacher assigned to collect the data was a third-grade teacher with several years of teaching experience, and who was working specifically with students with LD in reading classes. The researcher observed two days of instruction weekly for twelve (12) weeks. The teachers read the passages for the student and then the student read the passages aloud and the researcher used a checklist to count how many mistakes the student made.

Treatment Fidelity

To ensure that the intervention was implemented with fidelity, data were collected during each phase. The researcher met with the teacher to train him/her in the procedures of the

intervention. During all experimental phases, a trained coder recorded teacher adherence to the protocol for each experiment phase by using a fidelity checklist to note the occurrence or nonoccurrence of each procedural step (See Appendix A).

Teacher participant training consisted of three parts: (a) the researcher verbally described the steps for the Repeated Reading and Repeated Reading plus Vocabulary Previewing interventions, procedures for collecting data, and addressing any questions, (b) the researcher modeled the intervention and the procedure for recording words correct and errors per minute (EPM) using passages that were not be used during the study, and (c) the researcher monitored each teacher as he/she practiced the procedures and provided feedback. The teachers practiced until he/she performed the intervention with 100% accuracy for three consecutive days using the treatment fidelity checklist.

Treatment Fidelity data were collected through direct observation with reliability assessments made by viewing a videotape of the session. Each teacher was provided a description of the Repeated Reading and Repeated Reading plus Previewing Vocabulary interventions procedures and copies of treatment integrity checklists for baseline, intervention, and maintenance (see Appendix A). Each teacher recorded both content and process fidelity. They recorded whether (a) the appropriate materials were present, (b) the steps of the intervention followed the proper sequence, and (c) the data collection procedures were being implemented correctly. Procedural fidelity data were collected for each session, with inter observer agreement between two observers conducted in 33% of the sessions. Treatment fidelity was calculated by dividing the number of procedural steps completed correctly by the total number of steps, multiplied by 100. If the treatment fidelity score fell below 90%, the teacher was retrained.

Data Collection and Inter-Observer Agreement

All sessions were videotaped and coded by two graduate students, one designated as a primary coder, the second as the reliability coder. To ensure accuracy of the coded data, the graduate students practiced using the coding procedures by taking data on practice videotapes of children reading passages similar to those in the study until they achieved 95% agreement using a formula: the number of agreements divided by the number of agreements plus the number of disagreements, multiplied by 100. Inter-observer agreement was assessed on 33% of the sessions in each phase of the study. If agreement fell below 90%, the coders were retrained until they reached agreement criteria.

Additionally, this was calculated by dividing the number of agreements by the added value of agreements and disagreements, then multiplied by one hundred. A criterion level for a second observer score was recorded. An average agreement value was determined for inter-scorer agreement for reading comprehension and the time it took to complete reading the passage.

Social Validity

One of the standards of the effectiveness of an intervention is its value and usefulness to the participants: students and teachers. The students and instructors completed a survey with questions to assess their opinions of the repeated reading intervention and the repeated reading plus vocabulary previewing intervention and whether they felt their reading skills improved during the intervention period with either or both of these interventions (see Appendix B). The questionnaire also contained items that solicited participant opinions about the efficacy of various components of the intervention, such as charting progress, the one-minute timings, as well as their opinion of the passages used in the study. A 5-point Likert scale, as well as open-ended questions, were used in both social validity assessments.

Student participant social validity assessment. This survey consisted of 14 Likert Scale questions and open-end questions. The teacher read and made all students rate, from 1-5, with 1 indicating strong disagreement and 5 reflecting strong agreement, the following questions: 1) I feel that Repeated Reading and Previewing Vocabulary interventions helped me read with greater accuracy, 2) Reading a passage several times made me read a lot faster, 3) I really liked rereading the passages, 4) The Repeated Reading and Previewing Vocabulary interventions were easy to learn, 5) Having the teacher tell me the words I missed helped me read with fewer mistakes, 6) I made progress by rereading passages and reviewing the words I missed, 7) When I read faster, I could understand what I read better, 8) I really liked seeing the progress I was making on the graph, 9) I would like to keep rereading passages, reviewing the words I missed, and seeing my progress on a graph, 10) Repeated Reading helped me read faster than I could before, 11) I read better now than I could before, 12) When I read, I recognize more words than I used to, 13) I enjoyed reading more now than I used to, 14) I would like to continue Repeated Reading next year.

The remaining three questions were open-ended questions: 1) What did you like best about the Repeated Reading Repeated Reading and Previewing Vocabulary intervention? Why? 2) What did you not like about the RR and the Repeated Reading plus Previewing Vocabulary interventions? Why? 3) How has your ability to read words more fluently affected your ability to understand the passages we read? These data were used to determine the acceptance of RR and RR+VP interventions among the participants.

Questionnaires also were completed by the instructors in order to obtain their feedback. Statements that the instructors answered were in the same format as the students' questionnaire. It consisted of Likert Scale questions and open-ended questions. Selecting a number between 1-

5, with 1 being “strongly disagree” and 5 “strongly agree”, they expressed how they feel about these statements.

Statements given to the instructors included: (1) Repeated Reading and Previewing Vocabulary interventions helped the students to read with greater accuracy, (2) Students could read the passages multiple times and did not digress in effort, (3) I can continuously analyze the rereading of the passages, (4) The Repeated Reading and Repeated Reading plus Previewing Vocabulary interventions were easy to teach, (5) The students decreased in mistakes when I corrected them, (6) I was motivated to continue this intervention due to the students’ graphic progress, (7) Students performed better after seeing the success they achieved with each session, (8) I can apply this intervention to a daily classroom session.

The open-ended questions that were given to participants were: 1) Did you like the interventions? 2) What did you not like about the interventions? 3) What other information would you like to add? Answers to these questions were evaluated to determine whether the teacher participants thought the intervention was effective and what aspects of it could be improved.

General Procedures

Three conditions were implemented with the students: Baseline, RR, and RR + VP. The primary researcher worked in collaboration with the instructor for each child. Sessions were conducted via Zoom. Sessions were held 3–5 days a week and lasted between 15 and 25 minutes, depending on the students’ availability.

Baseline

To ensure that the intervention was responsible for the change in each student’s reading skills, students participated in a third condition, a control condition. Participants read a passage randomly assigned to the control condition and then answered comprehension questions

consisting of 10 multiple-choice questions about the content. These questions were developed by the teacher and the researcher together. During the reading sessions, the teacher recorded the words read correctly within the first minute by using the reading curriculum-based measurement (CBM) scoring procedures (Hawkins & Hale, 2011). In addition, participants were tested on the time taken to read the passage as a measure of fluency.

Repeated Reading Intervention

During the RR condition, the instructor gave the students a copy of the reading passage randomly assigned to this condition. Each student was asked to read aloud at his or her regular pace. The instructor counted the number of words misread by each student. These words were then written on an index card after a student completed the passage. The instructor presented the vocabulary to the students on a screen to help them see the words and made them read and listen to the words three times. This helped them to memorize the words until they could correctly read them three times, which helped them increase their reading fluency and comprehension. This is called the error-correction procedure (Hawkins et al., 2015).

After this process, students read the passage out loud again. The instructor let the student know that they needed to answer more comprehension questions once they completed reading the passage. In this second trial, the instructor recorded the number of words the student read correctly and incorrectly during the first minute by using the reading curriculum-based measurement (CBM) scoring procedure to assess reading fluency (Shapiro, 2004). Again, the time was recorded using a stopwatch in order to calculate the words read correctly and the time for the student to complete the reading. To test for generalization, some of these same words were used in subsequent passages. However, the passages were different from the passages the students received in the previous sessions used by the other teacher.

Repeated Reading Intervention + Vocabulary Previewing Interventions

The repeated reading intervention + vocabulary-previewing intervention used the same steps as the repeated reading intervention. In addition, the students read the words and learned the definitions prior to reading. The students were then presented with the words one-by-one and were asked to read the word aloud and present the definition. The RR intervention + VP intervention followed the same procedure as the RR condition, once the students read the correct word and defined the word three times.

Data Analysis

This study used graphic displays as a means of visual analysis for a single case 1 design (SCD). The essential logic behind single SCD research documents the treatment effect of the systematic manipulation of an independent variable and how these results related to predicted and observed changes in the dependent variable. In order to accomplish this, each participant serves as his/her own control. Thus, the dependent variable is consistently measured throughout the entire study, starting at a baseline before the intervention takes place. This is to demonstrate a reliable pre-intervention projection of performance if there is no intervention. Also, the independent variable must be manipulated in accordance with the experiment, with demonstrated predicted change of the dependent variable at three separate points of time to qualify as a study that adheres to the standards of What Works Clearinghouse (WWC, 2014). Visual analysis of trends, level, and variability, immediacy of effect, overlapping data, and patterns across conditions are essential in determining the effectiveness of the interventions. For immediacy of effect, it is following the manipulation of the independent variable, a difference in the patterns reveals an immediacy of effect. It can be calculated using the mean or median difference between the latter three to-five data points from phase 1 and the first three-to-five data points in

phase 2. Typically, the greater the immediacy of effect, it is very probable that the change is associated with manipulation of the independent variable (Lane & Gast, 2014). The PND and P-values were calculated by using the digital program that was created by Tarlow and Penland (2016). This program was created to examine the effects of the RR treatment and identify an overlap and the proportion of data between each phase, such as baseline and treatment for all the four participants.

CHAPTER FOUR

RESULTS

The present study was designed to address the effects of using a using a repeated reading (RR) Intervention and a repeated reading plus vocabulary previewing (RR + VP) vocabulary intervention with elementary-aged struggling readers to improve reading fluency and comprehension for four students with learning disabilities with reading difficulties. In this chapter, the analyses of the effects of the intervention on students' performance are described. The results were examined in each of the following areas: (a) the effectiveness of RR intervention with students with learning disabilities with reading difficulties, (b) the effectiveness of the RR plus VP intervention with students with learning disabilities with reading difficulties, (c) the ability of the teachers to implement the implementation of the RR and the RR plus VP interventions with explicit instruction as evaluated by the procedural and content fidelity checklist, (e) student participant satisfaction with the use of the repeated reading intervention and the repeated reading plus vocabulary previewing intervention as appraised by the student satisfaction survey, and (f) the teachers' perceptions of the usefulness, feasibility, and satisfaction of the intervention as assessed by the teacher social validity survey.

The results for each research question will be provided in the following sections.

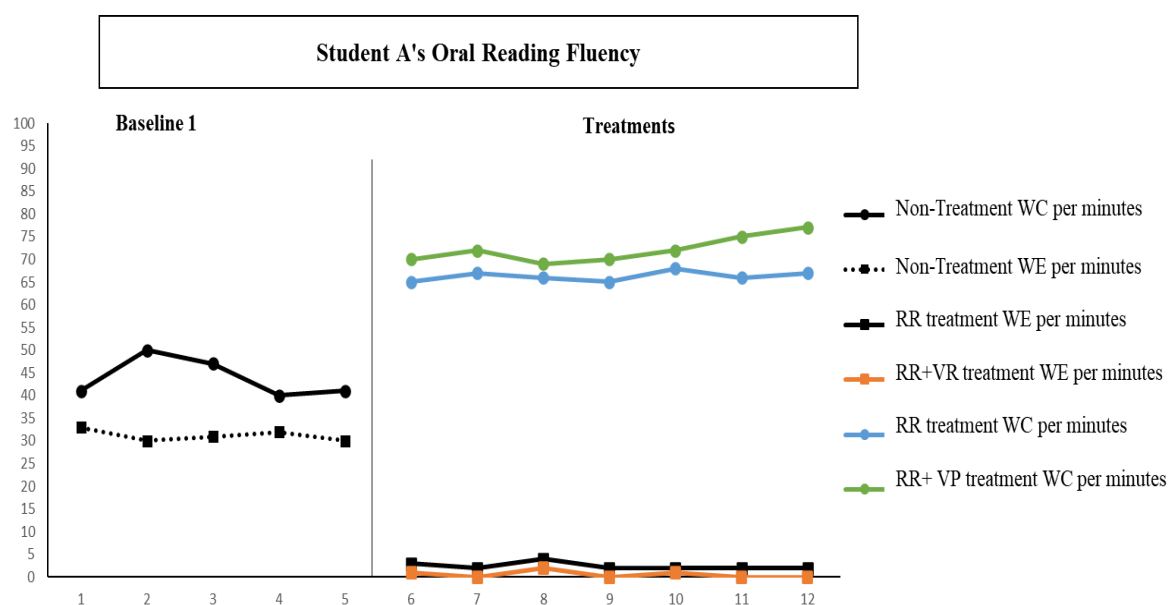
Research Question 1: Is there a functional relation between Repeated Reading intervention and an increase in student reading fluency and comprehension? **Research Question 2:** Is there a functional relation between Repeated Reading plus Vocabulary Previewing intervention and an increase in student reading fluency and comprehension?

This study used an alternating treatment design (ATD) to examine the effectiveness of two or more interventions on one or more behaviors. To eliminate sequencing effects, the order of implementing each intervention was randomly counterbalanced with no more than two data points being implemented in the same order. Intervention effects based on the two research questions with each subject are delineated below.

Student A. Figure 1 shows the results of RR and RR +VR interventions in improving the student's reading fluency. Student A increased the number of words he read correctly and decreased his number of errors per minute during the intervention. As shown in Figure 1, the mean of his words read correctly (WC) per minute was 44 during baseline. However, after implementation of the RR intervention, the mean of the WC increased to 66 words read correctly per minute. Moreover, the mean of the WC per minute increased even more when student A received the RR+VR intervention. The mean was 72 words read correctly per minute with an increasing trend during the treatment phase. Results indicated that both the RR and RR+VR interventions were effective in increasing the student's correct reading of words per minute. Moreover, as shown in Figure 1, results show that both RR and RR+VR immediately increased the student's reading fluency after comparing the last two data sessions in baseline and the first data session during the treatment phase. Results also indicate that there was no overlapping data (PND = 100%) between the baseline phase and the treatment phase.

Moreover, Student A decreased the number of word errors (WE) per minute during this one-minute sample. Results indicated that both RR and RR+VP interventions were effective in decreasing reading word errors per minute as shown in Figure 1. Also, the mean WE per minute was 31 during Baseline. However, after implementing the RR intervention, the mean WE per minute decreased to 2 words. Furthermore, the mean WE per minute decreased even more when

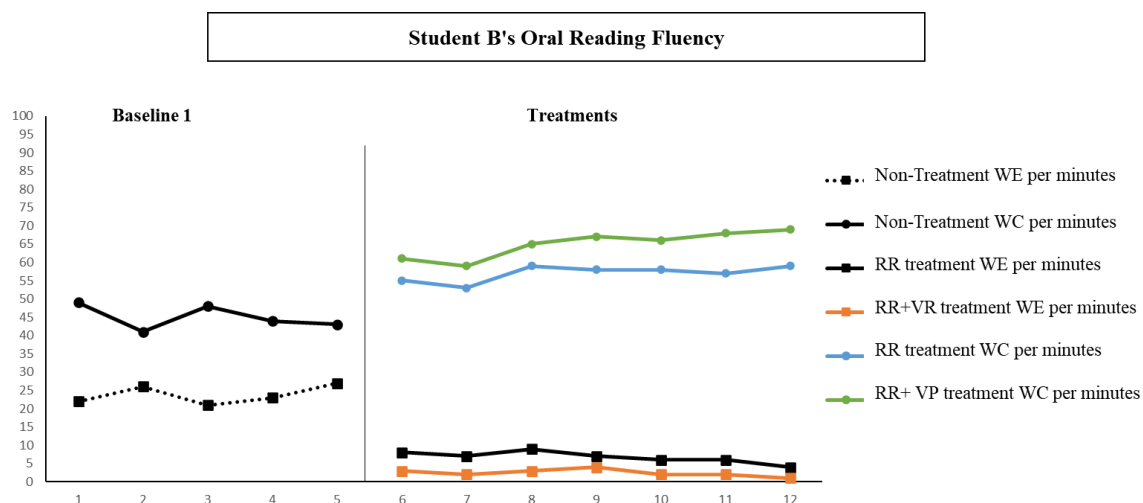
student A received the RR+VR intervention. The mean was one word per minute that was not read correctly during the treatment phase. In addition, as shown in Figure 1, results show that both RR and RR+VR had an immediate effect on decreasing the student's reading errors, comparing the last data sessions in baseline and the first data sessions during the treatment phase. Results also show that there was no overlapping data (PND = 100%) between the baseline phase and the treatment phase.



Student B. Figure 2 shows the results of RR and RR +VR interventions in improving the student's reading fluency. Student B increased the number of words he read correctly and decreased his number of errors per minute during the intervention. The mean of his WC per minute was 45 words read correctly. However, after implementation of the RR intervention, the mean of the WC increased to 57 words read correctly per minute. Moreover, the mean of the WC per minute increased more when student B received the RR+VR intervention. The mean was 69 words read correctly per minute during the treatment phase. Results indicated that both the RR and RR+VR interventions were effective in increasing the student's correct reading words per minute, with a slight increasing trend for both, though slightly higher for the RR + VP intervention. Additionally, as shown in Figure 2, results show that both the RR and RR+VR interventions immediately increased the student's reading fluency after comparing the last two data sessions in baseline and the first data session during the treatment phase. Results also indicated that there were no overlapping data points (PND = 100%) between the baseline phase and the treatment phase.

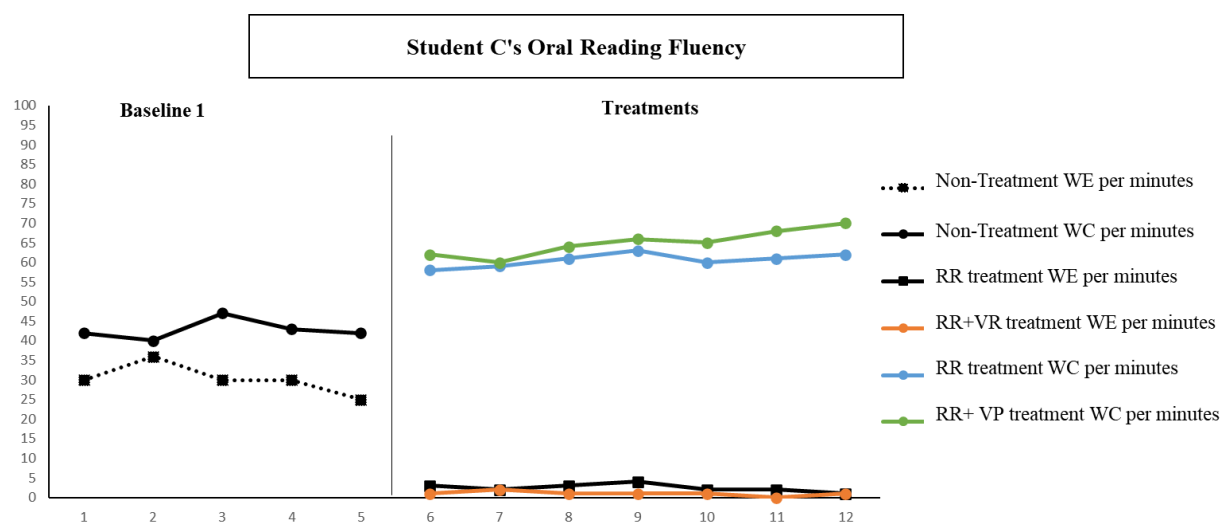
Furthermore, Student B decreased the number of word errors (WE) per minute in his reading word count during intervention. As shown in Figure 2, the mean WE per minute was 24 words that were not read correctly during Baseline. However, after implementing the RR intervention, the mean WE per minute decreased to 7 words that were not read correctly. Also, the mean WE per minute decreased even more when Student B received RR+VR interventions. The mean was one word per minute that was not read correctly during the treatment phase. Results indicate that both RR and RR+VR interventions were effective in decreasing reading word errors per minute. In addition, as shown in Figure 2, results show that both RR and RR+VR had an immediate effect on decreasing the student's reading errors, comparing the last data

sessions in baseline and the first data sessions during the treatment phase. Results also indicate that there was no overlapping data (PND = 100%) between the baseline phase and the treatment phase.



Student C. Figure 3 shows the results of the RR and RR +VR interventions in improving the student's reading fluency. Student C increased the number of words he reads correctly and decreased his number of errors per minute during the intervention. As shown in Figure 3, the mean of his WC per minute was 43 words read correctly. However, after implementation of the RR intervention, the mean of the WC increased to 61 words read correctly per minute. In addition, the mean of the WC per minute increased more, with an increasing trend for when Student C during the RR+VR intervention. The mean was 65 words read correctly per minute during the treatment phase. Results indicated that both the RR and RR+VR interventions were effective in increasing the student's correct reading words per minute. Moreover, as shown in Figure 3, results indicate that both the RR and RR+VR interventions immediately increased the student's reading fluency after comparing the last two data sessions in baseline and the first data session during the treatment phase. Results also indicate that there was no overlapping data (PND = 100%) between the baseline phase and the treatment phase.

Furthermore, Student C decreased the number of errors (WE) per minute in his reading word count during intervention. As shown in Figure 3, the mean WE per minute was 30 words that were not read correctly. However, after implementing the RR intervention, the mean WE per minute decreased to 2 words that were not read correctly. Moreover, the mean WE per minute decreased more when Student C received RR+VR interventions. The mean was one word per minute that was not read correctly during the treatment phase. Results indicated that both the RR and RR+VR interventions were effective in decreasing reading word errors per minute. In addition, as shown in Figure 3, results showed that both RR and RR+VR had an immediate effect on decreasing the student's reading errors, comparing the last data sessions in baseline and the first data sessions during the treatment phase. Results also indicated that there was no overlapping data (PND = 100%) between the baseline phase and the treatment phase.



Student D. Figure 4 shows the results of RR and RR +VR interventions in improving the student's reading fluency. Student D increased the number of words he reads correctly and decreased his number of errors per minute during the intervention. As shown in Figure 4, the mean of his WC per minute was 45 words read correctly. However, after implementation of the

RR intervention, the mean of the WC increased to 61 words read correctly per minute. Moreover, the mean of the WC per minute increased more, with an increasing trend, when student D received the RR+VP. The mean was 68 words read correctly per minute during the treatment phase. Results indicated that both the RR and RR+VP interventions were effective in increasing the student's correct reading words per minute. Moreover, as shown in Figure 4, results show that both RR and RR+VP immediately increased the student's reading fluency after comparing the last two data sessions in baseline and the first data session during the treatment phase. Results also indicated that there was no overlapping data (PND = 100%) between the baseline phase and the treatment phase.

Moreover, Student D decreased the number of errors (WE) per minute in his reading word count during intervention. As shown in Figure 4, the mean WE per minute was 35 words that were not read correctly. However, after implementing the RR intervention, the mean WE per minute decreased to 3 words that were not read correctly. Moreover, the mean WE per minute decreased more when student A received RR+VP interventions. The mean was one word per minute that was not read correctly during the treatment phase. Results indicated that both RR and RR+VP interventions were effective in decreasing reading word errors per minute. In addition, as shown in Figure 4, results showed that both RR and RR+VP had an immediate effect on decreasing the student's reading errors, comparing the last data sessions in baseline and the first data sessions during the treatment phase. Results also indicated that there were no overlapping data points (PND = 100%) between the baseline phase and the treatment phase.

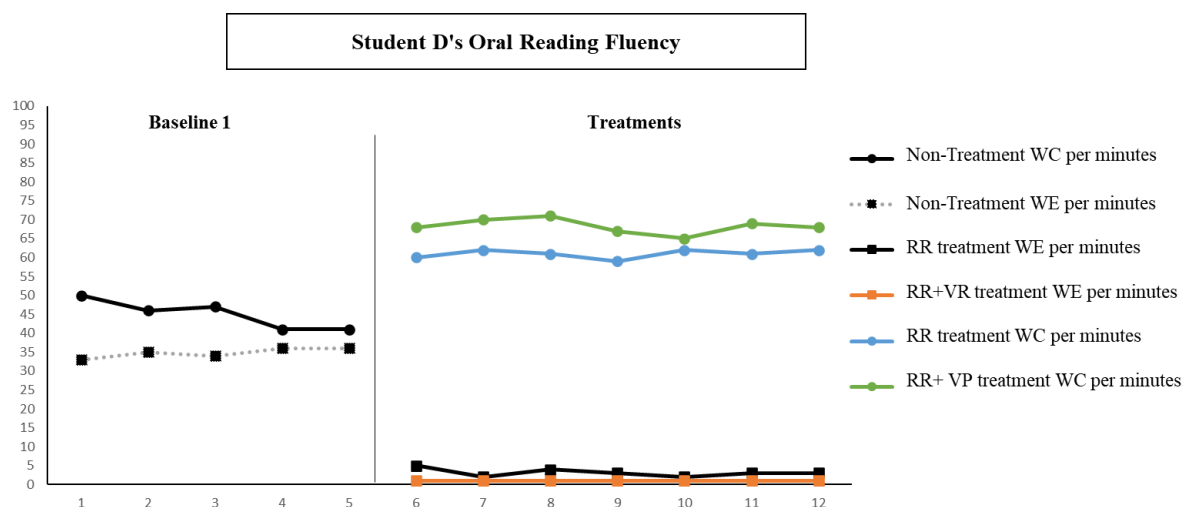


Table 1 provides statistical data on the effectiveness of RR and RR+VR interventions on the increased correct reading of words for the four students who participated in this study. Results indicate that both the RR and RR+VR were effective and significant in increasing the number of words that were read correctly. After comparing the mean of words that were read correctly between the non-treatment phase and the RR treatment phase, results indicated a significant increase of 50% ($p < 0.001$) in the words read correctly for student A, 27% ($p < 0.001$) for student B, 41% ($p < 0.001$) for student C, and 36% ($p < 0.001$) for student D. However, results for the percent change indicated that RR+VR was more effective than the RR intervention only. Also, results showed a significant increase in words read correctly after implementation of the RR+VR intervention when compared with the non-treatment phase. In the results, the percent of change between the non-treatment phase and the RR +VR phase was 64% ($p < 0.001$) for student A, 53% ($p < 0.001$) for student B, 51% ($p < 0.001$) for student C, and 51% ($p < 0.001$) for student D.

Table 3.
Statistical Analysis of Words Read Correctly per Minute for the Four Students

DV	Student	Mean			Percent Change		PND		<i>P</i>	
		Non-treatment phase	RR treatment phase	RR + VP treatment phase	Non-treatment vs RR	Non-treatment vs RR+VP	Non-treatment vs RR	Non-treatment vs RR+VP	Non-treatment vs RR	Non-treatment vs RR+VP
Words Correct per Minute	A	44	66	72	50% increase	64% increase	100%	100%	0.001	0.001
	B	45	57	69	27% increase	53% increase	100%	100%	0.001	0.001
	C	43	61	65	41% increase	51% increase	100%	100%	0.001	0.001
	D	45	61	68	36% increase	51% increase	100%	100%	0.001	0.001

Note. RR = Repeated Reading; VP= Repeated Reading + Vocabulary Previewing

Table 2 provides statistical data on the effectiveness of RR and RR+VP interventions to increase the correct reading of words for the four students who participated in this study. Results indicate that both the RR and RR+VP were effective and significant in increasing the number of words that were read correctly. After comparing the mean of words that were read correctly between the non-treatment phase and the RR treatment phase, results show a significant increase in words read correctly of 94% ($p < 0.001$) for Student A, 71% ($p < 0.001$) for Student B, 93% ($p < 0.001$) for Student C, and 91% ($p < 0.001$) for Student D. However, results for the percent change indicate that RR+VP was more effective than implementing the RR intervention only. Results also indicate a significant increase in words read correctly after implementation of the RR+VP intervention when compared with the data in the non-treatment phase. In the results, the percent of change between the non-treatment phase and the RR +VP phase was 96% ($p < 0.001$) for Student A, 91% ($p < 0.001$) for Student B, 97% ($p < 0.001$) for Student C, and 97% ($p < 0.001$) for Student D.

Table 4.
Statistical Analysis e of Word errors per minute for the Four Students

DV	Student	Mean			Percent Change		PND		<i>P</i>	
		Non-treatment phase	RR treatment phase	RR + VP treatment phase	Non-treatment vs RR	Non-treatment vs RR+VR	Non-treatment vs RR	Non-treatment vs RR+VP	Non-treatment vs RR	Non-treatment vs RR+VP
Word error per minute	A	31	2	1	94% decrease	96% decrease	100%	100%	0.001	0.001
	B	24	7	2	71% decrease	91% decrease	100%	100%	0.001	0.001
	C	30	2	1	93% decrease	97% decrease	100%	100%	0.001	0.001
	D	35	3	1	91% decrease	97% decrease	100%	100%	0.001	0.001

Note. RR = Repeated Reading; VP= Vocabulary Previewing

Student A. In the baseline, the student was given 10 questions after finishing the reading of the passage for the first time. No intervention was provided. As shown in Figure 5, the mean for answering the 10 comprehension questions correctly was 6 for Student A. During the five RR intervention sessions, Student A was given 10 comprehension questions on the reading passage during in each of the five intervention sessions. Student A improved his reading comprehension by answering a mean of 9.8 question correctly (49/50 questions). After implementing the RR+VR intervention, the student also answered 49/50 comprehension questions (mean 9.8) questions in each of the five intervention sessions. The mean of answering the 10 questions was 9.8 in both the RR and RR+VP interventions. This improvement indicates that both interventions were effective in improving Student A's reading comprehension in both the RR intervention and RR+VR intervention.

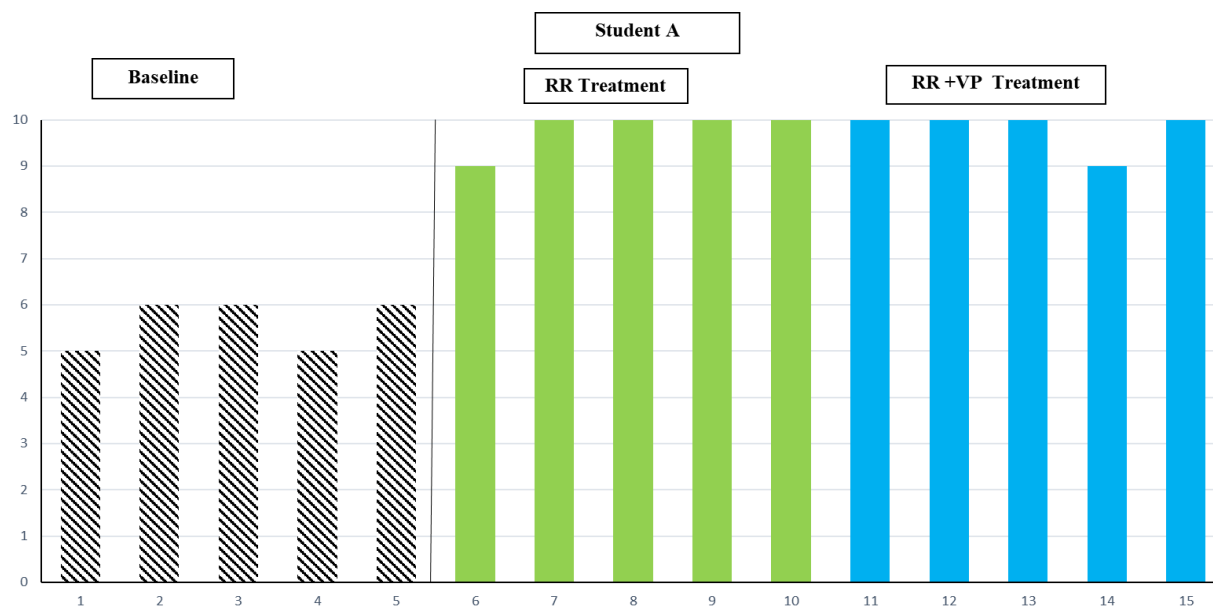


Figure 5. The Correct Answers of 10 comprehension Questions .

Student B. As shown in Figure 6, the mean of answering the 10 questions was 6 for Student B during baseline. In the baseline, the student was given 10 questions after finishing the first reading of the passage without receiving any intervention. However, after the five RR intervention sessions, the student improved his reading comprehension in the RR intervention with an overall mean of 9.8, answering 49/50 comprehension questions correctly. During the RR+VP intervention, students answered all the comprehension questions correctly during each intervention sessions. This improvement indicates that Student A's reading comprehension improved in both the RR intervention and the RR+VR intervention.

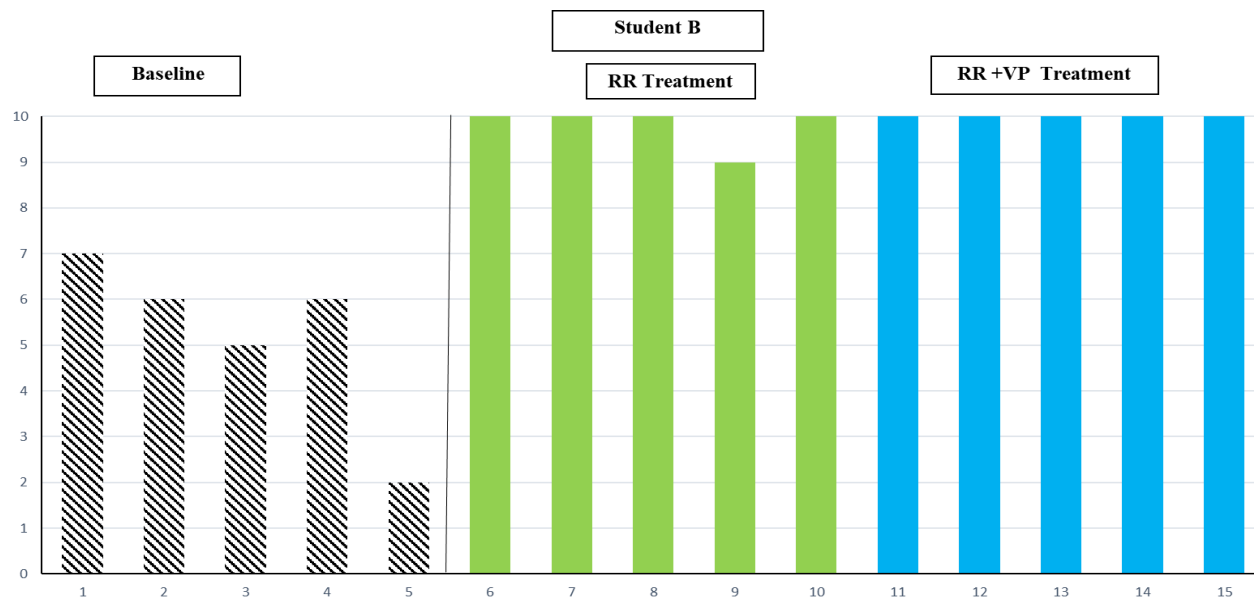


Figure 6. The Correct Answers of 10 comprehension Questions .

Student C. As shown in Figure 7, the mean of answering the 10 questions was 6 for Student C during baseline. During the baseline phase, the student was given 10 questions after finishing the first reading of the passage without receiving any intervention. However, after receiving the five RR intervention sessions, the student improved his reading comprehension with a mean of 9.6 questions answered correctly (48/50 questions). Also, in the five RR+VR intervention sessions, the student answered all 10 questions correctly during each session. This improvement indicates that both interventions were effective in improving the student's reading comprehension.

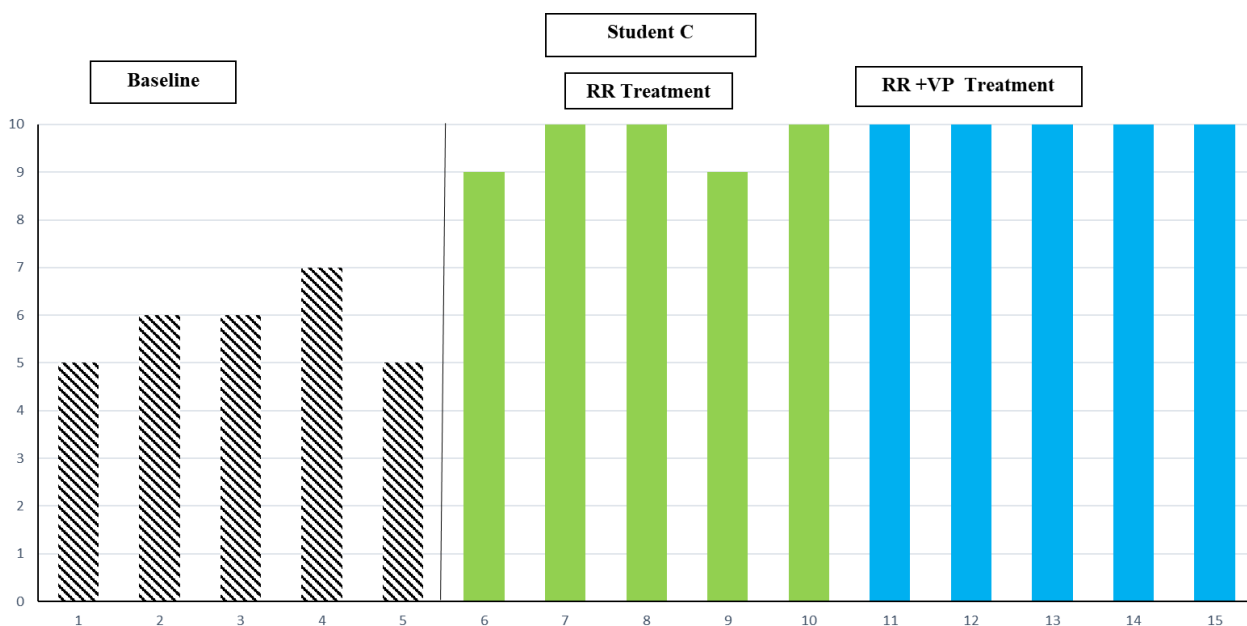


Figure 7. The Correct Answers of 10 comprehension Questions .

Student D. As shown in Figure 8 the mean of answering the 10 questions was 5 for Student D during baseline. In the phase, the student was given 10 questions after finishing the reading of the passage the first time without receiving any intervention. However, after he RR intervention was implemented, in the five intervention sessions, the student has improved his reading comprehension to a mean of 9.8. Also, in the five sessions of the RR+VR intervention, the student answered a mean of 9.8 questions correctly during each session. This improvement indicates that both interventions were effective in improving Student D's reading comprehension.

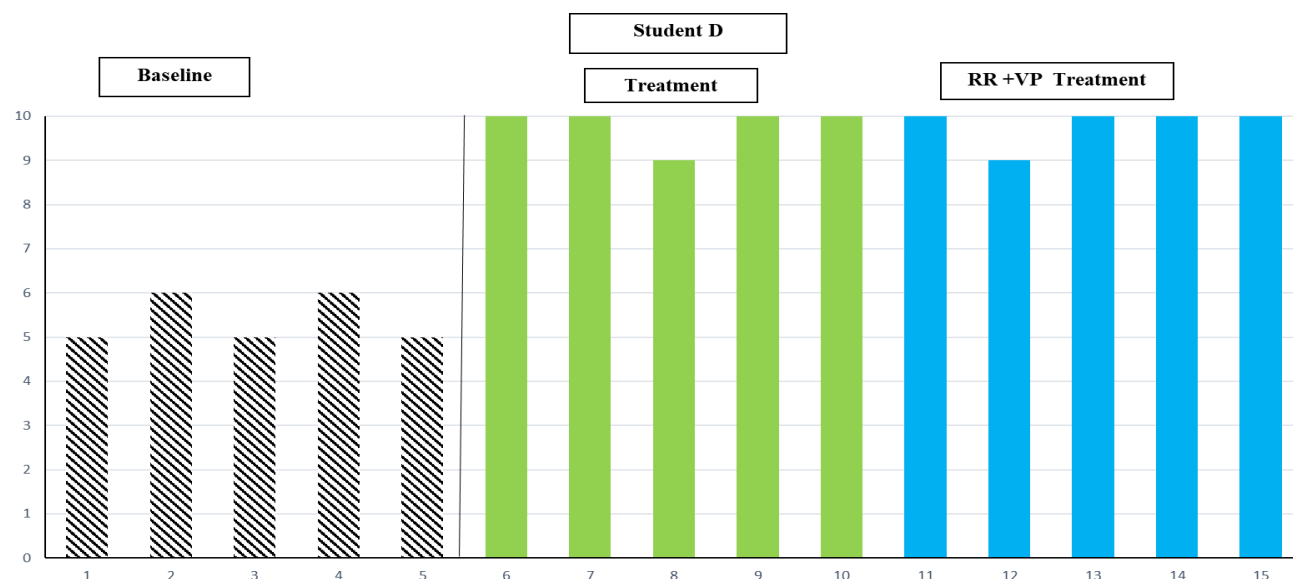


Figure 8. The Correct Answers of 10 comprehension Questions .

Treatment Fidelity

All teachers implemented both the RR and VP treatments' procedures. They implemented all seven steps of the RR intervention and eight RR + VP intervention steps correctly. The researcher measured all teachers by using the Procedural and Content Fidelity Checklist to assess the adherence of teacher implementation of the intervention steps for all four students. The results indicated that the teachers implemented successfully all the instructional procedures of both interventions. Table 3 shows the Procedural and Content Fidelity for the teachers with all four students. Results indicated that mean percentage of each teacher was 100% (range = 100% - 100%), thus demonstrating teacher adherence to implementing the intervention with fidelity.

Table 5.
Descriptive Intervention Adherence Repeated Reading and Previewing Vocabulary interventions' Procedures Steps for the Four Participants

Participants	Mean percentage and range (R) of intervention adherence	
	RR treatment	RR + PV
A	100%	100%
B	(100% - 100%)	(100% - 100%)
C	100%	100%
D	(100% - 100%)	(100% - 100%)

Note. RR = Repeated Reading; VP= Previewing Vocabulary

Social Validity

At the end of the study, each student and teacher were given a rating profile questionnaire with a Likert Scale questions and open-ended questions to allow each to provide more information.

Students. Each of the four students indicated positive responses. \ Their responses for all the fourteen statements were positive to using the intervention and they agreed with each of the following statements: 1) They felt that the repeated reading and vocabulary previewing interventions helped them read with greater accuracy, 2) reading a passage several times made them read a lot faster, 3) They really liked rereading the passages, 4) They positively responded that the repeated reading and the repeated reading + vocabulary previewing interventions were easy to learn, 5) When the teacher told them the words that they missed helped them read with fewer mistakes, 6) They felt they made progress by rereading passages and reviewing the words they missed, 7) They felt when they read faster, they could understand what they read better, 8) They really liked seeing the progress they made by looking at their progress on the graphs, 9)

They wanted to keep rereading passages, reviewing the words they missed, and seeing their progress on a graph, 10) They felt Repeated Reading helped them read faster than they could before, 11) They felt they could read better now than they could before, 12) When they read, they felt they could recognize more words than they used to, 13) They enjoyed reading more now than they used to, and 14) They wanted to continue RR or RR + VP interventions next year.

For the three open-ended questions, all students indicated that they liked both RR and RR + VP interventions because they helped them to read the passages many times and this helped them learn from their mistakes. They indicated that when they knew their mistakes, they could avoid doing the same mistakes again. When they read the passage more than two times, they felt they could understand the passages and increase their reading fluency.

Teachers. The two educators who participated in this study completed a rating profile questionnaire at the end of the study. The teachers' responses regarding the implementation of the intervention were acceptable. They indicated that the intervention was positive for improving the students' reading and comprehension and helped them read a given passage correctly. Also, the teachers indicated that the intervention helped the students decrease mistakes. Moreover, they liked the intervention and they indicated that they would like to use the intervention with their students. Generally, teachers indicated that the intervention was positive in improving students' reading without errors and increasing their comprehension. Refer to Table 4.

Table 6.	
Questions	Teachers' Responses
I feel that Repeated Reading and Previewing Vocabulary interventions helped me teach the students to read with greater accuracy.	All teachers agree with these statements.
Students could read the passages multiple times and did not digress in effort	All teachers agree with these statements.
I can continuously analyze the rereading of the passages.	All teachers agree with these statements.
The Repeated Reading and Previewing Vocabulary interventions were easy to teach.	One teacher does not agree with this statement
The students decreased in mistakes when I would correct them.	All teachers agree with these statements.
Students observed progress when misread words were pointed out.	All teachers agree with these statements.
When I removed my assistance from the student, their confidence levels decreased.	One teacher does not agree with this statement
I was motivated to continue this intervention due to the students' graphic progress.	One teacher does not agree with this statement
Students performed better after seeing the success they achieved with each session.	All teachers agree with these statements.
I can apply this intervention to a daily classroom session.	All teachers agree with these statements.

Chapter Five: Discussion

Many experimental studies have examined Repeated Reading (RR) interventions with various student populations in order to improve the reading skills (e.g., fluency and comprehension) of these students. Because students diagnosed with disabilities are at-risk for reading difficulties, researchers have begun focusing on interventions to improve the reading fluency and comprehension of students with disabilities. Also, other interventions to RR interventions have been implemented. For example, the effectiveness of a peer tutoring RR intervention was implemented to significantly improve students' reading skills (Vadasy & Sanders, 2008). Also, the RR intervention was found to be an effective intervention to enhance the reading capabilities of students with and without disabilities (Vadasy & Sanders, 2008).

Many studies that have examined RR interventions (e.g., Sukhram & Monda-Amaya, 2017; Therrien et al., 2012; Vadasy & Sanders, 2008) have suggested that struggling readers understand text better and read more fluently if they use the repeated reading intervention. However, the current study found that the RR intervention, in addition to a Previewing Vocabulary (VP) intervention, was a more effective intervention in improving students' reading skills.

This study was a systematic replication of the RR intervention, combined with a Vocabulary Previewing intervention. Students who participated in this study were students with learning disabilities or reading difficulties. This study further confirmed the effectiveness of the RR intervention plus VP intervention by improving all four participants' fluency and comprehension. Also, this study was conducted online because the COVID pandemic and one of the first study was effective study was effective study. However, other studies used questionnaire.

Prior to implementation of the intervention, all four students were making multiple mistakes, such as reading words incorrectly and skipping words in the passages when reading given passages. Also, they failed to answer the majority of comprehension questions after reading the assigned passages. However, results indicated that all four students improved their reading fluency and comprehension after participating in the Repeated Reading plus the Vocabulary Previewing intervention.

Generally, both the RR and the RR + VP interventions helped students increase reading words correctly and reduce reading word errors. Also, results showed that all four students improved their reading comprehension after receiving the interventions. When comparing their answers between the baseline and intervention phases, all students increased their correct answers to the given questions. It is clear that the RR and the RR plus VP interventions were effective in improving the reading fluency and comprehension of all four students.

Moreover, results indicated that the RR plus VP intervention was more effective than the implementation of only the RR intervention. Though the students' reading fluency and comprehension improved when they received the RR intervention, their reading skills improved more with the RR combined with the VP intervention. In addition, statistical measures (e.g., p-value, PND, and percent change) indicated that both interventions were effective in improving students' reading fluency and comprehension. However, the RR + VP was the more effective intervention than the RR because RR + VP was a more intensive intervention by the inclusion of a vocabulary component.

Thus, the results of this study indicate students with reading difficulties could benefit from the repeated reading and vocabulary previewing intervention that helped them learn new words when listening to their teachers reading to them. Also, the repeated reading helped them to

understand the meaning of new words, which could lead to improvement of their reading fluency and comprehension, especially with students with learning disabilities.

Many studies used the repeated reading interventions to improve students' reading fluency and increase the number of words read per minute. However, the present study found that the repeated reading and previewing vocabulary intervention was most effective in reducing the number of reading words errors. All students decreased the number of reading word errors by more than 90%. Also, this intervention helped students with learning disabilities understand a given passage and correctly answer comprehension questions after they finished reading. This intervention can be implemented by anyone who is close to students, such as parents, teachers, or siblings. The repeated reading and previewing vocabulary intervention can increase students' language inventory and help them pronounce words correctly.

Generally, the students' and their teachers' responses were positive regarding the social validity questionnaire. All teachers indicated that the repeated reading and vocabulary previewing intervention helped to improve the students' reading fluency and comprehension. Their responses were positive to the study's results. Results indicated the repeated reading and previewing vocabulary intervention was significant in improving the students' reading fluency and comprehension.

Also, all students indicated that the RR and RR+ PV intervention helped them read passages correctly. All students liked the intervention and reported that they want to use them in the future. Though the interventions helped the students improve their reading and understanding, the RR +VP intervention seemed to provide an extra benefit with the vocabulary previewing component. The students indicated that they would like to use the RR + VP

intervention in the future when they want to read new passages. In the following paragraphs, the study will discuss the limitations and implications for future research and education practice.

Limitations

This study has several limitations. First, the sample size of participants was small, which may prevent generalizing the results to all students with learning disabilities and reading difficulties. Future researchers may need to increase the number of participants to help generalize their results and consider the interventions as an evidence-based intervention. Second, the study used only two phases: baseline and intervention. Using only two phases may have limited the study results, in terms of examining the possible effectiveness of the interventions across persons or settings over time. Future researchers may want to include a maintenance phase and a generalization phase in their studies. It is important to examine how the repeated reading and previewing vocabulary intervention could support the student's ability to generalize what they have learned and continue to improve their reading by using these techniques.

Third, this study used a social validity questionnaire that was given to teachers and students at the end of the study; however, this study did not examine the students' parents' opinions about the implementation of the interventions. Future researchers should consider these limitations. It would be important to examine the opinions of the teacher, student, and their parents before and after implementation of the intervention. Fourth, the participants had one week to privately answer the questionnaire. Future researchers may need to conduct a physical interview with the participants to gather additional information about the study that may evolve in a one-on-one interview.

Implications for Future Research and Educational Practices

Students with disabilities, such as learning disabilities, may experience difficulties with reading fluency and comprehension. These students may already have reading fluency and text comprehension difficulties. Their success depends on educators and on their parents' ability to create a learning environment that helps them achieve a sufficient reading comprehension level. This study's results provide some implications for future research and educational practices that can help to improve students' reading skills.

Implications for Future Research. All learners with learning disabilities and/or reading difficulties may have difficulty reading new passages without using appropriate strategies. Strategies like RR + VP intervention can help these students improve their reading. Many studies were conducted physically and in school. However, this study was conducted online because the COVID pandemic and it is one of the first studies that was conducted online and was an effective study.

Future research may need to consider using What Works Clearinghouse Standards for Single Case Designs to ensure designing a research study that adheres to the rigor of a study without reservations. Following What Works Clearinghouse guidelines can help improve a study's design and can contribute to research rigor and add to the number of studies that could possibly add to the empirical literature of evidence-based research. Future research may also consider adding maintenance and generalization phases. This would provide needed data to assess the long-term effects of the intervention over time in other settings and across various types of reading material. In addition, researchers might consider increasing the number of intervention sessions; a higher dosage could perhaps increase maintenance and generalization effects. In addition, the inclusion of various statistical methods (e.g., PND, effect sizes) could serve to strengthen research outcomes.

These students' success depends on their parents' and the educators' ability to create a pleasant learning environment that helps them achieve a sufficient reading comprehension level. Future research may need to involve student's parents in the intervention to determine whether students' parents can play an important role in improving their child's reading skills. Students' parents are an important element in supporting their RR + VP strategies and could give parents the confidence they need to support and improve their children's reading skills in the areas of comprehension and fluency.

This study, which examined the effects of repeated reading and previewing vocabulary interventions on students' reading skills, had only a few numbers of participants. To consider the interventions as evidence-based interventions, this study should be replicated in which a minimum of five SCD research papers examine the intervention that meet evidence standards or meet evidence standards with reservations. The SCD studies must be conducted by at least three different research teams at three different geographical locations, and the combined number of experiments (i.e., single-case design examples) across the papers should be at least 20 (WWC, 2014). Future studies may also replicate this study with other students with various disabilities to help generalize the results of current research effects. Future research may need to examine whether both interventions might help improve students' academic skills in other areas, such as math.

Students with learning disabilities experience difficulties with reading fluency and comprehension. These students' success depends on their parents' and their educators' ability to create a supportive environment that helps the student achieve a sufficient reading comprehension level. The reviewed studies indicated that only two studies used repeated reading for students with learning disabilities who have reading disabilities. Future research should

examine repeated reading interventions with students with reading disabilities and how their needs should be addressed.

Although public schools have many students with disabilities who attend classes together, the lack of policy and attention for helping these students adapt and develop necessary skills, such as reading comprehension, remain unaddressed (Vadasy & Sanders, 2008). Examples derived from Vadasy and Sanders (2008) suggest that these students benefit from using peer tutoring during implementing repeated reading interventions. This method can help at-risk students improve their reading speed and pronunciation accuracy. Hence, further research that improves classroom interventions targeting reading comprehension skills for students with disabilities is necessary.

Future researchers should use long-term studies that examine a systemwide approach to addressing reading errors and text comprehension. Research outcomes can be shown while implementing interventions with students for an extended period of time so that there is sufficient data to demonstrate the effect of a given intervention and examine how an intervention benefits these students. Incorporating varied approaches, such as providing above-grade-level passages or working on various texts instead of focusing on only one paragraph might be beneficial. Developing interventions that use these methods might create better outcomes for students with reading difficulties.

Future researchers may use other strategies with repeated reading, such as combining repeated reading with a social story. This combination might be an alternative strategy for improving students' reading skills. Researchers can also study this aspect in more detail to determine whether the same benefit effects persist at higher reading levels, that is when the story vocabulary is more varied. In addition, they could investigate whether stories about different

topics might reduce or increase the strategy's effectiveness. The children could apply the benefits from one reading to another through a repeated reading intervention.

It is important to measure treatment fidelity to ensure the treatment's correct implementation and measure social validity to evaluate participants' perceptions about any intervention (Hawkins et al., 2011). There are many ways to examine the participants' perceptions, such as using questionnaires or interviews. However, researchers should examine participants' perceptions twice, once before the study begins and then at the end of the study. Also, the collaboration between teachers and researchers is important to complete any study correctly and increase teachers' willingness to implement the study with their students.

Finally, future researchers should examine teachers' skills before implementing any study. Some teachers may have negative opinions about students with reading difficulties or learning disabilities. This negative thinking could be one part of the many problems that can negatively affect students. It is important that researchers know the skills of the teachers who will participate in their study before doing their study. Then, researchers can use this information when planning intervention strategies for teachers during a study to become more effective teachers.

Implication for Educational Practice. Teachers need to know effective strategies for improving their students' reading. The Repeated Reading and Previewing Vocabulary intervention provides a viable strategy to help improve students' reading proficiency and comprehension. Teachers can use these interventions in two steps with students with learning disabilities and students with reading difficulties. In the first step, teachers can use the repeated reading intervention with students who have reading difficulties to improve their reading fluency and comprehension. If the students still exhibit reading difficulties after receiving RR, teachers

can use the repeated reading plus previewing vocabulary intervention as a second tier. The second step can be an intensive intervention to improve students' reading fluency and comprehension skills

Schools may consider using repeated reading and previewing vocabulary intervention for any student who is not reading at their grade level in any class that requires students to read and understand texts in any subject. Schools can use both interventions as a technique that all teachers can implement to improve their students' reading skills. Moreover, teachers can use this technique to improve other academic skills. Implementing these interventions may lead to improving all students' performance and grades.

Achieving grade-specific reading comprehension and fluency is an essential skill for school children, but many students experience difficulties with this task because of disorders, disabilities, or because they need more time and practice to master reading. Educators can use the intervention in many ways to improve their students' academic reading skills. First, they can use peers to implement the intervention, which can lead to improved reading and also social skills. Second, they can use students' parents as interventionists who can use this strategy with their children at home. Finally, any teacher can implement this intervention and use it with other strategies in the classroom. Children with reading difficulties require a specific approach that accounts for their difficulties and repeated reading interventions should be tailored to individual students to help them meet their educational goals.

Conclusion

Researchers, such as Escarpio and Barbetta (2016), generally suggest choosing a small passage, explaining difficult words, reading the text aloud, and allowing the student to read the text several times as the primary RR protocol. This model is based on studies that have suggested children retain more vocabulary words if they repeat them several times (Rohlfing et al., 2018). Helping students improve reading skills is a complicated task that requires helping them understand the reading of a passage and grasp the main ideas of what they have read. These factors can affect fluency, the number of errors, and comprehension. In addition, students must encode less information with each rereading, which facilitates the general comprehension of the text.

Overall, the reviewed RR studies indicate that this method improves students' reading. Also, the results of this study indicated that the RR intervention helped improved all the participants' reading fluency and comprehension. The specifics of RR's intervention permit it to incorporate error correction or corrective feedback from teachers or peers for at-risk students while implementing RR, which improves students' text comprehension. Finally, RR helps students with disabilities, such as SLIs, because the studies indicate that it positively impacts fluency and comprehension. Educators can choose various RR designs and approaches depending on students' specific situations and needs.

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Appendix A Social Validity Forms

Appendix A

Procedural Integrity Checklist

Independent Observer _____

Date _____

Instructions: Please check “yes” or “no” after each statement below as it appropriately represents each of your observations of the participant(s) and researcher. Divide the number of steps completed by the number of steps to calculate the percentage of steps implemented accurately procedural reliability.

INTERVENTION SEQUENCE		
Repeated Read	Yes	No
1. Students are allowed to choose the passage.		
2. Instructions are provided to student(s) for cold read.		
3. Each student reads for one minute independently while researcher follows along with her copy.		
4. Researcher crosses errors with a single slash (/) sign for each word the student misses or miscues and records all missed words.		
5. No feedback is provided on missed words.		
6. Researcher calculates WCPM and shares score with each student.		
7. Student graphs individual scores on fluency chart.		
RR+VP Reading Session		
1. Instructions are provided to student(s) for repeated reading and previewing vocabulary.		
2. Using the passage chosen for the cold read, students perform the read three times for one minute, with each student reading on one minute.		
3. Researcher followed along on researcher’s copy during each reading.		
4. Researcher crosses errors with a single slash (/) sign for each word the student misses or miscues and records all missed words.		
5. No feedback is provided for mispronunciations made during the readings.		
6. Researcher calculates WCPM for final duet reading and shares with each student, but scores not graphed.		
7. Missed words are reviewed.		
8. After third reading, each student reads the passage in its entirety.		
<u>% Procedural reliability for session.</u>		



Adopted from Dr. William Bursuck and Dr. Angela Gatling Jones

Student Social Validity Questionnaire

Student:

Date:

Listed below are statements about Repeated Reading and Previewing Vocabulary interventions. I am interested in your opinion on each. Please read each carefully, then circle the letters that show how much you agree or disagree with each statement. Use the following scale:

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
				

Example: **I think that rap music is the best type of music.**

If you are *really positive* that rap music is *not* the best type of music, circle *Strongly Disagree*.



If you *think* that rap music is not all that great, circle *disagree*.

If you *can't decide* whether or not it is the best, circle *undecided*.



If you *think* that rap music is good, but maybe not great, circle *agree*.

If you are *really positive* that rap music is the best, circle *strongly agree*.



1. **I feel that Repeated Reading and Previewing Vocabulary interventions helped me read with greater accuracy.**

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
				



2. **Reading a passage several times helped me read a lot faster.**

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
				



3. **I really liked rereading the passages.**

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
				



4. **The Repeated Reading and Previewing Vocabulary interventions were easy to learn**

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
				



5. Having the teacher tell me the words I missed helped me read with fewer mistakes.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
				



6. I made progress by rereading passages and reviewing the words I missed.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
				



7. When I read faster, I can understand what I read better.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
				



8. I really liked seeing the progress I was making on the graph.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
				



9. I would like to keep rereading passages, reviewing the words I missed, and seeing my progress on a graph.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
				



10. Repeated Reading has helped me read faster than I could before.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
				



11. I read better now than I could before.

2	3	4	5
Strongly Disagree	Disagree	Undecided	Strongly Agree
			



13. When I read, I recognize more words than I used to.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
				

14. I enjoyed reading more now than I used to.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
				

15. I would like to continue Repeated Reading and Previewing Vocabulary interventions next year,

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
				

16. What do you like best about Repeated Reading and Previewing Vocabulary interventions? Why?

17. What did you not like about Repeated Reading and Previewing Vocabulary interventions? Why?

18. How has your ability to read words more fluently affected your ability to understand the passages you read?

Adopted from Dr. William Bursuck

Teacher Social Validity Questionnaire

Teacher:

Date:

Listed below are statements about Repeated Reading and Previewing Vocabulary interventions. I am interested in your opinion on each. Please read each carefully, then circle the letters that show how much you agree or disagree with each statement. Use the following scale:

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

Example: **I think that rap music is the best type of music.**

If you are *really positive* that rap music is *not* the best type of music, circle *Strongly Disagree*.

If you *think* that rap music is not all that great, circle *disagree*.

If you *can't decide* whether or not it is the best, circle *undecided*.

If you *think* that rap music is good, but maybe not great, circle *agree*.

If you are *really positive* that rap music is the best, circle *strongly agree*.

1. I feel that Repeated Reading and Previewing Vocabulary interventions helped me teach the students to read with greater accuracy.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

2. Students could read the passages multiple times and did not digress in effort.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

3. I can continuously analyze the rereading of the passages.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

4. The Repeated Reading and Previewing Vocabulary interventions were easy to t

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

5. The students decreased in mistakes when I would correct them.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

6. Students observed progress when misread words were pointed out.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

7. When I removed my assistance from the student, their confidence levels decreased.

1	2	3	4	5
---	---	---	---	---

Strongly Disagree Disagree Undecided Agree Strongly Agree

8. I was motivated to continue this intervention due to the students' graphic progress.

1 2 3 4 5
Strongly Disagree Disagree Undecided Agree Strongly Agree

9. Students performed better after seeing the success they achieved with each session.

1 2 3 4 5
Strongly Disagree Disagree Undecided Agree Strongly Agree

10. I can apply this intervention to a daily classroom session.

1 2 3 4 5
Strongly Disagree Disagree Undecided Agree Strongly Agree

Adopted from Dr. William Bursuck and Dr. Angela Gatling Jones

Appendix B, C, D, F, IRB Approval Letters and Informed Consent Forms



OFFICE OF THE VICE PRESIDENT FOR RESEARCH
Physical Address

4111 Monarch Way, Suite 203

Norfolk, Virginia 23508

Mailing Address

Office of Research

1 Old Dominion University

Norfolk, Virginia 23529

Phone (757) 683-3460

Fax (757) 683-5902

DATE: December 2, 2020

TO: Peggy Hester, PH.D

FROM: Old Dominion University Institutional Review Board

PROJECT TITLE: [1655072-3] Using Repeated Reading and Repeated Reading Paired with Vocabulary Previewing Interventions with Elementary- Aged Struggling Readers to Improve Fluency and Comprehension

REFERENCE #: 20-174

SUBMISSION TYPE: Amendment/Modification

ACTION: APPROVED

APPROVAL DATE: December 2, 2020

NEXT REPORT DUE: December 1, 2021

REVIEW TYPE: Expedited Review

REVIEW CATEGORY: Expedited review category # 7

Thank you for your submission of Amendment/Modification materials for this project. The Old Dominion University Institutional Review Board has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulations.

This project has been determined to be a MINIMAL RISK project. Based on the risks, this project does not require continuing review. You will receive an annual check in reminder. Please

complete the annual check in form and submit it for administrative approval by your next report due date of December 1, 2021.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require that each participant receives a copy of the consent document.

Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please use the appropriate revision forms for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others (UPIRSOs) and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. Please use the appropriate reporting forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

Please note that all research records must be retained for a minimum of three years after the completion of the project.

If you have any questions, please contact Danielle Faulkner at (757) 683-4636 or dcfaulkn@odu.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been issued in accordance with all applicable regulations, and a copy is retained within Old Dominion University Institutional Review Board's records.

Appendix B
LETTER OF PARENT INTEREST
OLD DOMINION UNIVERSITY

Dear Parent or Guardian,

This letter is to see if you might be interested in having your child participate in a study at your child's school that researchers from Old Dominion University are conducting with children who have difficulty reading and understanding what they read. This study is for children who read at least one year lower than their grade level.

A reading program named "Repeated Reading" has been used to help students who have difficulty with reading and understanding what they are reading. Other researchers have indicated that another component called Vocabulary Previewing, where the student reviews the vocabulary used in the reading, may help them to better understand what they are reading. In this study your child will use both of these reading programs and we will see whether one strategy works better than the other and if your child feels that one is more useful than the other. Though there is no guarantee that either reading program will increase your child's reading or comprehension skills, it may be helpful in improving aspects of a child's reading ability. Because of Covid-19, this training will be on-line. Your child will work at home and the teacher, a graduate student from Old Dominion University, will be at another site and the researcher at another. These sessions will occur at a time that is convenient to you and your child.

There is the likely risk that your child's name or other information could accidentally be revealed; however, we are taking all precautions to prevent that from happening. Throughout the study we will not use any real names and all students will have a code. All students' information and data will be saved in a locked file or on a password protected computer in a locked ODU office. There are no direct benefits to participants; however, based on past studies, the intervention might improve aspects of your child's reading skills, though there is no guarantee that this is the case.

The researchers are unable to give you any payment for your child's participating in this study. However, at the completion of the research, you will be given a \$20 gift certificate for your child.

You have a right to say Yes or No as to whether you might like for your child to participate in the study. Even if you say Yes now and then decide to withdraw your child from the study, there will be no negative consequences of any kind.

Detailed information is provided on the Parent Consent Form and the Child Assent Form. If you are interested and want to find out more about the study, complete the interest form that is attached and the reading teacher at your child's school will contact you regarding a time for you to talk with the reading teacher and the researchers to find out more about the study and answer any questions you may have.

Sincerely,

Peggy Hester, PhD
 Professor of Special Education
 Child Study Center Room 125
 Child Study Center Room 111A
 Norfolk, VA 23529
 phester@odu.edu

Khaled Alotaibi
 Doctoral student
 Norfolk VA 32529
 kalot001@odu.edu
 570-359-7223

PARENT INTEREST FORM

Please indicate Yes or NO as to whether you are interested in learning more about this reading program.

_____ Yes, I am interested in learning more about this research study and would like to have a meeting with the reading teacher and the researchers to learn more about it and be able to have them answer any questions I may have.

_____ No, I am not interested at this time.

Parent's email or phone number

Parent Signature

Date

APPENDIX C

PARENT INFORMED CONSENT DOCUMENT

OLD DOMINION UNIVERSITY

PROJECT TITLE:

Using Repeated Reading and Repeated Reading Plus Vocabulary Previewing Interventions with Elementary- Aged Struggling Readers to Improve Fluency and Comprehension

INTRODUCTION

The purposes of this form are to give you information that may affect your decision whether to say YES or NO to allow your child to participate in this research, and to record the consent of those who say YES.

RESEARCHERS

The Principal Investigator: Dr. Peggy Hester, PhD. Darden College of Education Communication Disorders and Special Education; phester@odu.edu

Khaled Alotaibi, M.S. Ed. Darden College of Education Communication Disorders and Special Education; kalot001@odu.edu

DESCRIPTION OF RESEARCH STUDY

A reading program named "Repeated Reading" has been used to help students who have difficulty with reading and understanding what they are reading. Other researchers have indicated that if another component called Vocabulary Previewing, where the student reviews the vocabulary used in the reading, along with the Repeated Reading program, it may help them to better understand what they are reading. In this study, your child will use both of these reading interventions and we will see whether one strategy works better than the other. Also, your child will be given an opportunity to let us know which strategy helped the most and if they felt either was useful. If you decide to allow your child to participate, then he/she will join a study involving research of the two repeated reading interventions. Your child will work during a virtual learning session via Zoom with a teacher who will be an Old Dominion University doctoral student. Your child will have three opportunities a week to engage in a reading session with the teacher while the researcher views the sessions on-line at the same time. Overall, the study will take approximately eight weeks, resulting in a total of 8 hours. The repeated reading sessions will be videotaped and reviewed later in order to identify skills and strategies students use during the reading sessions and to make sure we record the information correctly and that the teacher is using the proper procedures. If you say YES, then your child's participation will last for approximately 24 sessions and will include three 20-minute reading sessions a week, as well as one final 5 – 10-minute session during which your child will complete a short survey about how he liked the reading program and whether he or she felt the reading intervention helped him or her. You or someone in your household will be asked to help the child to connect to the zoom link for each session.

EXCLUSIONARY CRITERIA

Before your child can participate, your child will be given a reading assessment. If your child's score on the reading exam is one year or more below his or her grade level, he or she is eligible to be included in the study; if it is higher, your child will not be eligible to participate in this study.

RISKS AND BENEFITS

RISKS: There is a risk of release of confidential information, such as your child's name, and that your child may experience increased boredom/frustration. We are taking precautions to maintain confidentiality, such as not using any real names and assigning all students a code. All study information and data will be saved in a locked file or on a password protected computer in a locked office at ODU. Also, if your child indicates boredom or frustration, the intervention for that day will be discontinued immediately. There are no direct benefits from participating in this study; however, the intervention might improve aspects of your child's reading skills, though we cannot guarantee that you child will benefit from participating in this study.

COSTS AND PAYMENTS

The researcher is unable to give you any payment for your child's participation in this study. However, at the completion of the research, you will be given a \$20 gift certificate for your child.

NEW INFORMATION

If the researchers find new information during this study that would reasonably change your decision about participating, then they will give it to you.

CONFIDENTIALITY

The researchers will take steps to keep private information, such as your child's name or reading score, confidential. The results of this study may be used in reports, presentations, and publications. However, the researcher will not identify you or your child. Of course, your records may be subpoenaed by court order or inspected by government bodies with oversight authority. Steps that will be taken to minimize this risk are: (1) All data sheets and videos will be saved in a locked cabinet in the Child Study Center at ODU Rm #124. (2) All video recordings will be watched on ODU computers in the Child Study Center. (3) All videos and data sheets will be destroyed after the completion of the study.

WITHDRAWAL PRIVILEGE

It is OK for you to say NO. Even if you say YES now, you are free to say NO later, and walk away or withdraw from the study -- at any time. Your decision will not affect your relationship with Old Dominion University or Chesapeake Bay Academy, or otherwise cause a loss of benefits to which you might otherwise be entitled.

COMPENSATION FOR ILLNESS AND INJURY

If you say YES, then your consent in this document does not waive any of your legal rights. However, in the event of harm, or injury arising from this study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation for such injury. In the event that you suffer injury as a result of participation in any research project, you may contact Dr. Tancy Vandecar-Burdin, the current IRB Chair, at 757-683-3802 (email address: tvandeca@odu.edu) who will be glad to review the matter with you or you may contact the Old Dominion University Office of Research at 757-683-3460.

VOLUNTARY CONSENT

By signing this form, you are saying several things. You are saying that you have read this form or have had it read to you, that you are satisfied that you understand this form, the research study, and its risks and benefits. The researchers should have answered any questions you may have had about the research. If you have any questions later on, then the researchers should be able to answer them: Dr. Peggy Hester (email address: phester@odu.edu) and Khaled Alotaibi (email address: kalot001@odu.edu).

If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should call Dr. Tancy Vandecar-Burdin, the current IRB chair, at 757-683-3802, or the Old Dominion University Office of Research, at 757-683-3460. Dr. Vandecar-Burdin's email address is tvandeca@odu.edu.

And importantly, by signing below, you are telling the researcher YES, that you agree to participate in this study. The researcher should give you a copy of this form for your records.

Parent / Legally Authorized Representative's Printed Name & Signature	Date
--	-------------

INVESTIGATOR'S STATEMENT

I certify that I have explained to this subject the nature and purpose of this research, including benefits, risks, costs, and any experimental procedures. I have described the rights and protections afforded to human subjects and have done nothing to pressure, coerce, or falsely entice this subject into participating. I am aware of my obligations under state and federal laws and promise compliance. I have answered the subject's questions and have encouraged him/her to ask additional questions at any time during the course of this study. I have witnessed the above signature(s) on this consent form.

Investigator's Printed Name & Signature	Date
--	-------------

Subject's Printed Name	Date
-------------------------------	-------------

Appendix D
INFORMED CONSENT
PHOTO/VIDEO MATERIALS

STUDY TITLE: Using Repeated Reading and Repeated Reading Paired with Vocabulary Previewing Interventions with Elementary- Aged Struggling Readers to Improve Fluency and Comprehension

DESCRIPTION

The researchers will take photographs or videotapes of each or your on-line interactions with parents and students participating in the intervention in order to code data, determine reliability of coded data, and to illustrate the research in teaching, presentations, and/or or publications.

CONFIDENTIALITY

You will not be identified by name in any use of the photographs or videotapes. All photographs or videotapes will be destroyed within one-year after the study analysis ends.

VOLUNTARY CONSENT

By signing below you are granting to the researchers the right to use your likeness, image, appearance and performance - whether recorded on or transferred to videotape, film, slides, photographs for presenting or publishing this research. No use of photos or video images will be made other than for professional presentations or publications. The researchers are unable to provide any monetary compensation for use of these materials. You can withdraw your voluntary consent at any time.

If you have any questions, please call Khaled Alotaibi at 570-359-7223 or email Dr. Peggy Hester at phester@odu.edu. If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should call Dr. Tancy Vandecar-Burdin, the current IRB chair, at 757-683-3802, or the Old Dominion University Office of Research, at 757-683-3460. Dr. Vandecar-Burdin's email address is tvandeca@odu.edu

 Printed Name

 Signature

 Date

 Signature of Investigator

 Date

Appendix E
TRAINER INFORMED CONSENT
PHOTO/VIDEO MATERIALS

STUDY TITLE: Using Repeated Reading and Repeated Reading Paired with Vocabulary Previewing Interventions with Elementary- Aged Struggling Readers to Improve Fluency and Comprehension

DESCRIPTION

The researchers would like to take photographs or videotapes of your child participating in the intervention in order to illustrate the research in teaching, presentations, and/or or publications.

CONFIDENTIALITY

Your child will not be identified by name in any use of the photographs or videotapes. Even if you agree to be in the study, no photographs or videotapes will be taken of you unless you specifically agree to this consent. All photographs or videotapes will be destroyed within one-year after the study analysis ends.

VOLUNTARY CONSENT

By signing below you are granting to the researchers the right to use your child's likeness, image, appearance and performance - whether recorded on or transferred to videotape, film, slides, photographs for presenting or publishing this research. No use of photos or video images will be made other than for professional presentations or publications. The researchers are unable to provide any monetary compensation for use of these materials. You can withdraw your voluntary consent at any time.

If you have any questions please call Khaled Alotaibi at 570-359-7223 or Dr. Peggy Hester at 757--683-4876. If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should call Dr. Tancy Vandecar-Burdin, the current IRB chair, at 757-683-3802, or the Old Dominion University Office of Research, at 757-683-3460. Dr. Vandecar-Burdin's email address is tvandeca@odu.edu

 Printed Name of Child

 Printed Name of Parent(s) or Legal Guardian

 Signature of Parent(s) or Legal Guardian

 Date

 Signature of Investigator

 Date

Research Participants Needed
**“Using Repeated Reading and Previewing Vocabulary
Interventions with Elementary- Aged
Struggling Readers to Improve Fluency and
Comprehension”**

We are conducting a study to help elementary students to increase their reading fluency and comprehension skills.

To conduct this study, we need the voluntary parent consent for the participation of students ages 8-11 who have been diagnosed with a learning disability or who have difficulty reading. If you are interested in having your child participate in this study, please contact Dr. Peggy Hester, (email: phester@odu.edu) or Khaled Alotaibi (email: kalot001@odu.edu). These sessions will be conducted on-line three times a week.

Appendix F Summary of the Reviewed Studies

Summary of the Reviewed Studies

Authors	N	Setting	Level/ Grade	Population	Effect	Design
Escarpio and Barbetta (2016)	N = 4 (M = 4, F = 0)	Middle school in a special classroom	6 th grade	Students with EBD	- Positive for all students that results showed that with repeated readings, participants showed performance in reading fluency, correct answers, and errors per minute to literal comprehension questions.	An alternating treatments design
Hawkins et al. (2011)	N = 6 (M = 4, F = 2)	High school	10 th grades and 11 th grade	LD	- Positive for all students in three conditions were effective for all participants.	Alternating treatments design
Hawkins et al. (2015)	N = 4 (M = 4, F = 0)	Elementary school	4 th grade	Students at risk in reading	Positive for all students were increase after RR and LWR intervention.	Alternating treatments design
Hua et al. (2012)	N= 3 (M = 3, F = 0)	Midwestern university	First grade, third grade, and 6 th grade	Autism and intellectual disability	Positive: The results showed that RAAC intervention may be effective to improve fluency and comprehension for young adults with cognitive disabilities.	A multiple baseline across subject design
Huemer et al. (2010)	N = 25	Four elementary schools	4 th to 6 th grade	At risk in reading (poor reading skills)	- Positive: Results proved effective in improving in speed of reading and fluency of pronunciation. However, there is little impact on improving the fluency of reading words with syllables that were not incorporated in the student learning program.	Pre-Post test
Korat (2009)	N = 214	pre-kindergarten and Kindergarten	P-K	At risk in reading	- Positive: The results suggest that the CDs improve phonological awareness for both age groups, and this method can be used to help improve early childhood literacy.	Pre-Post test
Rohlfing et al., 2018	N = 16 (M = 8, F = 8)	Children were recruited from a large city in Western Germany	Pre-kindergarten	- At risk in reading - SLI	- Positive; RR is a method that has the potential for significantly improving the children's reading comprehension.	Pre-Post test
Savaiano and Hatton (2013)	N = 3 (M = 2, F = 1)	Elementary school	Third grade to 6 th grade	Students with Visual Impairments	Negative: Based on the results of this study, repeated reading appears to be an effective practice for some students with visual impairments.	Single-subject, changing-criterion design
Sukhram and Monda-Amaya (2017)	N= 60	Five middle schools.	7 th grade	At risk in reading	- Positive; Results showed that both interventions improved fluency and comprehension.	Pre-Post test
Therrien and Hughes (2008)	N = 32 (M = 13, F = 19)	Public school district in central Pennsylvania	4 th grade to 6 th grade	students with LD and at risk for reading failure	- Positive for all students with results that showed (a) repeated reading improves students' fluency and (b) when reading instructional-level material, repeated reading is more effective for comprehension than question generation.	Single factor design
Therrien et al. (2012)	N= 30 (M = 30, F = 0)	Elementary school	Third to 5 th grade	At risk in reading	Positive: RAAC is more effective for students' fluency.	Pre-Post test
Vadasy and Sanders (2008)	N = 70 (M = 70, F = 0)	12 public elementary schools	4 th and 5 th grade students	At risk in reading	- - Positive: Quick Reads program improved students' vocabulary, word comprehension, and passage comprehension.	Pre-Post test
Webb and Chang (2012)	N = 82	High school	10 th grade	At risk in reading	- Positive; The results showed that both types of repeated reading contributed to vocabulary learning.	Pre-Post test

Note. EBD = Emotional behavioral disorder, F= Female, LD = Learning disabilities, LWR = Listening-While-Reading, M=Male, N= Participants, RAAC= Reread-Adapt and Answer-Comprehend, RR = Repeated reading, SLI = Specific language impairment.

Example of reading passages and questions

2

BEQ Bugs

“"Wow," said Jack, picking up the book. "The ninja book was open yesterday. Now this one. Who opened them?"

Jack closed the" book and looked at the cover

It showed a picture of a green forest. The trees were very tall and close together.

On the cover were the words The Rain Forest.

"Oh, wow," said Jack. "Oh, no," said Annie.” (Osborne, 2010, P.7).

Questions

1. The title of the chapter is:
 - a. Sick Slugs
 - b. Tree Frogs
 - c. Big Bugs
2. The title of the book on the table is:
 - a. The Rainy Day
 - b. The Snowy Day
 - c. The Rain Forest
3. Annie is scared of:
 - a. Mice
 - b. Ghosts
 - c. Bugs
4. Who is Annie and Jack trying to help?
 - a. Morgan

b. King Henry

c. Their mother

5 . Annie and Jack got into a:

a. Motorboat

b. Car

c. canoe

6. Jack and Annie realized they did not have _____ for the canoe.

a. Life vests

b. Paddles

c. keys

7. The bugs that were crawling everywhere were:

a. Slugs

b. Spiders

c. Army ants

CURRICULUM VITAE

BIOGRAPHICAL

Name: Khaled S. Alotaibi

Workplace: Qassim university

Home Address: Kalot001@odu.edu
Tel: (757) 339-2552

EDUCATIONAL DEGREE AND BACKGROUND

2016 – present	Ph.D. Old Dominion University, Norfolk, Virginia Special Education with an emphasis Learning Disabilities
Fall 2021	Preparing Future Faculty Certificate
Spring 2021	Global Certificate Program, Old Dominion University, Norfolk, Virginia
Fall 2020	Leadership Certification Program, Old Dominion University, Norfolk, Virginia
Fall 2020	Certificate on College Teaching Program, Virginia Tidewater Consortium for Higher Education, Norfolk, Virginia
2014 – 2016	M.S. Ed. Shippensburg University of Pennsylvania, Shippensburg, Pennsylvania Special Education, Concentration in Learning Disabilities
2007 – 2010	B.S. Taif University, Taif, Saudi Arabia Special Education, Concentration in Learning Disabilities

LANGUAGES

Arabic (Native Language)

English (Excellent)

Computer Skills

Microsoft office

HONOR

Year 2021: Certificate of appreciation for effort and outstanding contribution as president of the Saudi Student Association at Old Dominion University, Saudi Arabian Cultural Mission, Washington D.C., USA

Year 2021: Certificate of appreciation for effort and devotion and dedication for Saudi Student Association at Old Dominion University, Old Dominion University, Norfolk, Virginia

November 18, 2021: Certificate of recognition for outstanding and support and valuable contribution to Global Gala Night, Old Dominion University, Norfolk, Virginia

September 29, 2021: Certificate of recognition for outstanding and support and valuable contribution to the Saudi National Day, Old Dominion University, Norfolk, Virginia

Year 2020: Certificate of appreciation for effort and outstanding contribution as vice president representation of the Saudi Student Association at Old Dominion University, Saudi Arabian Cultural Mission, Washington D.C., USA

Year 2019: Certificate of appreciation for effort and outstanding contribution as social affairs representation of the Saudi Student Association at Old Dominion University, Saudi Arabian Cultural Mission, Washington D.C., USA

Year 2019: Certificate of appreciation for effort and devotion and dedication for Saudi Student Association at Old Dominion University, Old Dominion University, Norfolk, Virginia

March 5, 2019: Certificate of recognition for outstanding and support and valuable contribution to the Global Café Saudi Arabia, Old Dominion University, Norfolk, Virginia

October 29, 2019: Certificate of recognition for outstanding and support and valuable contribution to the Saudi National Day, Old Dominion University, Norfolk, Virginia

October 8, 2015: Certificate of recognition for outstanding and support and valuable contribution to the Saudi National Day, Shippensburg University of Pennsylvania, Shippensburg, Pennsylvania

September 23, 2014: Certificate of recognition for outstanding and support and valuable contribution to the Saudi National Day, Shippensburg University of Pennsylvania, Shippensburg, Pennsylvania

2007 - 2010: Second Class Honor, Taif University, Taif, Saudi Arabia

PROFESSIONAL EXPERIENCE

2022- Present	Assistant Professor, Qassim University, Ar Rass, Saudi Arabia
2016 – 2022	Lecture, Qassim University, Ar Rass, Saudi Arabia
Year 2021	Club President of the Saudi Student Association for Saudi Arabian Cultural Mission, SACM & Old Dominion University, Norfolk, VA
Year 2020	Vice President of the Saudi Student Association for Saudi Arabian Cultural Mission, SACM & Old Dominion University, Norfolk, VA
Year 2019	Social Affairs Representative of the Saudi Student Association for Saudi Arabian Cultural Mission, SACM & Old Dominion University, Norfolk, VA
2011- 2016	Teaching Assistant, Qassim University, Ar Rass, Saudi Arabia
2015-2016	Social Affairs Representative of the Saudi Student Association for Saudi Arabian Cultural Mission, SACM & Shippensburg University of Pennsylvania, Shippensburg, Pennsylvania

TEACHING INTERNSHIPS

2010	Special Education Teacher, Mohammed Bin Abdulrahman elementary school Taif, Saudi Arabia
January 2016- March 2016	Special Education Teacher, Shippensburg Middle School Shippensburg, PA
March 2016- April 2016	Special Education Assistant, Franklin Learning Center Chambersburg, PA

TEACHING EXPERIENCE

- | | |
|------|---|
| 2021 | Full instructor, Old Dominion University
Norfolk, VA |
| 2017 | Teaching Assistant, Old Dominion University
Norfolk, VA <ul style="list-style-type: none"> • Assisted instructor with grading and weekly assignments in an upper-level special education class |
| 2011 | Teaching Assistant, Qassim University
Qassim, Saudi Arabia <ul style="list-style-type: none"> • Taught courses in Introduction to Special Education, Communication Skills, and Introduction to Learning the Rehabilitation of the Disabled to 90 students • Taught Education students in general special education courses • Established positive relationships; assisted staff in the management of student behavior by applying proactive strategies • Ensured safety for students in all environments and provided direct instructional support to individuals and groups of students • Collected data in accordance with students' IEP goals and objectives • Followed written and oral instructions; communicated effectively giving clear and concise directions • Assisted in organizing classroom materials and helped develop related activity and learning centers, including visual aids • Assisted students in adapting classroom assignments for homework • Advised students on recommendations for academic schedules • |
| 2011 | Special Education Teacher, School of Hussein Bin Ali
Almadinah, Saudi Arabia <ul style="list-style-type: none"> • Taught reading, writing and math to elementary students • Assisted students with learning disabilities in their studies |

- Provided coaching to students using task analysis and applied behavioral programming strategies
- Collaborated with students, parents, special education teachers, and administrators to help students prepare to become independently functioning adults
- Taught students to advocate for themselves as they moved toward academic, social, and career goals

COURSES TAUGHT AT OLD DOMINION UNIVERSITY

SPED 313: Human Growth and Development. 3 Credits

SPED 406/506. Students with Diverse Learning Needs in the General Education Classroom.
3 Credits

COURSES TAUGHT AT QASSIM UNIVERSITY

MANG 103: Communication Skills

SPLED 101: Introduction to Special Education

PERSONAL DEVELOPMENTAL TRAINING SKILLS

February 2021	VA CEC webinar: Supporting the Transition to Adult Life During a Pandemic: Resources for Special Educators, Parents, and Students with Disabilities
November 2021	The Informational Interview, Old Dominion University, Norfolk, VA
October 2021	Career Pathways Info Session, Old Dominion University, Norfolk, VA
October 2021	Developing your Individual Development Plan (IDP), Old Dominion University, Norfolk, VA
October 2021	Exploring the Post-doc Option, Old Dominion University, Norfolk, VA
October 2021	Webinar: Dyslexia and Co-Occurring Disorders Robin Hegner, Leadership Lecture Series (LLS)
November 11/2020	LLS: Leaders in STEM Fields: blazing the trail. Old Dominion University, Norfolk, VA
October 7/ 2020	LLS: Life Wheel assessment: group debrief, Old Dominion University, Norfolk, VA

October 22/2020	LLS: Managing Relationships Building your Network, Old Dominion University, Norfolk, VA
September 16/2020	LLS: Social Change Model, Old Dominion University, Norfolk, VA
September 23/2020	LLS: Strong Assessment: Career direction and Strong, Old Dominion University, Norfolk, VA
September 30/2020	LLS: Leadership from different Perspectives, Old Dominion University, Norfolk, VA
September 11/2020	VCLD/VACEC Webinar: COVID-19 and Special Education
August 2020	NC/CEC webinar: Virtual Mini Conference
August 2020	NC/CEC webinar: Specially Designed Instruction for Co-teaching in Middle and High School
August 2020	VCLD/VACEC webinar: Virtual Teaching from Different Perspectives
Spring 2018	Graduate Teaching Assistant, Department of Communication Disorders and Special Education, Old Dominion University: Norfolk, VA, USA
October 2015	Risk management and analysis, Lawrence Technological University, Southfield MI
October 2015	Establishing IT strategy, Lawrence Technological University, Southfield, MI
2013- 2014	Intensive American Language Center, Levels 2 to 6, Washington State University, Pullman, WA
Fall 2012	English Language Course, Oklahoma State University, Stillwater, OK
Spring 2012	English Language Course, New Horizon, Taif, Saudi Arabia
October 2010	Applied and theoretical procedures in teaching students with learning Difficulties, Almadinah, Saudi Arabia
January 2011	Academic qualification for teachers of learning disabilities, Almadinah, Saudi Arabia
March 2011	Uses of Computers in Business Administration, Almadinah, Saudi

	Arabia
March 2011	Henry's Model for Student Motivation, Almadinah, Saudi Arabia
April 2011	Braille course (letters, words, abbreviations, numbers), Almadinah, Saudi Arabia
June 2005	An English language course in the Direct English curriculum, New Horizon, Taif, Saudi Arabia

POSTRS/PRESENTATIONS

March 29, 2019	Graduate Research Achievement Day
April 27, 2019	Virginia Council for Learning Disabilities
March 29, 2018	Graduate Research Achievement Day
April 21, 2018,	Virginia Council for Learning Disabilities

REGULAR PRESENTATION & WORKSHOP

October 2020	Virtual presentation/ CLD: Using Repeated Reading and Previewing Vocabulary Interventions with Elementary-Aged Struggling Readers to Improve Fluency and Comprehension
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Membership

2017-Present	Student Council for Exceptional Children (SCEC); Old Dominion University
2019- present	Saudi Association for Exceptional Children, Unaizah, Saudi Arabia

VOLUNTEER WORK

2019-2021	Participation with Saudi Culture Club, Old Dominion University, Norfolk, VA
October 2017	Down Syndrome 5k at Mt. Trashmore, VA Beach
2016-2017	ODU to Host Fourth Annual Little Feet Meet for Children with Disabilities (the Special Olympics Virginian)
2014-2015	Participation with Saudi Culture Club, Shippensburg University, Shippensburg, PA

April 2011 Participates in learning disabilities day, Almadinah,
Saudi Arabia

CONFERENCES ATTENDANCE

April 27, 2019 The Virginia Council for Learning Disabilities Symposium
February 15-18 LDA Annual International Conferences
November 20-21,2015 The Council for Exceptional Children (PACEC) Conference,
Harrisburg, PA