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The Effects of Repeated Reading on Individuals With Moderate to Severe Learning Disabilities

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DISABILITIES

The Effects of Repeated Reading on Individuals with Moderate to Severe Learning Disabilities

Janette Iniguez

Thesis Submitted in Partial Fulfillment of the Requirements for the
Degree of Master of Arts in Education

California State University, Monterey Bay

May 2020

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REPEATED READING FOR INDIVIDUALS WITH MODERATE TO SEVERE DISABILITIES

The Effects of Repeated Reading on Individuals with Moderate to Severe Learning Disabilities

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Abstract

Many students with moderate to severe learning disabilities in elementary grade levels struggle to develop reading skills. Reading fluently is essential as these skills provide the individual access to more opportunities, such as, navigating the community, employment, or shopping for necessities. However, there is a dearth of research on how best to improve reading fluency skills for students with moderate to severe learning disabilities. The current study utilized a multiple baseline single case design to measure the impact of repeated readings with five students with moderate to severe learning disabilities. Repeated reading is an intervention that requires reading the same text multiple times, which provides necessary practice. The study implemented repeated reading with the DIBELS® fluency passage over a three-week period. Specifically, in the baseline period the participants preformed one-minute cold reads using different DIBELS® passages. During the intervention period, the participants did one cold read followed by repeated reading using the same passage for intervention. The results indicated a benefit to repeated reading for two of the participants. Due to unforeseen circumstances, three of the participants were unable to complete the intervention portion of the study.

Keywords: Repeated Reading, Special Education, Learning Disabilities, explicit reading strategy

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Literature Review

Reading is a fundamental skill that all other aspects of education are built upon. Furthermore, learning to read has a positive influence on language development, academics, and independence as an adult (Malmgren & Trezek, 2009). Reading provides access to an array of opportunities, such as higher paying jobs, independent transportation, and participating in community resources. Individuals who learn to read early are placed in a position to thrive in the areas of vocabulary, language development, fluency, and comprehension; but, at least one in five individuals has significant difficulties with reading acquisition (Lyon & Moats, 1997). Individuals who have reading difficulties are often unable to meet the academic requirements of the state-approved grade level standards and are often referred to the special education program to seek individualized services (Individuals with Disabilities Education Act, 2004). In addition, despite the known importance of developmental reading skills, there is little research on the most effective interventions to address reading challenges for individuals with moderate to severe learning disabilities (Chard, Vaughn, & Tyler, 2002).

Individuals with Moderate to Severe Learning Disabilities

The Individuals with Disabilities Education Act (IDEA; 2004) defines disability and guides how states define individuals who are eligible for free appropriate public education under special education law. IDEA (2004) delineates disabilities into 13 specific categories, ranging from mild to severe. The special education disability categories are autism, deafness, developmental delay, emotional disturbance, hearing impairment, intellectual disability, multiple disabilities, orthopedic impairment, other health impairment, specific learning disability, speech impairment, traumatic brain injury, and visual impairment, including blindness (IDEA, 2004).

Although there are 13 disability categories, there is a range of functioning and ability within each of the aforementioned disability categories.

Handleman (1986) proposed the term severe developmental disabilities as a term to refer to individuals with severe autism, severe intellectual disabilities, and multiple disabilities. For the population of students with moderate to severe disabilities, the disability must have originated before the age of 18, and the individual must demonstrate severe limitations in the areas of cognitive functioning and adaptive behavior (Handleman, 1986). Most of the individuals in this population will require a caregiver to provide and care for them; however, this depends on the individual's needs.

Depending on the individual's learning needs, an Individualized Education Plan (IEP) team will gather and discuss the academic placement based on the individual's assessments (Yell & Stecker, 2013). The IEP team discusses the least restrictive environment for the individual, along with the benefits and potentially harmful effects of each of the placement options during the IEP meeting. The placement options vary in different districts, but the team aims to place the individual in the placement that best fits his/her needs. Individuals that qualify under a moderate to severe learning disability category or under the category of developmental delay, often receive services in a more restrictive environment and not with the mainstream population (Zigmond & Kloo, 2011). An individual with moderate to severe disabilities requires intensive intervention and significant modifications that are generally not feasible in the general education setting. For example, individuals with moderate to severe learning disabilities are served in classrooms with fewer students (e.g., 5 students instead of 30) and a smaller teacher to student ratio (e.g., 1:5) (Zigmond & Kloo, 2011). These classes are more equipped to make academic modifications or accommodations as needed, and provide individualized instruction to support the individual in

meeting their academic goals (Zigmond & Kloo, 2011). The modifications can be classroom routines, such as small groups of students in the same instructional level or one-to-one explicit direct systematic instruction based on the student's learning needs. The teacher is also able to make modifications to scaffold lessons tailored to the students' academic abilities, and with the help of the aides be able to provide more individualized instruction for the students.

The intensive modifications are needed as individuals with moderate to severe learning disabilities often have combined language deficits that make it difficult to obtain meaning from print and demonstrate difficulty in reading fluency, which correlates with understanding of text (Browder, Ahlgrim-DeLzell, Courtade, Gibbs, & Flowers, 2008; Chard et al., 2002). Pezzino, Marec-Breton, and Lacroix (2019) conducted a study on reading acquisition for individuals with moderate to severe learning disabilities and found learning to read is influenced by delays in cognitive skills such as- perception, oral language, phonological process, and working memory. Furthermore, there was a high degree of difference between a student's reading skills and specific cognitive skills, such as reading perception, oral language, phonological processing, and working memory. The authors theorized it is the difference between these abilities that causes individuals with moderate to severe learning disabilities to suffer in different areas of academics, such as reading, math, science and history due to the need to read in the different subjects, as well as in the individual's future as an adult. Reading is essential for individual to function independently as an adult, including navigating the use of public transportation, following directions to a location, or shopping for necessities. In order to reach this level of independence, individuals with moderate to severe learning disabilities must be taught the five components of reading.

Five Components of Reading

There are five components required in the development of literacy skills: phonemic awareness, phonics, comprehension, fluency, and vocabulary. The foundation of reading is known as phonemic awareness, which is the smallest unit of speech that carries a meaning, and also the strongest predictor of an individual's reading learning potential (Lyon, 1995). Phonemic awareness focuses on the ability to manipulate (i.e., isolate, blend, segment, and delete) phonemes in spoken words (National Reading Panel, 2000). An individual must have the understanding that words are made up of phonemes, and together they create a word. For example, the word "hat" is made up of three individual phonemes: h/a/t. The individual should be able to identify the separate sounds then blend the sounds to create the word. Phonics is the ability to identify relationships between the letters in written language and the sounds of spoken language, which helps individuals become skilled readers by learning to recognize words (Malmgren & Trezek, 2009). After individuals have a basic understanding of phonemic awareness and phonics, they move on to building vocabulary and reading comprehension.

Vocabulary and reading comprehension are required in order for the individual to understand what it is they have read which can occur across all reading levels (NRP, 2000). Vocabulary is usually tied closely to individual words, while comprehension refers to understanding the bigger picture. Comprehension is vital to the development of an individual's reading skills and is essential, not only to academic learning, but also to life-long learning (Durkin, 1993). While all five areas of reading are critical for creating a successful reader, the focus of this research is on the fifth component of reading, reading fluency.

Reading Fluency. Reading fluency is defined as the speed, accuracy, and prosody in which an individual can read a text (NRP, 2000). Reading speed is determined by the number of

words read per minute and accuracy is defined as the number of words correct per minute (WCPM). When measuring accuracy, errors such as- mispronunciations, non-pronunciations, omissions, insertions, line skipping, and substitutions are not counted towards WCPM. Prosody is defined as reading with appropriate changes in intonation while paying attention to syntax and punctuation (Kuhn, Schwanenflugel, & Meisinger, 2010). Individuals with moderate to severe learning disabilities often struggle with reading speed, accuracy, and prosody (Chard et al., 2002).

It is critical that schools provide intervention services with low reading fluency abilities, especially for individuals with moderate to severe learning disabilities. This is because these fundamental fluency skills directly impact performance on English Language Arts (ELA) tests (Perin, 2013). Chard and colleagues (2002) described that difficulties with fluency are linked to issues with decoding, reading sight words, and reading with automaticity and speed. A lack of reading fluency also impacts the reader's ability to understand what they read. If a reader is unable to decode the text automatically, he/she will devote more time trying to make sense of the word rather than the author's intended meaning, which can lead to a misinterpretation of text (LaBerge & Samuel, 1974). The misunderstanding of text may also cause delays in other academic areas where reading is a necessity. Furthermore, individuals with these difficulties may struggle accessing grade-level curriculum if they are unable to read and understand the material. Given that reading is a skill used throughout one's life, addressing fluency for individuals with moderate to severe learning disabilities is essential, particularly as it can provide opportunities for independence in adulthood.

The difficulties in fluency experienced by many individuals with moderate to severe learning disabilities lead to struggles with independence as they age. Individuals with poor

reading skills struggle within the classroom environment, and across the range of postsecondary settings, including higher education, employment, and the community (Perin, 2013). Reading is essential for an individual to independently to read signs on their own and fill in their job applications and college applications. By increasing an individual's reading abilities, it may lead to higher postsecondary outcomes such as better employment opportunities, more independence, and better quality of life (Lemons, Allor, Al Otaiba, & LeJeune, 2016). Researchers agree that fluency intervention is needed; however, there is no agreement on the most effective strategy to improve reading fluency for individuals with moderate to severe learning disabilities.

Strategies for Teaching

Although there is no agreement of the specific strategy to use to teach reading fluency, there is an agreement that fluency instruction should be an essential part of every reading program (NRP, 2000). To develop fluency, teachers must have fluency methods that allow them to work with individuals to build their accuracy, rate, and prosody. Common strategies to improve reading fluency include- independent silent reading, repeated oral reading, paired reading, shared reading, and assisted reading (Kuhn et al., 2010). The purpose of each of these practices is to help students through oral reading practice and guide them in developing fluent reading abilities that would help students read with accuracy, speed, and prosody (NRP, 2000).

Repeated fluency reading can help individuals build their fluency and reading comprehension. The teacher can focus on different aspects of the story. For example, focusing on identifying the character one day and the following day describing the character, and building background knowledge of the reading and be more familiar with the vocabulary (Lemov, 2016). In addition, the NRP (2000) analyzed guided oral reading practice, and the findings indicated consistent practice had a positive impact on word recognition, fluency, and comprehension as

measured by a variety of test instruments and at a range of different grade levels. Furthermore, repeated reading is a strategy designed to increase an individual's reading ability in the area of fluency.

Intervention

Repeated reading is a method based on the theory of automatic information processing which allows individuals the opportunity to read and reread the same text multiple times, which provides necessary practice to readers who struggle with a linguistic structure such as contextual and semantic cues (Moyer, 1982; LeBerge & Samuels, 1974). This intervention helps individuals build fluency and comprehension. During this process, individuals reread the same passage multiple times to help retain new information. Automatic processing primarily builds word accuracy through repeated practice allowing the words to become automatic. With repeated readings, a teacher can make needed accommodations to better meet the individual's learning needs, such as using a fluency passage or book of choice at the individual's independent reading level (Blum & Koskinen, 1991). Repeated reading provides the teacher the flexibility to do the readings based on word accuracy and speed (e.g., the student will need to read 80 words correct per minute), or a student may read the passage a set number of times throughout the week. Therrien (2004) suggests that the repeated reading intervention is most beneficial when an individual has to read the text three to four times. The teacher also has different options for instructional grouping, including groups of students who are on the same reading level, working one-to-one with students or providing whole-class instruction. Repeated reading is used as a fluency-building intervention that is usually aimed to improve speed and accuracy for an individual's text reading (Chard et al., 2002). Furthermore, repeated reading offers individuals an opportunity to read and reread the same text multiple times and is implemented in a variety of

ways, which includes partner reading, reading to another person or reading with an audiotape. Repeated reading is an evidence-based intervention that provides individuals with moderate to severe learning disabilities with an explicit modeling, corrective feedback, scaffolding, reinforcement, and focused, systematic instruction in the area of reading accuracy, as suggested by Lemons and colleagues (2016). Repeated reading has been studied with various populations ranging from individuals in general education to individuals with learning disabilities. The previous studies that were conducted do not specify the classification of learning disabilities. This study researched repeated reading as an intervention, specifically looking at individuals with moderate to severe learning disabilities in grades 3rd to 5th. The study was a multiple baseline A-B single design case in which each participant was their control, once the intervention, repeated reading, was successful with the first participant, the second participant began the intervention phase.

Summary

Repeated reading is an evidence-based reading intervention that helps individuals develop their fluency reading skills; however, this intervention has not adequately been researched for students with moderate to severe learning disabilities (Chard et al., 2002). The implementation of the evidence-based intervention, repeated readings may help individuals with moderate to severe learning disabilities who need more reading practice to increase their fluency rate. Furthermore, if individuals with moderate to severe learning disabilities improve their reading ability, they will also improve their communication skills and problem-solving skills (Browder et al., 2008). The ability to read can also help retrieve necessary information from books or leisure activities, such as playing video games and following cooking instructions. In addition, learning to read can provide opportunities that would otherwise not be available. For

example, learning to read can lead to higher paying jobs, safe navigation within the community, and increased independence overall. Reading is essential for us to function as independent adults, which is why building a student's reading abilities is essential.

Method

The purpose of this study was to examine the use of repeated reading as an intervention to help build fluency in 3rd to 5th grade students with moderate to severe learning disabilities. Repeated reading offers participants an opportunity to read and reread the same text multiple times which provides necessary practice to readers who struggle with linguistic structure such as, contextual and semantic cues (Moyer, 1982).

Research Question

Does repeated reading increase fluency in 3rd to 5th grade individuals with moderate to severe learning disabilities?

Hypothesis

Chard and colleagues (2002) conducted a study exploring the effectiveness of repeated reading as a fluency intervention. Results indicated that an effective intervention for building fluency includes an explicit model of multiple opportunities to repeatedly read with corrective feedback. The researcher hypothesizes that repeated reading will improve fluency in participants with moderate to severe learning disabilities.

Research Design

This study was a multiple baseline A-B Single Case Design (SCD). The data points were collected for two phases: (a) baseline activities that involved participants completing cold reads

until five consecutive data points were achieved, and (b) intervention involved participants completing repeated oral readings. In SCD research, each participant acts as his or her own control.

The dependent variable of fluency was measured with the number of words correct per minute (WCPM) for each of the readings (Fuchs & Deno, 1991). Stability was defined as five consecutive data points with a range of \pm five WCPM for each cold read. According to Yell and Stecker (2003), the baseline assessment data should provide the needed information to determine how each participant's progress will be measured. During the baseline, the participants did cold readings. In cold reads, participants did not have prior exposure to the fluency passages, and each trial used a different fluency passage until stability was reached. During the intervention phase the participants were expected to demonstrate a positive therapeutic trend or an increase of WCPM. All participants started in baseline at the same time. Once the first participant reached five stable data points, she moved into intervention and the other four participants remained in baseline. When the first participant demonstrated a therapeutic trend in intervention of four data points, and the second participant's baseline data was stable, participant two began the intervention phase. This process was repeated with two participants, due to the COVID-19 school closures, the remaining of participants only completed the baseline phase.

Independent variable. The independent variable for the research was repeated readings. The method of repeated reading was examined by the NRP (2000), and results showed the mean weighted effect size for guided oral repeated reading was .41; indicating that repeated reading had a moderate impact on reading achievement. Repeated readings is often used as a fluency-building intervention that is aimed to improve speed, and accuracy for students' text reading

(Chard et al., 2002). Repeated reading offers students an opportunity to read and reread the same text multiple times and is implemented in a variety of ways which include partner reading, reading to another person or reading with an audiotope.

Dependent variable. The dependent variable for the research was increased WCPM in fluency passage. Fluency reading is often defined as speed, accuracy, and prosody (Kuhn et al., 2010). For this research, fluency accuracy was defined by the number of WCPM. Fluency accuracy was calculated as total of words read minus the number of errors to give us the overall WCPM (Fuchs & Deno, 1991). The data was collected using a DIBLES® fluency sheet (see Appendix A), a dash over the words indicates the word was read incorrectly or skipped by the participant.

Setting & Participants

This study took place in small town in Central California. The elementary school was comprised of 962 total students (491 females and 471 males). This included 704 English Language Learners. The school was 98.9% Hispanic or Latino, 0.9% White, 0.1% American Indian or Alaska Native, and 0.1% two or more races (California Department of Education, 2019). The study was conducted in one of the four elementary schools in the district, which had a total of 29 classes from transition kinder to 6th grade, and one combined k-6th grade Special Day Class. The classroom that was used for the study was a combined k-6th grade Moderate to Severe, Special Day Class. There were nine students (seven boys and two girls) in the class and all had a current Individualized Education Plan (IEP). Furthermore, seven students received Speech services, and all received Occupational Therapy services. Two students were English-Only Learners, and the remaining seven were English Learners. The classroom had a total of

three full-time classroom assistants, three classroom assistants that assisted three hours a day, and one full-time credentialed teacher. Non-random sampling was used due to participating students had all demonstrated a need for an explicit one-to-one instruction in the area of reading fluency based on previous assessments, teacher observation, recommendations, and academic achievement. Five students comprised the study sample, four boys and one girl. Each participant had an assigned a pseudonym to protect confidentiality and provide anonymity.

Student 1. Mar, was a 5th grader, and was diagnosed with a severe learning disability. She required assistance in the area of articulation and expressive language, and reminders to use her words to communicate. She knew the name of the letters, and sounds they produce, she understood the concept of print and was able to read sight words at a kindergarten level. She was an English-Learner with a primarily language of Spanish at home. She pushed out to physical education (PE) and English Language Development (ELD) in general education.

Student 2. Nemo was in 5th grade, and had a moderate learning disability. Nemo was verbal but had a speech delay in the area of articulation. He was able to use complete sentences in areas of interest, but needed assistance to formulate answers in non-preferred topics. Nemo was a quick learner and made improvement in his reading abilities. He was able to read and decode novel words and words he previously had exposure too. He enjoyed working on the floor, and playing with his shirt for self-stimulation. He was classified as an English-Learner but mother stated that he did not speak or understand Spanish, and used his little sister as an interpreter at home. He was pushing out to ELD, PE, and science.

Student 3. Carls was in 3rd grade, and had severe learning disabilities. Carls was verbal but had a severe speech delay in the area of articulation. He was able to give the name of each

letter but struggled to produce certain sounds. Carls required sensory breaks, which were taken as needed, he was able to verbalize his feelings and was able to identify when he was feeling overwhelmed. Carls was an English- Learner, and pushed out to ELD, and PE with general education.

Student 4. Buddy was in 4th grade, and had a moderate learning disability. Buddy was verbal but had a speech delay in the area of articulation and expressive language. He was able to name and sound all the letters and some kindergarten sight words. Buddy liked having a highly structured schedule, and enjoyed making up his own stories during his breaks. He was an English-Only Learner, and pushed out to ELD, and PE with general education.

Student 5. Ben was in 3rd grade, and had a moderate learning disability. Ben was a fully verbal in Spanish, and was able to communicate his needs and wants using short phrases, and was working on building his vocabulary in English. Ben was an English-Learner, and pushed out to ELD, and PE with general education.

Measures

The DIBELS® Oral Reading Fluency (DORF) probes (see Appendix A) that were used were standardized and individually administered for one minute to assess the students' oral reading accuracy and fluency during the English Language Art portion of the classroom morning centers. The DORF is a standardized set of passages with procedures designed to (a) identify children who may need additional instructional support, and (b) monitor progress toward instructional goals (see Appendix B; Good & Jefferson, 1998). Across all the data points (i.e., baseline and treatment), the participants read each passage for one minute. During the baseline phase (i.e., phase A), the participants had one minute to perform cold reads, and the researcher

and second rater had a scoring sheet (see Appendix A) with the same fluency passage the participant was reading (Fuchs, Fuchs, Hamlett, Wals & Germann, 1993). The cold reads were passages that the participants did not have prior exposure to; it was their first time reading the fluency passage. Each cold read fluency passage was unique and was not repeated during the baseline phase. According to Fuchs and colleagues (1993), the progress should be reasonable for students during the second phase (i.e., intervention; phase B), the participants performed one cold read, followed by repeated reading to increase the WCPM or until a positive therapeutic trend of four data points were collected. For the purpose of the research, the scores showed the participants had increased the number of WCPM in the fluency passage.

Validity. As previously mentioned, the DORF passages are a set of standardized passages used for assessing and monitoring students' progress in different academic areas, one procedure widely used is oral reading fluency (Fuchs & Deno, 1991). According to Good and Jefferson (1998), a criterion-related validity study on reading passages in eight different studies in 1980s reported coefficient ranging from .52-.91. Oral reading fluency passage focus on two of the three components of fluency: speed and accuracy. The fluency passages that measure a student's accuracy and speed have long been studied by researchers, and have been proven to be efficient, reliable, and valid indicators of reading proficiency when used as screening measures (Fuchs, Fuchs, Hosp, & Jenkins, 2001).

As previously stated, during the baseline, the number of WCPM was calculated, to establish the baseline and move to the intervention phase after stability had been reached. According to Hasbrouck and Tindal (2006), WCPM had been shown to serve as an accurate and powerful indicator of overall reading competence, especially in its strong correlation with

comprehension, and the validity and reliability of these two measures have been well established in a body of research extending over the past two decades. The stability for the second phase was four positive therapeutic trend data points that showed an increase words read correctly during the fluency passage.

Reliability. In the study conducted by Tindal, Marston, and Deno (1983), reliability for the DORF was found to have a test-retest reliabilities for elementary students ranging from .92 to .97.

Intervention

Repeated reading is a method that is mostly based on implications on the theory of automatic information processing in reading (LeBerge & Samules, 1974). During the process, the individuals read the same passage four times to retain new information until an increased WCPM is shown. The idea of automatic processing primarily builds this word accuracy through the repetitiveness that allows the words to become automatic.

Repeated readings are often used as a fluency-building intervention that was generally aimed to improve speed and accuracy for students' text reading (Chard et al., 2002). Repeated reading offers students an opportunity to read and reread the same text multiple times and is implemented in a variety of ways, which includes partner reading, reading to another person or reading with an audiotape. The researcher had individual one-on-one explicit direct instruction with the participants using the same fluency passage with the researcher and the second scorer present 100% of the time. The fluency passage remained the same during the intervention period. After the participant had read the fluency passage for a minute and WCPM were established, the

researcher did a choral read with the participant using the same fluency passage. According to Lemov (2016), reading aloud/choral reads with students help build fluency by reading expressively, make explicit reference to punctuation, and have them reread the story/passage after. The choral read helped the participants hear the researcher read with automaticity and prosody, and gain more exposure to new vocabulary. The participants were asked to read the passage once a day to establish the WCPM.

Procedures

During the baseline phase (i.e., Phase A), the researcher provided the participant with a cold read, and ask the participant to read the passage at his/her best abilities for a minute (Good, Gruba, & Kaminski, 2002). The researcher documented the data and followed the DORF directions (see Appendix B). The scoring procedures began when the participant reads the first word, he/she had one minute to read as much as they can, if they got stuck, after three seconds the researcher read the word and put a slash over the word. The slash over the words was the symbol for words read incorrectly, which also includes words that the researcher read. After the minute was up, the researcher placed a bracket after the last word the student provided (see Appendix A). The researcher provided teacher feedback (e.g., positive comments related to the participants' performance). The researcher used different stimuli for each cold read. The cold reads were performed for one minute each day until the participant reached five consecutive stable data points of a variation of +/- five. During the intervention (i.e., Phase B), the researcher provided the participant with a fluency passage, and asked the participant to read the passage at his/her best abilities for a minute. Similar to the baseline phase, the researcher documented the data, and provide teacher feedback when the participant was done. For the intervention phase the

participant performed a repeated read of the passage for each session (one session per day) until four positive therapeutic trend data points were collected. The sessions were conducted once a day during ELA time.

Data collection. The researcher collected data on words read correctly per minute for the fluency passage. The participants reached stability after five consecutive cold reads that showed a variation of \pm five WCPM per fluency passage. The stability for the second phase was four positive therapeutic trend data points that showed an increased word read correctly for each session.

Inter-rater reliability was established with a second rater to ensure the trials were scored accurately. The second rater used the same methods to score as the researcher (see Appendix B). During the baseline phase, the researcher and second rater collected the WCPM for each cold read of different DORF. The second rater and researcher scored 100% of the time with 100% agreement. The second rater received explicit training on the implementation of the intervention, including modeling of the intervention and how to score the fluency passage.

Fidelity. The researcher ensured fidelity by having a second scorer available on-site for more than 100% of the time. After each session, the second-scorer completed a fidelity checklist to ensure the study was being implemented with the established criteria (see Appendix C). Thus, the implementation of fidelity with the second scorer being present 100% of the duration of the study, and observed the six features of the intervention during every session.

Ethical Considerations

Ethical considerations were considered do to the work with human subjects. The three principles of the Belmont Report (i.e., beneficence, respect for persons, and justice) were

adhered to at all times. The principal of beneficence was practiced by ensuring honesty with all participants. The respect for the students' voluntary participation, and the right for them opt out if they pleased. The study occurred during school hours at time that best worked around the participants' classroom routines. In addition, the participants in the study benefited from the additional explicit direct instruction of repeated reading within the classroom.

Validity threats. Validity threats were also a concern when conducting research with human participants. The researcher's bias on the selection of subjects is an extraneous variable that threatens the validity. Using the researcher's students as the main participants reduced the ability to make generalizations to a wider population with moderate to severe learning disabilities. The researcher trained the class staff on how to complete the intervention, that way they would have been available to gather the needed data in case of researcher was absent. The absence of the researcher would have caused a pause on the intervention and the participants could have regressed.

Social Validity

After the study, the second rater completed a four-point Likert scale (i.e., 1 = strongly disagree to 4 = strongly agree) social validity questionnaire (see Appendix D). The questionnaire, adapted from Berger, Manston, and Ingersoll (2016), consists of seven questions designed to understand the perceived usefulness, significance, and satisfaction with the implemented intervention (Kennedy, 2005). The second rater was the head classroom assistant in the classroom. The second rater strongly agreed with the treatment being effective to the participants and noticed the improvement in their reading confidence, not only in the ELA center but also in Math and other subjects that required reading. She strongly agreed that the

participants quickly improved their WCPM after repeated reading. However, due to the rapid closure of schools during the COVID-19 pandemic, she could not agree with the skills taught to remain improved after the treatment had ended.

The second-scorer had been an aide in the classroom for multiple years and mentioned that the students could quickly regress when there is a break. She feared they would lose the skills they learned during the intervention when the schools rapidly closed, and the same face to face explicit direct instructions were not being provided but expected regression in all areas, not just the treatment area. The second-scorer felt confident in carrying out the intervention to improve the student's reading skills and her child.

Data Analyses

A visual analysis of the data was conducted to compare the WCPM at baseline and intervention for each participant. In addition, the percentage of non-overlapping data (PND) procedure described by Scruggs and colleagues (1987) was used. The guidelines recommended by Asaro-Saddler and Saddler (2010) was adopted and include the following: PND score of 90%, very effective treatment; 70–90 %, an effective treatment; 50–69 %, indicating some effect, and less than 50 %, a questionable treatment.

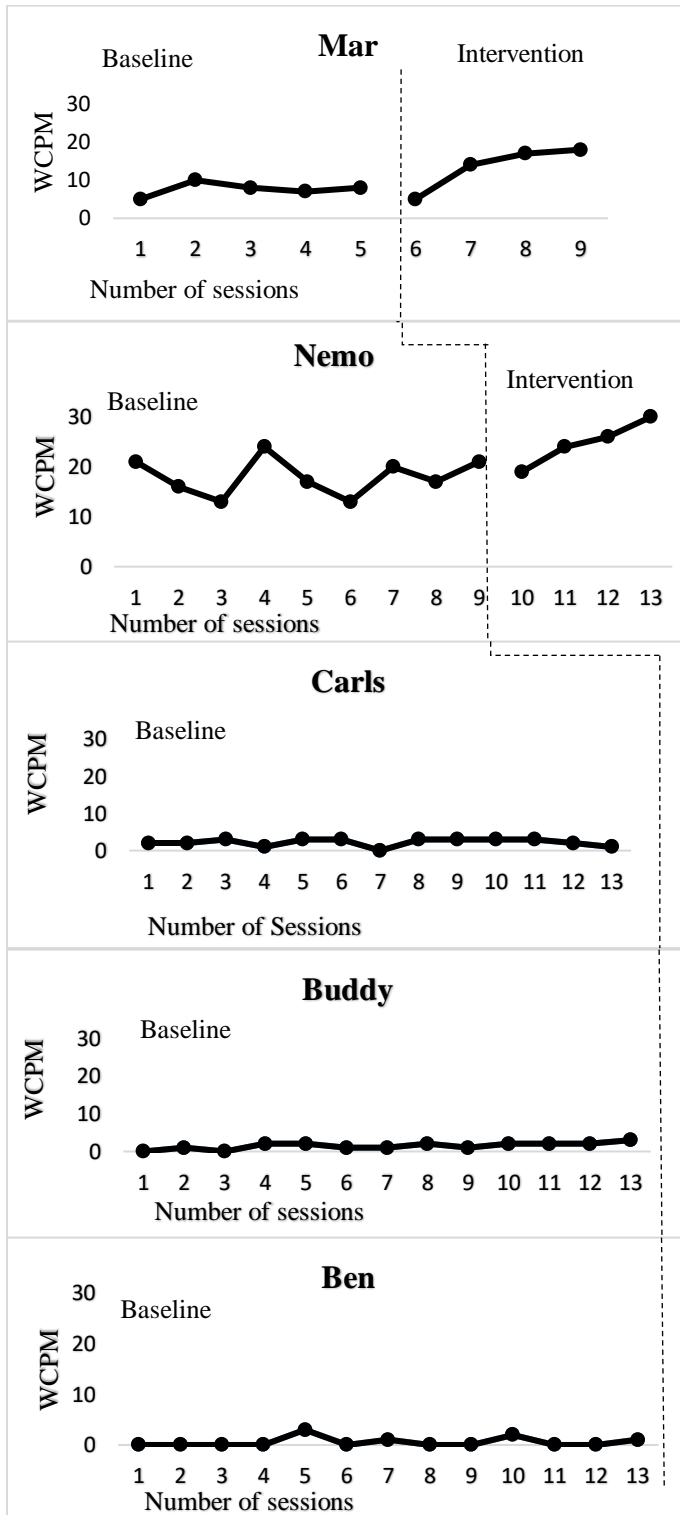
Results

All five participants entered into baseline simultaneously; however, only two of the participants advanced to the intervention phase. Due to the unforeseen circumstances of the COVID-19 pandemic, the three remaining participants were unable to proceed into the intervention phase.

Figure 1 displays the participants' data collected; the x-axis is the number of sessions and the y-axis is the number of words read correctly per minute (WCPM). Mar's baseline scores ranged from 5 to 10 with an average of 7.6 WCPM. In intervention, Mar's WCPM ranged from 5 to 18 with an average score of 13.5. Mar showed a gradual increase during intervention with a PND of 75%. Nemo remained in baseline until Mar completed the intervention phase. Nemo's baseline scores ranged from 13 to 24 with an average of 18 WCPM. In intervention, Nemo's WCPM ranged from 19 to 30 with an average score of 24.75 WCPM. Nemo demonstrated a positive therapeutic trend in the intervention phase with a PND of 50%. Figure 1 also displays the baseline results for the three remaining participants - Carls, Buddy, and Ben. Although the participants did demonstrate stable baseline data with variation \pm five WCPM, the rapid school closure did not allow for time to transition into the intervention phase.

Figure 1

Number of Words Correct per Minute (WCPM) for Participants



Discussion

The purpose of this multiple baseline A-B single case design study was to examine the impact of the intervention, repeated reading, on participants WCPM as measured by DIBELS® fluency reading passages. Findings from the two participants that completed the research indicated that repeated reading does improve the WCPM (accuracy) for students with moderate to severe learning disabilities. The PND for the two participants were 75% and 50%, which according to the guidelines of Asaro-Saddler and Saddler (2010) it was very effective for Mar and effective for Nemo.

Mar had a stable baseline with little variation; she had one overlapping data point during the intervention. This overlapping data point is to be expected given that Mar did not have previous exposure to the intervention or the readings. After this initial overlapping data point, Mar continued to make steady gains in in number of words read correctly. Mar's PND was 75% which is evidence of a very effective intervention according to the Asaro-Saddler and Saddler (2010) recommended guidelines. Although, during the intervention Mar did not attempt to decode words she did not know, but she was able to pick up patterns quickly. After given the corrective feedback, she realized some words in the passage were the same or would sound out the beginning and recall from the previous session what the word was, which helped her increase her WCPM score.

Nemo, on the other hand, was a very motivated learner; he would compete with himself and try to get a better score than the day before. Nemo had a PND of 50% overlapping data between baseline and intervention, which reflects an effective intervention. According to the Asaro-Saddler and Saddler (2010) recommended guidelines the PND of 50% represents an

effective treatment for the participant. However, it should be noted that although Nemo had overlapping data points, he had a consistently positive trend demonstrating that the intervention was having a positive impact on his WCPM. Nemo would attempt to decode words; if he did not know them, he would make an educated guess based on the first sounds of the word. His willingness and eagerness to do better was impressive. His two overlapping data points during the intervention phase and his gradual increase were due to missing the long words in the passage he had not read before, and he would attempt to decode them if the word did not make sense with the following word he would go back and try again.

The synthesis of research conducted by Chard and colleagues (2002) suggested that repeated reading interventions for students with learning disabilities were associated with improvements in the areas of reading rate, accuracy, and comprehension. The practice of rereading text many times with corrective feedback for skipped words or words misread may be an essential component to building fluency (Chard et al., 2002). Moreover, the rereading and Nemo's perseverance allowed him to read 30 WCPM at the end of the intervention, which was an 11 WCPM increase from the first session. The corrective feedback and repetition of the DORF also helped Mar increase her WCPM during intervention from 5 to 18. This study showed the intervention of repeated reading did increase the WCMP in the participants who completed the intervention phase. Additionally, the scope of the research became limited due to the COVID-19 pandemic school closure, which prevented the remainder of participants from completing the intervention phase.

Limitations and Future Research

According to Pring (2005), a single-case study cannot be considered a generalizable study due to the lack of representation of a particular group of children. The sample size of the study was also smaller than anticipated due to the sudden closures of schools during the COVID-19 pandemic; future studies should focus on a higher number of participants to have a better understanding of the intervention effect on the population.

For future research, another recommendation would be to research repeated reading as a longitudinal study to see the effects of repeated reading for students who are poor readers. The time frame of the study was cut-short; the results of repeated reading in a longer time-frame with the moderate to severe learning disabilities population would allow more generalized findings within that population. Furthermore, virtual or remote teaching appears to be a need moving forward in the field of education. There are many challenges in implementing remote teaching with the moderate to severe population including the need for assistance logging into their devices, maintaining attention and motivation. Future studies should consider studying the effectiveness of repeated readings via a remote learning platform.

Conclusion

This study provided evidence to show the positive impact on WCPM through a repeated reading intervention for two of the participants with moderate to severe disabilities. Results should be interpreted with care; however, these findings may be helpful for educators working with the moderate to severe population. It is important that teachers of students with moderate to

severe learning disabilities continue to seek ways to improve the reading skills for this population.

Reference

- Asaro-Saddler, K., & Saddler, B. (2010). Planning instruction and self-regulation training: Effects on writers with autism spectrum disorders. *Exceptional Children, 77*(1), 107-124.
- Berger, N. I., Manston, L., & Ingersoll, B. (2016). Establishing a scale for assessing social validity of skill building interventions for young children with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 46*, 3258-3269. doi: 10.1007/s10803-016-2863-9
- Blum, I. H., & Koskinen, P. S. (1991) Repeated reading: A strategy for enhancing fluency and fostering expertise. *Theory Into Practice, 30*:3, 195-200, doi: 10.1080/00405849109543500
- Browder, D. M., Ahlgrim-Dezell, L., Courtade, G., Gibbs, S. L., & Flowers, C. (2008). Evaluation of the effectiveness of an early literacy program for students with significant developmental disabilities. *Exceptional Children. 75* (1), 33-52.
doi:10.1177/001440290807500102
- California Department of Education. (2019). *Enrollment Report*. Retrieved from CDE website <https://dq.cde.ca.gov/dataquest/>
- Chard, D., Vaughn, S. & Tyler, B. J. (2002). A synthesis of research on effective interventions for building reading fluency with elementary students with learning disabilities. *Journal of Learning Disabilities. 35*.386-406. doi:10.1177/00222194020350050101
- Durkin, D. (1993). *Teaching Them to Read. Sixth Edition*. Boston, MA: Allyn and Bacon.

Fuchs, L. S., & Deno, S. L. (1991). Curriculum-based measurement: current applications and future directions. *Exceptional Children*, 57, 466-501.

Fuchs, L. S., & Deno, S. L. (1991). Effects of curriculum within curriculum-based measurement. *Exceptional Children*, 58(3), 232–243. doi:10.1177/001440299105800306

Fuchs, L. S., Fuchs, D., Hamlett, C. L., Walz, L., & Germann, G. (1993). Formative evaluation of academic progress: How much growth can we expect? *School Psychology Review*, 22, 27-27.

Fuchs, L. S., Fuchs, D., Hosp, M. K., & Jenkins, J. R. (2001). Oral reading fluency as an indicator of reading competence: a theoretical, empirical, and historical analysis. *Scientific Studies of Reading*, 5(3), 239–256.

Good, R. H., Gruba, J., & Kaminski, R. A. (2002). Best Practices in Using Dynamic Indicators of Basic Early Literacy Skills (DIBELS) in an Outcomes-Driven Model.

Good, R. H., & Jefferson, G. (1998). Contemporary perspectives on Curriculum-Based Measurement validity. In M. R. Shinn (Ed.), *Advanced applications of Curriculum-Based Measurement* (pp. 61-88). New York: Guilford.

Hasbrouck, J., & Tindal, G. A. (2006). Oral reading fluency norms: A valuable assessment tool for reading teachers. *The Reading Teacher*, 59(7), 636-644. doi:10.1598/RT.59.7.3

Handleman, J. S. (1986), *Education and Treatment of Children.*, 9(2), 153-167.

Hudson, M. E., Browder, D. M., & Wood, L. A. (2013). Review of experimental research on academic learning by students with moderate and severe intellectual disability in general education. *Research and Practice for Persons With Severe Disabilities*, 38, 17-29.

Individuals with Disabilities Education Act, 20 U.S.C. § 1400 (2004)

Kennedy, C. H. (2005). *Single-case designs for educational research*. Boston, MA: Allyn and Bacon.

Kuhn M., Schwanenflugel P. J., & Meisinger E. B. (2010). Aligning theory and assessment of reading fluency: Automaticity, prosody, and the definitions of fluency. *Reading Research Quarterly* 45:230-51. doi:10.1598/RRQ.45.2.4

LeBerge, D., & Samuels, S. J. (1974). Towards a theory of automatic information processing in reading. *Cognitive Psychology*, 6, 293-323. doi:10.1016/0010-0285(74)90015-2

Lemons, C. J., Allor, J. H., Al Otaiba, S., & LeJeune, L. M. (2016). 10 Research-Based tips for enhancing literacy instruction for students with intellectual disability. *Teaching Exceptional Children*, 49(1), 18–30. doi: 10.1177/0040059916662202

Lemov, D. (2010). *Teach like a champion*. San Francisco, CA; Jossey-Bass.

Lyon, G. R. (1995). Toward a definition of dyslexia. *Annals of Dyslexia*, 45, 3-27.

Lyon, G. R., & Moats, L. C. (1997). Critical conceptual and methodological considerations in reading intervention research. *Journal of Learning Disabilities*, 30, 578–588.
doi:10.1177/002221949703000601

Malmgren, K., & Trezek, B. (2009). Literacy Instruction for Secondary Students with Disabilities. *Focus on Exceptional Children*, 41 (6), 1-12. doi:10.17161/fec.v41i6.6838.

Moyer, S. B. (1982). Repeated reading. *Journal of Learning Disabilities*, 45, 619-623.

National Reading Panel. (2000). *Teaching children to read*. Washington, DC: National Institutes of Health.

- Perin, D. (2013). Literacy skills among academically underprepared students. *Community College Review, 41*, 118–136. doi:10.1177/0091552113484057
- Pezzino, A. S., Marec-Breton, N., & Lacroix, A. (2019). Acquisition of Reading and Intellectual Development Disorder. *Journal of psycholinguistic research, 48*(3), 569-600. doi:10.1007/s10936-018-9620-5
- Pring, T. (2005). *Research methods in communication disorder*. London: Whurr.
- Scruggs, T. E., Mastropieri, M. A., & Casto, G. (1987). The quantitative synthesis of single subject research: Methodology and validation. *Remedial and Special Education, 8*(2), 24–33. doi:10.1177/074193258700800206
- Therrien, W. J. (2004). Fluency and comprehension gains as a result of repeated reading: A meta-analysis. *Remedial and special education, 25*(4), 252-261.
- Tindal, G., Marston, D., & Deno, S. L. (1983). The reliability of direct and repeated measurement (Research Rep. 109). Minneapolis, MN: University of Minnesota Institute for Research on Learning Disabilities.
- Yell, M. L., & Stecker, P. M. (2003). Developing legally correct and educationally meaningful IEPs using curriculum-based measurement. *Assessment for Effective Intervention, 28*(34), 73–88.
- Zigmond, N., & Kloo, A. (2011). General and special education are (and should be) different. In J. M. Kauffman & D. P. Hallahan (Eds.), *Handbook of special education* (pp. 160-172). New York, NY.

Appendix A

Teacher Scored Template

DIBELS 8th Edition Oral Reading Fluency

Benchmark ORF 1.Beginning

Examiner script	Reminders
Please read this (point to passage) out loud.	Start timer When student says first word.
If you get stuck, I will tell you the word, so you can keep reading. When I say 'Stop' I may ask you to tell me about what you read, so do your best reading.	Prompts Student hesitates: wait 3 seconds; give correct word; mark the missed word as incorrect.
Start here (point to first word of first paragraph of passage). Ready? Begin.	Discontinue Student does not get any words correct within the first line: discontinue ORF.

/ = incorrect
] = end

Lucky Day

T1

WCPM:
 21

Bobby was on his way home from school one day. On his walk, he saw something green in the snow. He stopped and stared. He thought he was seeing things. Green in the snow? It couldn't be what it seemed to be, could it? (9) (19) (28) (38) (44)

T2

WCPM:

He bent down in the snow and quickly dug it out. It was a five - dollar bill. He carefully smoothed it flat. (55) (66)

T3

WCPM:

He wondered if it was real money or just play money. It looked real. That made him feel good. This was his lucky day. (76) (86) (90)

T4

WCPM:

But then he felt bad. He knew that if he ever lost five dollars he would cry and cry. Once, he had dropped a dime on the floor, and it had rolled into the heating vent. He never saw that dime again. (102) (112) (124) (132)

What was it like to lose fifty dimes at one time? Whoever lost the money was having an unlucky day. But this was Bobby's lucky day. He had no way to find the owner, so the money was his to keep. (143) (152) (163) (173)

Appendix B

Directions for Administration of DIBELS® DORF

Directions for Administration – Part 1: Oral Reading Fluency

1. Place the reading passage in front of the student.
2. Place the examiner copy on clipboard and position so that the student cannot see what you record.
3. Say these specific directions to the student:

Please read this (point) ***out loud. If you get stuck, I will tell you the word so you can keep reading. When I say, “stop” I may ask you to tell me about***

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what you read, so do your best reading. Start here (point to the first word of the passage). ***Begin.***

4. Start your stopwatch when the student says the first word of the passage. The title is not counted. If the student fails to say the first word after 3 seconds, tell them the word and mark it as incorrect, then start your stopwatch.
5. The maximum time for each word is 3 seconds. If the student does not provide the word within 3 seconds, say the word and mark the word as incorrect.
6. Follow along on the examiner copy of the probe. Put a slash (/) over words read incorrectly.
7. At the end of **1 minute**, place a bracket (]) after the last word provided by the student, stop and reset the stopwatch, and say

Stop. (remove the passage)

Appendix C

Fidelity Check List

Date:

Phase/ Trail:

Signature:

Features of Intervention		Observed	Unobserved
1	Researcher had materials ready (fluency passage, timer, and pencil).		
2	Researcher read instructions/expectations to participant.		
3	Researcher administered the fluency passage for one minute.		
4	Researcher calculated the amount of WCPM.		
5	Researcher and participant chorally read passage together.		
6	Time was used appropriately.		

Appendix D

Social Validity Questionnaire

Questions:		1	2	3	4
		Strongly disagree	Disagree	Agree	Strongly Agree
1	This treatment was effective				
2	I found this treatment acceptable for increasing the student's skills				
3	Using the treatment improved skills across multiple contexts (home, classroom, community)				
4	I think the student's skills would remain at an improved level even after the treatment ends				
5	This treatment quickly improved the student's skills				
6	I would be willing to carry out this treatment myself if I wanted to increase the student's skills				
7	I would suggest the use of this treatment to other individuals				