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Effectiveness of System 44® as an Intervention for Students with Learning Disabilities

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Abstract

Students with learning disabilities (LDs) generally perform well below grade level on national reading achievement assessments. Many students with LDs struggle in secondary settings due to challenges with reading, specifically their ability to decode text. Although researchers agree on the need to focus on word reading strategies for middle school students with LDs, there is not a consensus on the best method of intervention to improve reading achievement. Remedial instruction is needed to address phonics skills which are a focus of instruction in System 44® curriculum. The degree to which System 44® curriculum can improve decoding abilities for students with LDs is equivocal lacking peer-reviewed research. This study sought to address the gap in literature by providing System 44® small group lessons to six participants with LDs in the sixth grade. To determine if this intervention had a positive effect on decoding abilities, a single case AB design was used to evaluate a small group's accurate decoding of DIBLES® 3rd grade Oral Reading Fluency passages during baseline and intervention phases. Results did not indicate a functional relationship between intervention and accuracy in this study. This outcome demonstrates the continued need to find effective research backed phonics interventions for middle school students with LDs.

Keywords: learning disabilities, phonics instruction, remedial instruction, evidence based interventions, System 44®.

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Literature Review

In 2015, 63 percent of eighth grade students with disabilities performed well below grade level expectations (i.e., below the 25th percentile on National Assessment of Educational Progress; NAEP) on reading achievement tests; whereas 81 percent of students without disabilities were at or above the basic achievement level (U. S. Department of Education, Institute of Education Services, & National Assessment of Educational Progress, 2015). These statistics highlight the gap in reading achievement for those with and without learning disabilities (LDs) and indicates a greater need for differentiated reading instruction. Differentiated instruction does not take a one-size fits all approach; rather, interventions need to be implemented at the level of each individual student in order to meet the student's unique needs. This type of instruction is essential to help close the achievement gap in reading.

There are many preliminary skills needed before a student is capable of fluently reading and comprehending middle school text (Ehri et al., 2001; Torgesen et al., 2007). Students first must demonstrate the ability to consistently identify 44 isolated sounds and patterns, blend together these 44 sounds to form words, segment words into isolated sounds, and transfer these skills to the reading of words in connected text (Ehri et al., 2001; National Reading Panel, 2000; Stanovich, West, Cunningham, Cipielewski, & Siddiqui, 1996). Phonics instruction includes teaching letter to sound correspondence and word reading strategies associated with sounds. Phonics instruction has been shown to benefit students of all ages who are struggling to learn to read (National Reading Panel, 2000). Students in junior high are required to read text that contains grade level vocabulary, and many struggling readers are unable to decode these texts independently without having basic phonics skills (Nelson, Alexander, Williams, & Sudweeks,

2014). Therefore, students who have difficulty reading may need additional phonics instruction in order to access text with increasing complexity in middle schools.

Nelson and colleagues (2014) indicate that foundational word reading skills (i.e., phonics and phonemic awareness skills) should be obtained, as determined by common core standards, in early elementary grades (e.g., kindergarten – 3rd grade). In middle school, the expectation is that students are anticipated to demonstrate competency in foundational reading skills and are expected to participate in curriculum that addresses analytical reading standards. In addition, teachers in middle school typically expect students to independently use reading to learn (Deshler & Hock, 2007; Ehri et al., 2001). However, students who are struggling to achieve foundational reading standards and those who present with a LD often cannot meet these middle school expectations. These students often require remedial instruction of word reading strategies (e.g., instructional interventions at 1st-3rd grade levels) that will allow them to access the text at their grade level (Archer, Gleason, & Vachon, 2003; Edmonds et al., 2009; Ehri et al., 2001; Faggella-Luby & Deshler, 2008; Lyon et al., 2001; Stanovich et al., 1996; Torgesen et al., 2001). Given the evidence that many students with LDs are well below grade level in U.S. middle schools (U.S. Department of Education et al., 2015), there is a pertinent need to assess and implement targeted interventions that focus on word reading strategies.

Learning Disabilities

Students can be determined to have a LD if they have similar intellectual functioning as same age peers, but demonstrate significant difficulties in word reading, word meaning, spelling, written expression, number sense or mathematics (American Psychological Association, 2013; Scanlon, 2013). Therefore, students with LDs often have challenges in several aspects of reading including: reading comprehension, the reading of single words accurately and reading fluency

(American Psychological Association, 2013). Furthermore, the U.S. Department of Education (2016), found students with LDs make up 13% of all students in traditional public schools across the United States. Students with reading difficulties often display parallels to those having a LD due to the difference in intellectual functioning and achievement (Fletcher et al., 2001). Meaning, students with low achievement on reading assessments often qualify as having a specific LD as there is a discrepancy between reading ability and intellectual functioning.

Of those diagnosed with LDs, nearly 80 percent demonstrate challenges with reading as compared to other academic areas (Lyon et al., 2001). Furthermore, challenges in reading can negatively impact achievement in all subject areas as reading is essential to learning, especially in the upper grades (Archer et al., 2003; Deshler & Hock, 2007; Ehri et al., 2001). In the early elementary years, students learn to read, but beginning in fourth grade, students read to learn (Lyon et al., 2001). To assure these students do not fall behind, many begin to receive special education services to close the gap in reading achievement. However, many of these students do not make more than a year of growth and therefore the achievement gap does not close (Torgesen et al., 2007). Acknowledging that many students who are in special education classrooms have LDs, it is imperative to identify what strategies to employ to best address these difficulties. Cornerstones of foundational skills needed to improve comprehension and overall reading ability including phonemic awareness and phonics skills.

Phonics and Phonemic Awareness for Learning Disabilities

Systematic phonics instruction has a greater positive impact on reading development than other types of programs (National Reading Panel, 2000). Developing the skills needed to allow students to access text and comprehend what they are reading is often the end goal of foundational reading instruction. Students with extensive practice in word recognition and high

levels of vocabulary knowledge have been strongly correlated with higher comprehension (Stanovich et al., 1996). In addition, Ehri and colleagues (2001) found that phonemic awareness instruction had a moderate, statistically significant, impact on word reading as well as reading comprehension. Furthermore, phonemic awareness has been identified as the primary predictor of future reading success (Ehri et al., 2001; Torgesen et al., 2007). Decoding abilities, which are needed for reading (Gough, & Tunmer, 1986), pertain to the ability to identify words usually by using a letter or combination of letters and their sounds (Aarnoutse, Van Leeuwe, Voeten, & Oud, 2001). One of the greatest limitations to reading achievement is errors in accurate decoding due to guessing rather than the use of phonemic analysis (i.e., phonics) skills to identify words (Torgesen et al., 2007). However, phonemic awareness and phonics skills are typically only taught at younger grades and by the time students reach the sixth grade, they are expected to have mastery over these skills.

Much of the reading instruction in sixth grade general education curriculum is focused on determining meaning and analyzing what is read (California Department of Education, 2013). To be a successful reader who can comprehend and analyze text, students need the phonics, phonemic awareness and decoding skills to access text (Deshler & Hock, 2007; Ehri et al., 2001). Most students with LDs lack grade level reading skills to access text presented in sixth grade general education settings (Lyon et al., 2001). Special educators and Individualized Education Plan (IEP) teams are required to assess and identify academic areas and skills in need of intervention and supports the student needs to achieve them. The IEP team generally consists of parents, administration, special and general educators all of whom work with the student and are responsible for reviewing the student's current academic achievement and progress toward goals. In addition, the team is responsible for choosing the setting where the student will receive

individualized instruction. Furthermore, the IEP team determines goals that require interventions to address the student's specific areas of need and this may include areas not addressed in grade level curriculum (Gartin & Murdick, 2005). For example, word recognition skills are often assumed to have been developed by the time students get to middle school, but in many cases, struggling adolescent readers continue to require instruction that addresses word reading strategies (Faggella & Deshler, 2008). Therefore, word recognition skills may be a below grade level area that is focused on as a part of the student's IEP.

The National Reading Panel (NRP) found that systematic phonics instruction could result in significant improvement for many students (NRP, 2000; Stuebing, Cirino, Francis, & Fletcher, 2008). Faggella and Deshler (2008) found investment in studying the benefits of programs specializing in phonics and phonemic awareness instruction for younger students to be routine. This is due to the need for students to be able to use sounds of word parts to help identify words that are unfamiliar (Ehri et al., 2001). However, there is a lack of research looking at effective practices for reading instruction in older students and even less evidence to support decisions on the types of curriculum, interventions and instruction that benefit students with LDs (Faggella-Luby & Deshler, 2008). Students with LDs in middle school, who have yet to master phonics skills will need remedial instruction based in research to attain foundational reading skills that will allow them to access higher level text.

Remedial instruction.

Remedial instruction means providing students interventions and instruction addressing the areas of need that should have attained previously. Using phonics to decode novel words is a key foundational skill that should be attained by middle school. Phonics instruction with students grades 2-6 still has the ability to improve word reading strategies (National Reading Panel,

2000). To make improvements, the selected intervention needs to be at the student's level of functioning and address the specific areas of need. Lyon and colleagues (2013) indicated that many students are identified as having a LD and reading difficulty around the ages of 9-10. This can be caused by students not receiving intensive remedial reading interventions that could have effectively addressed and/or corrected the deficit area. Archer and colleagues (2003) stress the need for research based intensive interventions that are well designed and give direct systematic practice in reading for the area of need. An area of need that students with LDs often demonstrate having difficulty with is decoding skills (using phonics to identify printed words).

Decoding skills are typically taught in elementary grades as a preliminary skill needed to be successful in reading (Edmonds et. al., 2009; Faggella & Deshler, 2008; National Reading Panel, 2000; Torgesen et al., 2001; Wise et al., 2000). Decoding skills include the ability to identify the structure and ability to identify and pronounce words. Decoding skills are needed for reading due to the fact that printed words need to be converted to language in order to be understood (Gough & Tunmer, 1986). Archer and colleges (2003) determined decoding skills to be one of the most critical skills needed for comprehension and vocabulary attainment. Furthermore, deficits in decoding are most often found as the cause of reading disabilities (Fletcher et al., 2001). Furthermore, students in middle school often require the skills of decoding, reading comprehension and higher level vocabulary to be able to access curriculum in content areas that are dependent on individual reading. Wise and colleagues (2000) indicated that improving the phonological skills of students with deficits should be an aim of remedial reading interventions.

Students with disabilities in secondary education may also need remedial instruction since research indicates that students with reading difficulties and disabilities can improve

comprehension when provided with a targeted reading intervention in word reading strategies (Edmonds et al., 2009). Working on word reading strategies, often addressed in early elementary (CDE, 2013), can provide positive outcomes for students in sixth to twelfth grades. Similarly, students in the later elementary grades (3rd through 5th) with severe reading disabilities, made significant progress when given one to one instruction focused on phonemic awareness and phonemic decoding skills (Torgesen et al., 2001). Thus, it follows that skills often focused on in first through third grades (i.e., letter sound correspondence, decoding skills, etc.; CDE, 2013), can be taught to older students in order to improve the reading level of students with LDs in grades three through twelve. Students still performing at very low reading achievement levels, as determined through assessment, will continue to struggle with higher level reading skills (i.e., comprehension, text analysis) unless foundational reading skills are addressed through research based interventions in their areas of need.

Even those without LDs in secondary education have been found to read at a 2.5 to 5.0 grade level, possibly indicating a greater need for remedial interventions (Archer et al., 2003). Many students require practice using methods to decode longer more complex words, likely to occur in secondary education, to improve comprehension (Archer et al., 2003). By addressing phonological skills students should not only improve reading levels, but begin to master an integral step in the reading process. Thus, allowing them to develop more automaticity and fluency (Wise et al., 2000), which is needed for students with and without LDs in secondary education settings. Selecting appropriate interventions to address remedial needs of students with LDs is required of special education teachers (IDEA, 2004). There are interventions created for use in middle school settings that aim to address and improve reading skills that have yet to be mastered.

Students in special education with LDs often need remedial instruction in foundational reading skills to assist with learning to read text independently and accurately. When selecting the appropriate intervention, it is necessary to assure that the intervention addresses the needs of the population it is intended to serve. Furthermore, when selecting a reading intervention for struggling readers with LDs there should be evidence through peer-reviewed scientific studies that confirm that the intervention of choice in phonics instruction will be of benefit (Franzak, 2006).

Evidence Based Interventions

Educators are faced with the challenge of ensuring they are implementing research based interventions, especially in special education. The Individuals with Disabilities Improvement Act (IDEA; 2004), requires special education teams to use peer researched and reviewed programs when addressing the educational needs of students with disabilities. This mandate is in response to the adoption of programs and curriculum that were not effective (Yell, Shriner, & Katsiyannis, 2006). Evidence based interventions allow educators to implement instructive practices with efficacy and achieve the desired outcomes. As found in the No Child Left Behind Act, one method of determining if instructional procedures are effective and valid is to assure procedures are based on scientifically rigorous research (Yell et al., 2006). Thus, interventions or curriculum need to be objectively and thoroughly tested in a systematic manner and produce significant results that are confirmed to meet these standards by government institutions and/or fellow researchers.

The federal Department of Education created supports that would allow educators to determine if interventions have been peer-reviewed or scientifically proven for specific age groups, individuals with disabilities, or by subject matter (Etscheidt & Curran, 2010). One of the

tools provided is the website, What Works Clearinghouse (WWC), created by the Institute of Education Sciences that set criteria for research studies to meet, in order for the interventions or curriculum studied to be considered research based (Etscheidt & Curran, 2010). The criteria set forth by the WWC are stringent and encourage the use of quantitative studies, although more single case design studies are being utilized. One such intervention reviewed by the WWC is the reading program, READ 180®.

READ 180® Intervention

Research indicates that READ 180® and System 44® are research based interventions that provide instruction on remedial skills in comprehension and phonics that many students struggle with (HMH, 2017c; Kim et al., 2011; Scholastic, 2014; Stanovich et al., 1986; Wagner, 2011). This peer-reviewed research has demonstrated a positive effect of READ 180® curriculum on the reading levels of general education students in middle school settings, who demonstrate below average reading achievement (HMH, 2017c; Kim et al., 2011). Key components of the curriculum include the use of student specific curriculum, small group instruction, and an independent computer application that intervene at the student's instructional level (HMH, 2017c). This has led to its use with adolescents in the classroom despite the high costs to get the program started (U.S. Department of Education & Institute of Education Sciences, 2016). However, the high cost can be prohibitive, and some administrators are resistant to implement this reading intervention without assurances from reading specialists that the program will produce positive outcomes for students.

Independent research has recommended the READ 180® curriculum as a reading intervention to address the needs of students with LDs that are behind grade level in reading (HMH, 2017b, 2017c). The WWC found the READ 180® curriculum to have peer-reviewed

research studies that demonstrated a positive impact on comprehension and literacy achievement (Kim, Samson, Fitzgerald, & Hartry, 2010).

Kim and colleagues (2011) completed research using afterschool participants that resulted in a significantly higher posttest score for students who participated in the READ 180® intervention than those who were in the regular after school program. They determined that READ 180® was most effective with students functioning in the 40th to 45th percentiles as compared to same aged peers. Further research is needed to determine if students in the 25th and below percentiles would benefit from this type of instruction. Maurer (2017), through master's research, found that students with LDs made significantly more growth on reading skills such as, comprehension and analysis of text, using READ 180® than curriculum used in general education classrooms. The effectiveness of the READ 180® curriculum for students with LDs, demonstrating well below grade level phonics skills, is inconclusive and additional studies need to be implemented (USDE & IES, 2016).

In addition to the READ 180® curricula, System 44 is often used in conjunction with READ 180® for struggling readers as the curriculum mostly focuses on phonics skills. The degree to which System 44® curriculum should accompany READ 180® for students needing remediation in phonics skills lacks efficacy or peer-reviewed research (U.S. Department of Education & Institute of Education Sciences, 2016). System 44® referenced peer-reviewed research that indicates addressing phonics, which is a key foundational skill, has been proven most effective in improving decoding skills and reading achievement (Stanovich, Nathan, & Vala-Rossi, 1986) and decoding abilities were found to be strongly related to higher reading achievement. System 44® curriculum should be a helpful addition to READ 180® if implemented with students that have been identified to read in the first through third grade levels and are

lacking phonics skills often common for students with LDs (Lyon et al., 2001). This is due to the greater focus and instructional time spent on phonics in System 44® as opposed to READ 180®. Many students who struggle with learning to read may benefit from the System 44® curriculum; however, there is little empirical evidence regarding the effectiveness of this program for middle school students with LDs.

READ 180® focuses on reading comprehension and analysis of text through student leveled text (HMH, 2007b). According to Deshler & Hock (2007), readers need to acquire the skills of word recognition in order to achieve reading comprehension and the focus on comprehension. READ 180® does not devote as much intensive instruction to the foundational area of phonics as System 44®, which has been proven to be a precursor to and improve comprehension leading to better academic achievement (HMH, 2017c; Scholastic, 2014; Stanovich et al., 1986;). If an adolescent student does not have word reading strategies, a curricular intervention that focuses on or incorporates word recognition instruction should be implemented to set a foundation to build upon (Faggella & Deshler, 2008). Further suggestions by Edmonds et. al. (2009) included measuring the impact of interventions through growth that aligns students' needs with intervention. If students demonstrate a need in phonics, research based interventions, such as System 44® may make a beneficial addition (HMH, 2017a).

System 44®

System 44®, which focuses on phonics skills and word reading strategies (Scholastic, 2014), can be applied in place of READ 180® in small group lessons and may be effective with students who have LDs and demonstrate difficulties with foundational reading skills. Decoding skills and vocabulary may have the greatest impact on the poor reading ability of students with LDs and can improve but require instructional resources be used to address their needs

(Stanovich et al., 1986). Knowing this, System 44®, a reading intervention that focusses on the use of all 44 sounds in the English language and is designed for struggling readers (Scholastic, 2014), should be an appropriate intervention for a majority of students with LDs. System 44® provides systematic instruction of foundational reading skills (HMH, 2017c), which are often addressed as standards achieved in kindergarten through second grade (CDE, 2013). Specifically, students work on phonics, word reading strategies, sight words, and writing using differentiated instruction at their levels as determined through ongoing curriculum based assessment and alignment with individual work (Scholastic, 2014). Research on systematic phonics instruction has been found to be beneficial for adolescent students struggling to read (Archer et al., 2003; Edmonds et al., 2009; Ehri et al., 2001; Faggella-Luby & Deshler, 2008; National Reading Panel, 2000 Lyon et al., 2001; Torgesen et al., 2001; Wise et al., 2000). Also, work within a student's individual instructional level should be of focus when determining remedial interventions, such as System 44® (Archer et al., 2003; Fletcher et al., 2001; Scholastic, 2014; Stanovich et al., 1996; Wise et al., 2000). Additional data is needed to determine if instruction using System 44® curriculum, which focuses on phonemic awareness and phonics instruction, will have a positive effect on the phonics skills of students with LDs in middle school who are performing well below grade level.

Methods

Purpose

Many studies found that instruction in phonics and phonemic awareness benefits the reading achievement of kindergarten through third grade students (Archer et al., 2003; Edmonds et al., 2009; Ehri et al., 2001; Torgesen et al., 2001). The goal of the present research is to examine the effectiveness of remedial instruction in foundational reading skills, using System

44® phonics instruction, for 6th grade students with LDs. Houghton Mifflin Harcourt (2017c) indicates that students with disabilities can make a year's worth of growth or more and that READ 180® leads toward proficiency in reading. However, there is a lack of peer-reviewed research on READ 180® curriculum, more specifically, System 44®, for students with LDs who are preforming well below average (below the 2nd percentile) on reading achievement tests (Kim et al., 2011).

Research Question

Does the use of System 44® curriculum in small group lessons result in improved accuracy scores on DIBLES® 3rd grade Oral Reading Fluency (ORF) passages by 6th grade students with LDs, performing well below grade level in reading achievement?

Hypothesis

Based on prior research, it was hypothesized that the use of System 44® curriculum, given through small group instruction and that addresses phonics skill development and teaches word reading strategies, would have a positive effect on the accurate decoding of text by students with LDs in secondary grades (Edmonds et al., 2009; Faggella & Deshler, 2008; National Reading Panel, 2000; Torgesen et al., 2001; Wise et al., 2000).

Research Design

This study was conducted using a single-case AB design with six participants. This design was used in order to monitor individual progress across the baseline (i.e., phase A) and intervention (i.e., phase B). Baseline data was individually collected during the same 20 minute reading periods for all six students. Students moved into the intervention phase once a minimum of five stabile baseline data points were achieved. Stability was defined when baseline points did not show significant differences in accuracy, in a positive or negative direction of more than

20%, over at least five sampling periods. Once stability was achieved, intervention lessons and measures began. A minimum of five data points moving in a therapeutic direction or a completion of lessons after 18 days of intervention were required before the intervention phase was terminated.

Independent variable. The independent variable was the System 44® curriculum that was provided daily in small group lessons to target student needs in phonics skills. Lessons selected mirrored the level at which students were at as determined by their progress on mastering skills on their independent computer application of System 44®.

Dependent variable. The dependent variable in this study was the participant's phonics skill level. Student accuracy scores on 3rd grade DIBLES® ORF passages were used to measure each student's phonetic decoding skills (Good & Kaminski, 2002a) serving as the dependent variable (see Appendices A & B).

Setting & Participants

Participants were students in a 6/7th grade mild/moderate self-contained special day class classroom within a public school. The school the participants attend was 96.3 percent Hispanic or Latino, 90.4 percent were considered to be economically disadvantaged and 15.2 percent of students had disabilities. (California Department of Education, 2017a). The six students selected were a convenience sample due to their presence within the researcher's classroom. This was also a purposeful sample in that all participants met the following criteria: diagnosed with a LD, in sixth grade, were determined to be a pre-decoder or beginning decoder, and all had access to the curriculum used as a reading intervention. All students who scored in the pre-decoder to beginning decoder range were determined to receive tier three interventions that are provided in System 44® (Wagner, 2011). Each student was performing at less than or equal to the first grade

level and below the 25th percentile according to Houghton Mifflin Harcourt (2017a) , when assessed with the Scholastic Phonics Inventory (SPI). All six students were 11-12 years of age, in the sixth grade, and of Hispanic ethnicity. There were five boys and one girl. Each participant was given a pseudonym in order to protect their privacy and assure anonymity.

Adam. Was a male student with a specific LD. He was in sixth grade, 12 years old and of Hispanic/Latino ethnicity. Scored at a 1.1 grade equivalent and below the 1st percentile of same aged peers on the most recent Letter-word Identification sub test on the Woodcock Johnson Tests of Achievement IV taken 12/18/2017. On the most recent SPI, taken on 2/20/2018, he scored a 1. This meant according to the SPI he was considered a beginning decoder and Foundational Phonics instruction was recommended.

Amy. Was a female student with a specific LD. She was in sixth grade, 12 years old and of Hispanic/Latino ethnicity. Scored at a K.6 grade equivalent and below the 1st percentile of same aged peers on the most recent Letter-word Identification sub test on the Woodcock Johnson Tests of Achievement IV taken 01/26/2017. On the most recent SPI, taken on 2/20/2018, she scored a 1. This meant according to the SPI she was considered a beginning decoder and Foundational Phonics instruction was recommended.

Derek. Was a male student with a specific LD. He was in sixth grade, 11 years old and of Hispanic/Latino ethnicity. Scored at a K.8 grade equivalent and below the 1st percentile of same aged peers on the most recent Letter-word Identification sub test on the Woodcock Johnson Tests of Achievement IV taken 03/17/2017. On the most recent SPI, taken on 2/20/2018, he scored a 7. This meant according to the SPI he was considered a beginning decoder and Foundational Phonics instruction was recommended.

Frank. Was a male student with a traumatic brain injury. He was in sixth grade, 12 years old and of Hispanic/Latino ethnicity. Scored at a K.6 grade equivalent and below the 1st percentile of same aged peers on the most recent Letter-word Identification sub test on the Woodcock Johnson Tests of Achievement IV taken 11/28/2016. On the most recent SPI, taken on 2/20/2018, he scored a 1. This meant according to the SPI was considered a beginning decoder and Foundational Phonics instruction was recommended.

Martin. Was a male student with a LD. He was in sixth grade, 11 years old and of Hispanic/Latino ethnicity. Scored at a K.6 grade equivalent and below the 1st percentile of same aged peers on the most recent Letter-word Identification sub test on the Woodcock Johnson Tests of Achievement IV taken 10/07/2015. On the most recent SPI, taken on 2/20/2018, he scored a 6. This meant according to the SPI he was considered a beginning decoder and Foundational Phonics instruction was recommended.

Zander. Was a male student with a specific LD. He was in sixth grade, 11 years old and of Hispanic/Latino ethnicity. Scored at a 1.2 grade equivalent and below the 1st percentile out of same aged peers on the most recent Letter-word Identification sub test on the Woodcock Johnson Tests of Achievement IV taken 12/14 2017. On the most recent SPI, taken on 2/20/2018, he scored a 9. This meant according to the SPI he was considered a beginning decoder and Foundational Phonics instruction was recommended.

Measure

To measure growth in phonics skills, the participants read DIBLES® 3rd grade ORF passages (see Appendices A & B) and accuracy scores were recorded as a curriculum based measure. DIBLES® 3rd grade ORF passages are standardized individually administered tests that are used to measure accuracy in decoding and phonological fluency (Good & Kaminski, 2002a).

Passages were read aloud by students to a researcher and words misread tracked to determine their percentage of words read accurately for one minute. By giving this assessment the researcher was able to assess developmental levels/skills students should work on, and to monitor progress (Good & Kaminski, 2002a). The administration of DIBLES® 3rd grade ORF passages was done with fidelity following steps 1-13 (see Appendix C) without using the words correct per minute or retell fluency portions of the assessment. Accuracy of words read was be considered the best measure of phonics skills for this population and can be used to monitor progress towards instructional goals (Good & Kaminski, 2002a).

Validity. The degree to which DIBLES® ORF passages measure accuracy and fluency was determined to be substantial through a multiple studies on curriculum based measures (Good & Kaminski, 2002a). To substantiate criterion validity of DIBLES® ORF passages eight studies were conducted which found coefficients ranging from .52- .91 (Good & Jefferson, 1998) and referenced in the administration and scoring guide (Good & Kaminski, 2002a).

Reliability. The test-retest reliability on DIBLES® ORF passages was in the range of .92 - .97. The use of different forms within the same reading level had an alternate-form reliability of .89 - .94 (Good & Kaminski, 2002a). Although, passages vary in difficulty they are within a range that will be consistent and a good measure of students phonics skills (Good & Kaminski, 2002a; 2002b). DIBLES® ORF passages are a widely used measurement that will effectively and consistently measure word accuracy to assess phonics skills.

Intervention

The System 44® curriculum given in small group lessons was used as the independent variable. Components of System 44® curriculum involves starting with whole group instruction, then having students rotate between three stations where they will: use a computer application,

read leveled books at their independent reading level, and receive small group instruction that is directed towards their areas of need as assessed by the SPI and current progress on their application. Students finish each instructional period by participating in a whole group wrap up. Students receive 90 minutes of instruction through this model and spend 20 minutes in whole group instruction, 20 minutes in each rotation followed by a whole group wrap up of 10 minutes.

In the intervention of small group instruction using System 44® curriculum was the independent variable and only part of the rotation changed. The researcher selected lessons recommended due to the students' areas of need, as found by the SPI and current level/progress on independent computer based application. Lessons were obtained from System 44® curriculum textbook titled *Resources for Differentiated Instruction* (Scholastic, 2014). Detailed instructions to provide specific instruction on phonics and word reading strategies accompanied each lesson (Scholastic, 2014) and were followed. The intervention of using the System 44® curriculum in small group, was used only with the six study participants.

The student application of System 44® focused on the use of all 44 sounds in the English language. Students independently worked on the code, word reading strategies, sight words and writing using differentiated instruction in their phonics skills during this rotation (Scholastic, 2014).

During independent reading rotation, students received a choice of books at their Lexile level as determined by the Scholastic Reading Inventory (HMH, 2017a). Books chosen had key phonics skills of focus, initial vocabulary words with definitions and comprehension questions along the way. After reading a book students would take a comprehension test on their computers and were asked ten comprehension questions to determine their understanding of the

text. Additionally students completed an individually administered 3rd grade DIBLES® ORF passage curriculum based measure (the dependent variable).

Procedures

The READ 180® curriculum is the suggested intervention for students in middle school (HMH, 2017c). During baseline measurements, students used suggested curriculum of the READ 180® text book and curriculum when in small group. During this baseline phase participants completed an individually administered 3rd grade DIBLES® ORF passage curriculum based measure every day a week, while at their independent reading station. Students participated in the components of the curriculum mentioned until five stable baseline measures were obtained using 3rd grade DIBLES® ORF passages.

The independent variable of small group instruction, in foundational reading skills, using Scholastic's System 44® curriculum was applied as the intervention. Students then used the System 44® textbook and curriculum that includes explicit phonics instruction in small group lessons (Scholastic, 2014; Wagner, 2011). Lessons were selected for students as recommended by Scholastic (2014) to meet their needs. There is no formula for or lesson progression that is to be followed. To determine lessons to provide for the whole group, the mean level at which students were performing at on their individual computer application was used to select matching lessons. The Scholastic (2014) System 44® curriculum has lessons that correlate with the levels on students' independent computer application. All students selected for the intervention are at similar levels and were determined by the SPI to need explicit phonics instruction (Wagner, 2011).

During the intervention phase participants completed an individually administered 3rd grade DIBLES® ORF passage curriculum based measure every day a week, while at their

independent reading station. The measure was administered as recommended by the fidelity checklist (see Appendix C). A minimum of five data points moving in a therapeutic direction or a completion of lessons after 18 days of intervention were required before the intervention phase was terminated. In this study the intervention was given for the whole 18 days until students ended the quarter and began a gap in the intervention due to a break in the academic calendar.

Data collection.

Data was collected every instructional day using individually administered 3rd grade DIBLES® ORF passages during the baseline measure. Students continued the baseline phase of the study until a minimum of five stable baseline measures had been obtained. Students then received the intervention of small group instruction of foundational reading skills using Scholastic's System 44® curriculum. Students were individually administered a 3rd grade DIBLES® ORF passages every day during their independent reading rotation by a trained researcher (Instructional Aid present in the classroom). Data collected assisted in identification of materials to use (i.e., lessons on specific letter sounds, level of work given), as well as monitoring the participants progress/growth (Hudson, Lane, & Pullen, 2005; Good, Simmons, & Kame'enui, 2001).

Fidelity

Adhering to a procedural design leads to a stronger association between the intervention and outcomes of a study (Horner, Rew, &Torres, 2006). To assure that the baseline and intervention variables were continuous and uninterrupted, an instructional aid was be present to manage the classroom environment and mitigate any unforeseen interruptions to small group instruction 100 percent of the time. The use of independent reading time was used in both the

baseline and intervention every day, to measure outcomes assuring that there was no change in the instructional program except for the intervention.

Instruction in small groups was provided to the single group of participants from each curriculum during the baseline and intervention periods. As Horner and colleagues (2006) explained, the fewer groups receiving the intervention and the less complex the design the easier it is to maintain fidelity. Intervention and baseline small group lessons both lasted 20 minutes and were timed to assure the time that the intervention and baseline instruction were given was equal. To additionally assure an instructional aid was present 100 percent of the time to ensure the treatment given by the researcher was in fixed and consistent intervals and additional resources were not used. The administration of the 3rd grade DIBLES® ORF passages every day was monitored using the fidelity checklist to assure the procedures are followed with fidelity (See Appendix C).

Social Validity

At the completion of the study, six participants 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 nine questions designed to understand the perceived usefulness, significance and satisfaction with the implemented intervention (Kennedy, 2005). Participants agreed that the lessons were effective scoring an average as a group of 3.16 on question 1 (see Appendix D). Participants also agreed the curriculum was acceptable for increasing reading skills as demonstrated by and average group score of 3.5 on question 2 (see Appendix D). Participants had agreement in all responses except that the treatment improved family functioning. Responses and descriptive statistics were conducted to gain insights regarding the perceived effect of the intervention by participants and

participants desire to continue the intervention.

Ethical Considerations

Participants within this study received an intervention that provided instruction to address phonics skills, word reading strategies, sight words and comprehension (Scholastic, 2014). This focus was on standards that fall well below 6th grade level standards (CDE, 2013). Without the intervention, students would have been participating in curriculum that focused on grade level standards that are well above the level dictated by their IEP. To address this ethical concern, as addressed by the IEPs of all participants, the instruction provided by the intervention targeted the skill level that addressed their personal goals in decoding skills that were agreed upon by the IEP team and approved by the parents of participants. Specific instruction in the phonics skills areas addressed with the intervention have been found to have a positive impact on overall word reading skills and growth (Edmonds et. al., 2009; Faggella & Deshler, 2008; National Reading Panel, 2000; Torgesen et al., 2001; Wise et al., 2000)

Another ethical consideration for this study was that students did not receive the opportunity to access curriculum with non-disabled or higher functioning peers. This could have potentially had a negative effect on their growth. Peterson and Hittie (2010) found peer-reviewed evidence that students that have mild disabilities can make better academic, social and behavioral gains in general education settings then in a pullout program. Although, the students in this study had already been determined by an IEP team to be placed in the special day class setting, so the intervention should not have changed the level of interaction they would have received in inclusive classrooms. The intervention's focus on skills that will allow them to access higher level curriculum has been determined to outweigh this risk. Wise and colleagues (2000) have found that improving the phonological skills of students with deficits should be an aim of

remedial reading interventions. Also students were able to communicate and interact with peers during the whole group portions of the curriculum and had opportunities during their break, lunch and physical education class to interact with non-disabled peers.

Validity threats

Threats to the validity of a study include: external influences, maturation of the participants, selection differences and attrition (Horner et al., 2006). Many steps in the proposed study have been taken to assure these factors had little effect on the outcome though a few were not be able to be controlled by the design of this study. To address differences in selection and bias, students were be selected due to their performance on a curriculum based measure in which they were grouped by achievement at or below the pre to beginning decoding classification. Age range of participants of within a year, similar ethnicity and disabilities were selected. The classroom setting consistently followed the same design and progression between stations throughout the baseline and intervention phases.

Uncontrolled threats to this design included the impact of outside influences or instruction on their reading ability. Some participants attitudes towards reading and the interventions used may have changed during the intervention due to social influences or multiple days of school in a row. Other participants may have participated in more outside reading and received supports that are unaccounted for outside the classroom setting. Students attendance may have impacted the frequency of the received intervention within their small group and attendance was recorded to assure treatment was given in equivalent amounts. Additionally, the setting was within a controlled, but dynamic Special day classroom where behaviors of other students may have led to distractions or possible disruption of interventions or measures. To assure that the intervention was as uninterrupted as possible, a classroom aid will be available to

manage other students and stations during the intervention and teacher was monitoring classroom behavior during the measures.

Data Analyses

To assess the effect of the intervention, visual inspection of graphed data was used. This involved plotting data from the outcomes of the baseline variable on graphs to be able to visually determine if it was stable. Stability was determined to be present after 7 sampling periods when baseline points did not show significant differences, positive or negative, over the at least five sampling periods for all participants. The outcome of the accuracy scores on 3rd grade DIBLES® ORF passages during intervention was also be graphed. The range that scores fell within were compared to determine if growth occurred. Also, determining that data points overlap between baseline and intervention means there was no increase in accuracy between phases. This will allow a judgment on whether the independent variable (small group instruction using) influenced the dependent variable (accuracy scores on 3rd grade DIBLES® ORF passages).

Results

All participant's scores on each 3rd grade DIBLES® ORF passage were recorded and graphed to demonstrate any trends in the data. Each participant's percentage of words correct (accuracy) on their 3rd grade DIBLES® ORF passage is recorded on the y-axis and the number of attempts completed shown on the x-axis (see Figures 1-6).

Adam's performance on 3rd grade DIBLES® ORF passages during baseline ranged from 75 to 81 percent accuracy with a mean of 79 percent accuracy on words read within a minute. During the intervention phase his performance on 3rd grade DIBLES® ORF passages ranged from 62 to 80 percent accuracy with a mean of 72 percent on words read within a minute (see Figure 1).

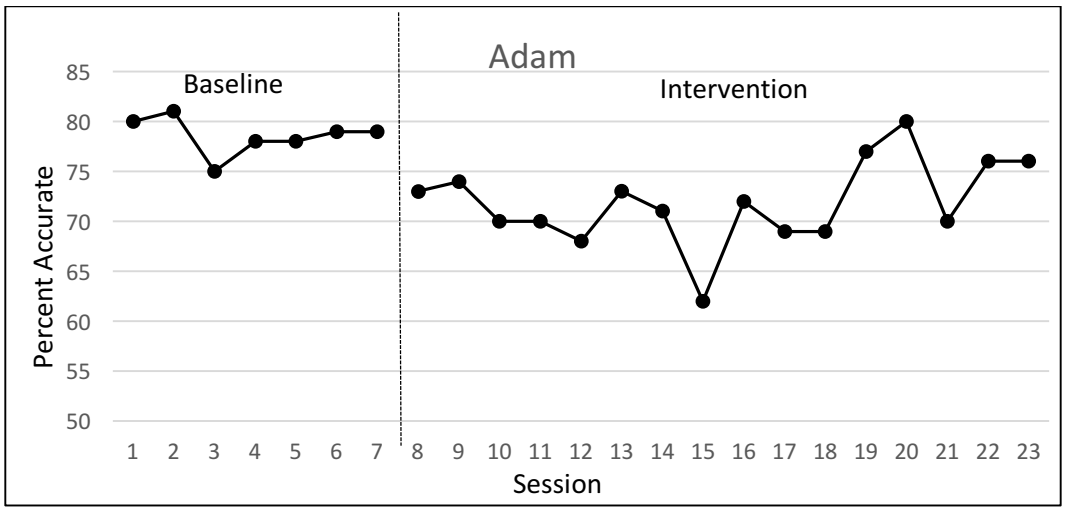

Figure 1. The graph represents the percent of words read accurately by Adam on 3rd grade DIBLES® ORF passages in baseline and intervention.

Amy's performance on 3rd grade DIBLES® ORF passages during baseline ranged from 67 to 84 percent accuracy with a mean of 79 percent on words read within a minute. During the intervention phase her performance on 3rd grade DIBLES® ORF passages ranged from 59 to 82 percent accuracy with a mean of 72 percent on words read within a minute.

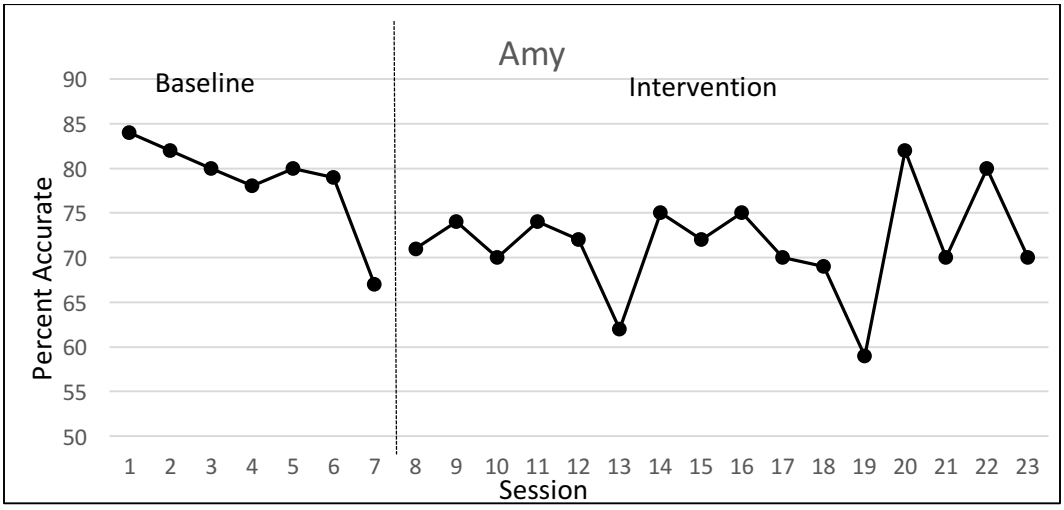

Figure 2. The graph represents the percent of words read accurately by Amy on 3rd grade DIBLES® ORF passages in baseline and intervention.

Derek's performance on 3rd grade DIBLES® ORF passages during baseline ranged from 75 to 90 percent accuracy with a mean of 84 percent on words read within a minute. During the intervention phase his performance on 3rd grade DIBLES® ORF passages ranged from 72 to 95 percent accuracy with a mean of 80 percent on words read within a minute.

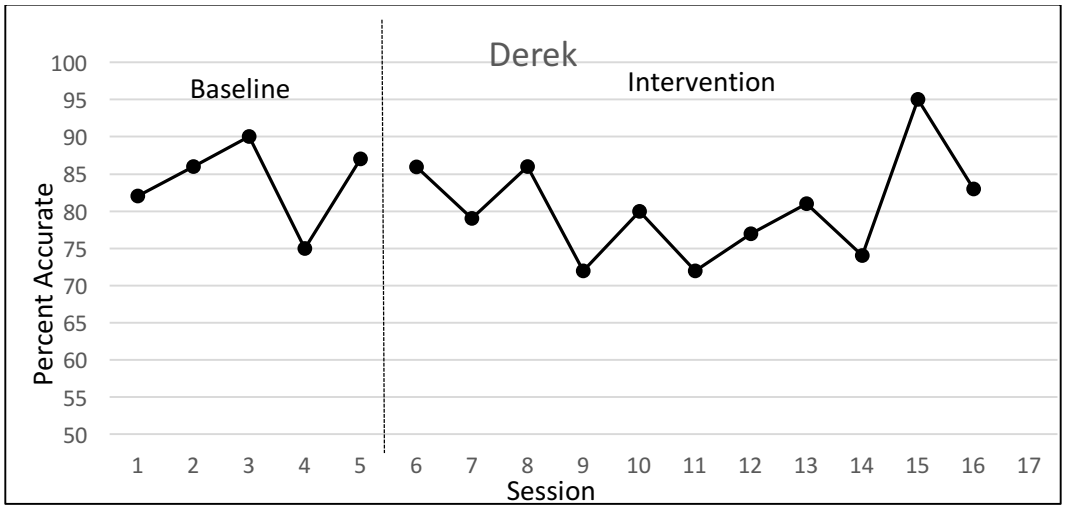

Figure 3. The graph represents the percent of words read accurately by Derek on 3rd grade DIBLES® ORF passages in baseline and intervention.

Frank's performance on 3rd grade DIBLES® ORF passages during baseline ranged from 71 to 82 percent accuracy with a mean of 75 percent on words read within a minute. During the intervention phase his performance on 3rd grade DIBLES® ORF passages ranged from 43 to 75 percent accuracy with a mean of 66 percent on words read within a minute.

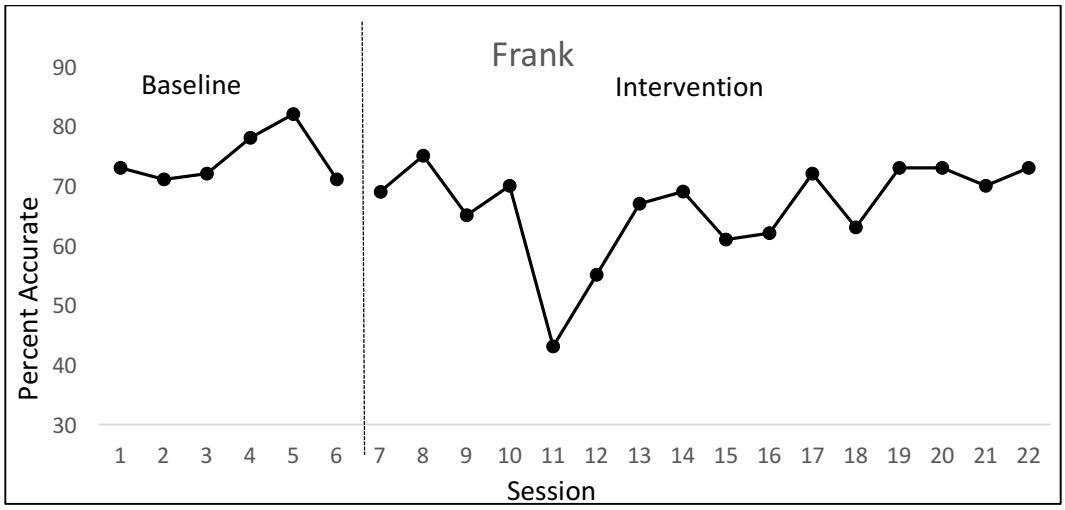

Figure 4. The graph represents the percent of words read accurately by Frank on 3rd grade DIBLES® ORF passages in baseline and intervention.

Martin's performance on 3rd grade DIBLES® ORF passages during baseline ranged from 82 to 91 percent accuracy with a mean of 87 percent on words read within a minute. During the intervention phase his performance on 3rd grade DIBLES® ORF passages ranged from 78 to 94 percent accuracy with a mean of 85 percent on words read within a minute.

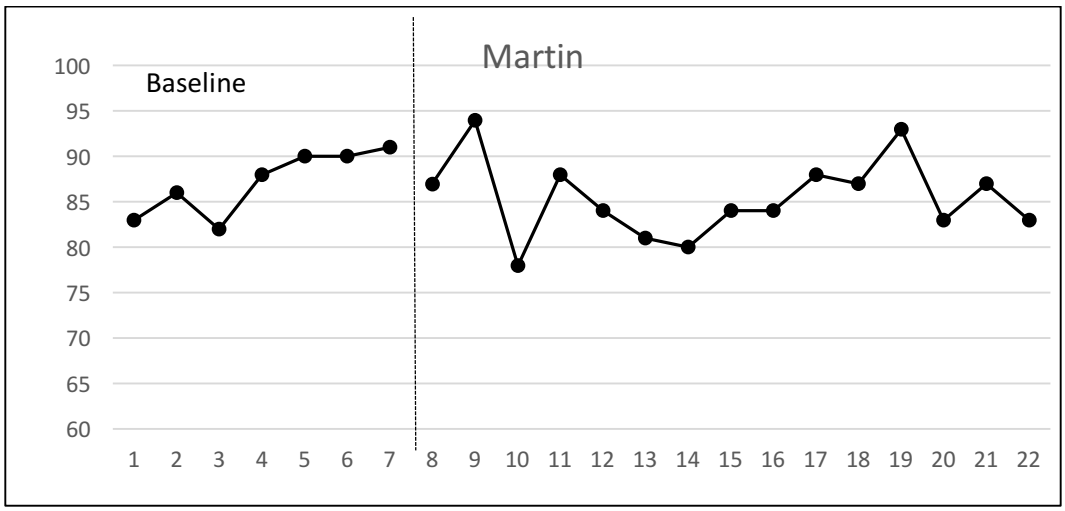

Figure 5. The graph represents the percent of words read accurately by Martin on 3rd grade DIBLES® ORF passages in baseline and intervention.

Zander's performance on 3rd grade DIBLES® ORF passages during baseline ranged from 68 to 80 percent accuracy with a mean of 76 percent on words read within a minute. During intervention phase his performance on 3rd grade DIBLES® ORF passages ranged from 57 to79 percent accuracy with a mean of 69 percent on words read within a minute.

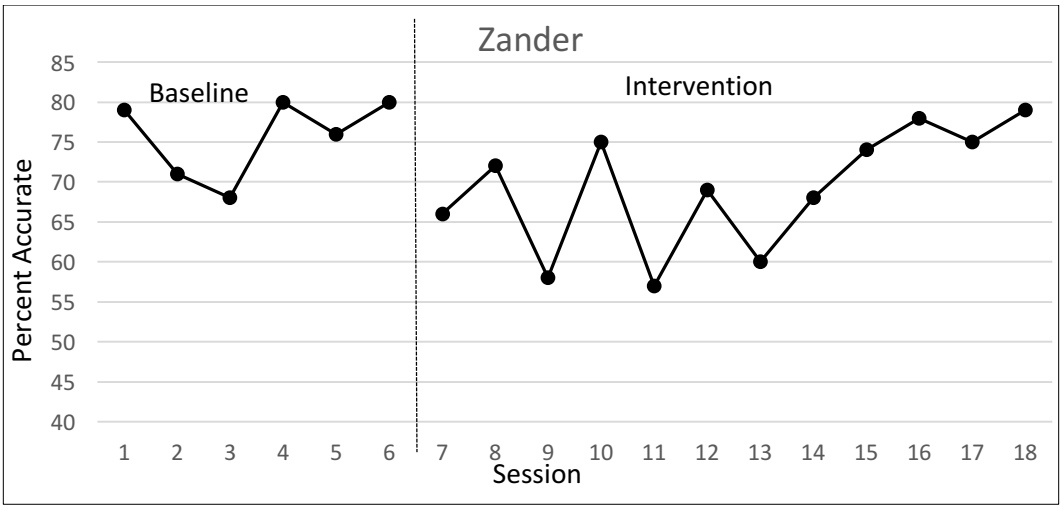

Figure 5. The graph represents the percent of words read accurately by Zander on 3rd grade DIBLES® ORF passages in baseline and intervention.

Discussion

Systematic phonics instruction focusses on a key foundational reading skill of decoding words that has one of the greatest positive impacts on overall reading ability (National Reading Panel, 2000). Decoding is also a foundational skill that allows students to then access higher level reading skills such as comprehension and textual analysis (Ehri et al., 2001). The inability to use phonics skills to decode words limits achievement in reading and is a hurdle that can deter further growth in academics of all subject areas. System 44®, a reading intervention that provides systematic reading instruction on the use of all 44 sounds in the English language is designed to improve phonics skills (Scholastic, 2014). This intervention was chosen because it targets

struggling readers including students with LDs and should be an appropriate intervention for students with LDs with low phonics skills (HMH, 2017c).

This study examined the effects of small group instruction using System 44® curriculum on the word accuracy of students with LDs when reading 3rd grade DIBLES® ORF passages. The aim was to assess whether System 44® was an effective remedial reading intervention that could be used to improve the phonics skills of students with LDs reading well below grade level. It was hypothesized that the use of System 44® curriculum, given through small group instruction and that addresses phonics skill development and teaches word reading strategies, would have a positive effect on the accurate decoding of text by students with LDs in secondary grades (Edmonds et al., 2009; Faggella & Deshler, 2008; National Reading Panel, 2000; Torgesen et al., 2001; Wise et al., 2000).

To assess the intervention's impact on the participants' overall phonics skills, each participant's accuracy on 3rd grade DIBLES® ORF passages during the baseline and intervention phases were recorded as data points and compared by observing overlapping data points and trends. According to overlapping data points from the participants, 96% of data did not exceed the baseline scores. Only 4% of data points were non-overlapping, indicating there was not a functional relationship between intervention and accuracy in this study. If a significant percentage of data points were non-overlapping, this would indicate a positive effect of the intervention on participants decoding abilities that was not found in this study. Two participants, Derek and Martin (See Figures 3 & 5), had low percentages of data points that did not overlap. Derek had 9% and Martin 13% non-overlapping data, demonstrating little to no improvement and deeming the intervention ineffective.

Overall the average words decoded correctly by all participants during the intervention fell below baseline averages. All data points from the other 4 participants overlapped, demonstrating there was no functional relationship between the intervention of System 44® small group instruction and the accuracy of student performance on 3rd grade DIBLES® ORF passages. The decrease in the average of words read accurately by all participants was unexpected in that previous research suggested a potential increase in reading skills when systematic phonics instruction was provided (Archer et al., 2003; Edmonds et al., 2009; Ehri et al., 2001; Faggella-Luby & Deshler, 2008; Lyon et al., 2001; National Reading Panel, 2000; Stanovich et al., 1996; Torgesen et al., 2001).

Limitations and Future Research

A limitation to this study was that students were sampled from a small population due to convenience and criteria met within the researcher's classroom. As this study found no positive effects of the intervention for this small sample of students, additional studies with other groups of students with LDs or larger sample sizes would improve the ability to accurately test the efficacy of System 44® and add to the research on this intervention.

An additional limitation may have been that the intervention phase was limited to no more than 15 lessons due to breaks in the academic calendar. Accuracy in orally decoding words may improve when the intervention is given during an extended period of a year or more (Gunn et al., 2000). Considering the curriculum aims to cover 44 different sounds and has lessons that address many different skills not covered during the intervention (Scholastic, 2014; Stanovich et al., 1996), additional time spent in intervention phase could produce greater effects.

Although participants did not demonstrate improved accuracy on 3rd grade DIBLES® ORF passages this does not suggest that other measures that assess phonics skills would

demonstrate the same results after an intervention of System 44®. Students with LDs have demonstrated significantly lower achievement scores on English Language Arts assessments (California Department of Education, 2017b). This was also found in accumulation and analysis of data used in this study (CDE, 2017a; USDE et al., 2015). Students within the study have LDs and this population have erratic scores on testing (Bateman, 1992). Meaning scores vary due to physical, social or disability related episodes. Possible reasons identified within the study include a waning in interest to new or novel interventions, high absence rates, accompanying attention related difficulties or disabilities and motivation.

To assure that results of the study are accurate the administration of DIBLES® 3rd grade ORF passages needs to continuously follow protocol for administration and follow all steps on the fidelity checklist (see Appendix C). When the students were given DIBLES® 3rd grade ORF passages the administration was done with fidelity a majority of the time, although administration was not done with fidelity in every attempt. The administration was observed during the intervention, using Fidelity Checklist that accompanied the Oral Reading Fluency Passage Administration (see Appendix C). Number 1 on the checklist was not followed because students could see the timer and scoring booklet during this administration during the first of three observed administrations during intervention. Participants were observed viewing the timer while attempting to decode words within the passages, taking away from their attention on their decoding task. This contrasts to the one administration observed during baseline, in which the administration of the dependent variable was done with fidelity. Steps provided by the fidelity checklist (see Appendix C) are given to assure that outside influences do not affect the results of the measure. When students understood that words were marked incorrect and that they were being timed there may have been added pressure or a distraction, which can impact performance.

Readability of individual passages also varies in difficulty and has been reported to possibly account for up to 30% of variance of accuracy in passages when protocol is followed and may explain variability of scores recorded during certain passages (Good & Kaminski, 2002b).

An additional caveat that could explain why the scores taken during baseline are higher on average than those during the intervention could be that scores during baseline measure may not have been accurate or consistently held to the same standards that scores during intervention were. To improve the consistency of measures, inter-rater reliability should be observed and applied to assure that accuracy on DIBLES® 3rd grade ORF passages are measured with reliability.

Further research may find different intervals of the independent variable (small group instruction using System 44®) to be more effective. The time constraints on this study may have meant the period during which the intervention was used did not allow for long term growth to be measured. Duration of instruction is a critical variable in when measuring the impact of instructional interventions and greater effects may be found with increased periods of intervention of 1-3 years (Gunn, Biglan, Smolkowski & Ary, 2000). Curricular interventions should be explored over a greater period, to allow increased growth for students well behind their same aged peers (Gunn et al., 2000).

Research based interventions are required by law to address the needs of students in special education (Yell et al., 2006). Future studies should also investigate the use of other interventions in systematic phonics instruction. A comparison of growth in phonics skills for students with LDs can help inform best practices for educators.

It is evident that after a brief intervention using System 44® curriculum, participants' ability to decode 3rd grade level text independently did not improve. This may result in continued

inability to meet 6th grade standards on Assessments of Student Performance and Progress (Good & Jefferson, 1998; Good et al., 2001). This highlights a continued need for interventions that are effective for this population. Reading skills, need a foundation in phonics in order to decode text allowing for greater comprehension, are essential for students to further themselves academically at a university level or in most job opportunities presented in their future (Deshler & Hock, 2007). To assure students demonstrate improved reading achievement, students need to build on their decoding ability (Gough & Tunmer, 1986), to reach future educational, economic and professional goals. Future studies should explore System 44® as well as other reading interventions that give systematic phonics instruction to a greater population and over a greater period, due to the need demonstrated through nationwide assessment (Archer et al., 2003; Edmonds et al., 2009; Faggella, & Deshler, 2008; Gunn et al., 2000; Lyon et al., 2001; National Reading Panel, 2000; Stanovich et al., 1996; Torgesen et al., 2001; Wise et al., 2000; U. S. Department of Education et al., 2015). It is imperative that an intervention to address the needs of students with disabilities in phonics skills be identified through research-based methods to allow educators to implement interventions with efficacy that benefit students with LDs.

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Appendix A

Scoring Sheet (2nd grade Oral Reading Fluency passages)

ORF Progress Monitoring 20

My Friend Is From Korea

It all started last year. Our class decided to find a pen pal from another country. I chose a girl my age from Korea. I wrote to her and she wrote back! We found out we like a lot of the same things. We both like our family. I told her all about my little brother and how he makes me laugh. She told me about her big sister who takes her on the bus to the movies. 13 26 41 54 67 78

We sent each other our picture and described where we live. As we wrote more and more letters I learned about her and she learned about me. We both like to eat, and dessert is our favorite part. The food we eat is very different, though. Even the desserts are different. Her favorite is Korean pear. My favorite is strawberry ice cream. 89 102 115 127 137 140

My parents took me to the Asian Festival so I could sample different Korean foods. I liked most of them. I liked the soups with noodles in them the best. My friend said she tried some American foods. She liked pizza but didn't like hot dogs. 152 164 176 186

We like to spend time learning about each other. My friend is teaching me to count and to write my name. I am teaching her the days of the week. I was surprised that her favorite song was the same as my favorite song. I hope we are able to meet in person someday. 198 211 224 238 240

Total words: _____ – errors: _____ = words correct: _____

Retell: ORF Total:_____

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71		
72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94		

Retell Total:_____

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ORF Progress Monitoring 1

Riding the Bus to School

I ride a big yellow bus to school. I stand on the corner of our street with my friends and we wait for the bus. My friend's grandma waits with us. When it's raining, she holds an umbrella to keep us dry. Sometimes when it's cold she brings us hot chocolate. 15 27 38 50 51

I leave my house to walk to the bus stop after my parents go to work. I watch the clock so I know when to leave. Sometimes mom phones me from her office to remind me. Sometimes she can't call, so I have to be sure to watch the time. 65 78 89 101

Our bus driver puts his flashing yellow lights on and then stops right next to us. When he has stopped he turns the red lights on so all the cars will stop. He makes sure we are all sitting down before he starts to go. He watches out for us very carefully. 112 125 139 152 153

My friends and I are the first ones to be picked up by the bus. We like to sit right behind the bus driver and watch while he picks up all the other kids. We know where everyone lives. By the time we get to our school, the bus is almost full. Sometimes the kids get noisy and the driver has to remind us to keep it down. He says their noise makes it hard for him to concentrate and drive safely. I am glad that our bus driver is so careful. 168 181 193 206 220 232 245

Total words: _____ – errors: _____ = words correct: _____

Retell: ORF Total:_____

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71		
72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94		

Retell Total:_____

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Appendix B

Student Version (2nd grade Oral Reading Fluency passages)

Riding the Bus to School

I ride a big yellow bus to school. I stand on the corner of our street with my friends and we wait for the bus. My friend's grandma waits with us. When it's raining, she holds an umbrella to keep us dry. Sometimes when it's cold she brings us hot chocolate.

I leave my house to walk to the bus stop after my parents go to work. I watch the clock so I know when to leave. Sometimes mom phones me from her office to remind me. Sometimes she can't call, so I have to be sure to watch the time.

Our bus driver puts his flashing yellow lights on and then stops right next to us. When he has stopped he turns the red lights on so all the cars will stop. He makes sure we are all sitting down before he starts to go. He watches out for us very carefully.

My friends and I are the first ones to be picked up by the bus. We like to sit right behind the bus driver and watch while he picks up all the other kids. We know where everyone lives. By the time we get to our school, the bus is almost full. Sometimes the kids get noisy and the driver has to remind us to keep it down. He says their noise makes it hard for him to concentrate and drive safely. I am glad that our bus driver is so careful.

Appendix C

Fidelity Checklist (Oral Reading Fluency Passage Administration)

CTL Center on Teaching & Learning
UO DIBELS Data System

Assessment Fidelity Checklist: DIBELS 6th Oral Reading Fluency

The assessor…	Yes	Continue Practicing
1) …holds clipboard and stopwatch so the student cannot see what he/she records.	○	○
2) …performs standardized directions verbatim: ***"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 what you read, so do your best reading. Start here*** (point to the first word of the passage)***. Begin."***	○	○
3) …starts stopwatch after the student says the first word of the passage.	○	○
4) …waits 3 seconds for the student to read the first word. After 3 seconds, says the correct word, starts the stopwatch, and scores the first word as incorrect.	○	○
5) …says the correct word and scores the word as incorrect, if the student hesitates or struggles with a word for 3 seconds.	○	○
6) …puts a slash through words read incorrectly.	○	○
7) …writes "sc" above an error if self-corrected within 3 seconds.	○	○
8) …discontinues the assessment and records the appropriate score if a. the student does not get any words correct in the first row of the first passage (records a score of 0); OR b. the student reads fewer than 10 words correct on the first passage (records the score of the first passage).	○	○
9) …places a bracket (]) after the last word provided and says "stop," at the end of 1 minute.	○	○
10) …accurately determines the number of total words, errors, and number of word read correctly.	○	○
11) …records the total words, errors and number of correct words at the bottom of each passage.	○	○
12) …records the median (i.e., middle) number of words correct on the front cover.	○	○
13) …shadow scores with an expert examiner, and is within 2 points on the final score.	○	○

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Appendix D

Social Validity Questionnaire

Questions:		1 Strongly disagree	2 Disagree	3 Agree	4 Strongly Agree
1	These lessons were effective				
2	I found this curriculum acceptable for increasing my skills				
3	Using the curriculum improved skills across multiple contexts (home, classroom, community)				
4	I think my skills will remain at an improved level even after the treatment ends				
5	This treatment improved family functioning				
6	This curriculum quickly improved my skills				
7	I would be willing to continue this curriculum if I want to increase the my skills				
8	I would suggest the use of this curriculum to other individuals				
9	This curriculum decreased the level of stress experienced when I read				