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Effects of using Foundations to teach phonics skills with fourth grade students with exceptional learning needs

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**EFFECTS OF USING FOUNDATIONS TO TEACH PHONICS SKILLS WITH
FOURTH GRADE STUDENTS WITH EXCEPTIONAL LEARNING NEEDS**

by

Jennifer Bishop

A Thesis

Submitted to the
Department of Interdisciplinary and Inclusive Education
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Abstract

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FOURTH GRADE STUDENTS WITH EXCEPTIONAL LEARNING NEEDS
2017-2018
S. Jay Kuder, Ed.D.
Master of Arts in Special Education

This study examined the effects of adding the Foundations reading program to the curriculum of fourth grade students with exceptional learning needs to see if it can improve reading fluency and comprehension. The students were in a Multiple Disabled classroom, and had Individualized Education Plans. Disabilities represented in the study include Attention Deficit Hyperactivity Disorder, Autism Spectrum Disorder, Fetal Alcohol Spectrum Disorder, Oppositional Defiant Disorder, and Other Health Impaired.

Baseline data was collected prior to introduction of *Foundations* Level 2. Students were given benchmark assessments to determine instructional reading levels using the Fountas & Pinnell Benchmark Assessment System as well as the DIBELS Nonsense Word Fluency Assessment. Students again were administered these assessments again at the end of the intervention period in February, these results were then compared with participants' growth from the previous school year. In looking at results, the *Fountas and Pinnell* benchmarks showed growth across both years studied, although greater growth was noted in the previous school year. Showing how direct and explicit instruction can help struggling readers is of huge importance to elementary and special education professionals.

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Chapter 1

Introduction

All students require some form of phonics based instruction in the formative years of school. Some students, may require very little instruction, learning the basics quickly and then running with it, becoming great readers easily. However, most students will not be one of those readers. The majority of students require a very systematic approach that will allow them opportunities to learn these skills and then practice them before they are able to use them independently. These skills are important, as learning to make letter-sound correspondences with basic decodable words can promote students' attempts to read and/or spell words that are unfamiliar to them (Noltemeyer 2013). Even more problematic, are the students who do not respond appropriately to this class-wide reading instruction and require additional intensive instruction in these skills. The question then becomes, "how much reading instruction?" and "what kind of instruction is best?" Whatever decision a district makes on its phonics curriculum it should be one that will allow our youngest students the chance to become independent, fluent readers.

There has been much research into the importance of reading intervention in students in grades K-3, however, there is still a great importance in teaching these skills to students in higher grade levels. State departments of education and local school districts are increasingly recommending a Response to Intervention (RTI) based approach to literacy after Grade 3 (Wanzek 2013). This is a form of intervention in which students at risk for failure receive increasingly greater levels of intervention instruction. This is likely because educators are becoming more aware of reading problems that are often not

addressed in these grades, particularly in general education classrooms. Students, particularly ones that are more than one grade below reading level, will likely benefit from added phonics based instruction as part of their educational program.

In this study, I examined the effects of adding Foundations Level 2 reading instruction to the reading program for three fourth grade students currently reading more than a grade below level that are already classified students with an Individual Education Program (IEP). Foundations is a systematic approach to teaching foundational phonics skills necessary for literacy and fluency (Wilson 2012). This, along with additional reading instruction designed to teach comprehension, should provide students with greater opportunities to bridge the gap in their reading deficits and encourage them to be more active, engaged readers.

Students who are exceptional learners can require more explicit, systematic instruction with numerous of opportunities to practice those phonics skills than most Grade 4-12 literacy programs allow. The push in most literacy programs at these grade levels moves away from an emphasis on learning to read (Wanzek 2012) and towards building comprehension and reading to gain information. Students lacking in these foundational skills, will find the reading too difficult to read fluently for comprehension. These students still require additional reading instruction.

The research question examined in this study is:

-Do fourth-grade students with disabilities reading via the Foundations reading program make significant improvements in reading compared to their performance from the previous year?

-Will explicitly teaching phonics skills also create an increase in reading comprehension?

This study was conducted in one classroom in a small school in a K-8 district. The classroom is a self-contained multiple disabled (MD) classroom with one teacher and one instructional aide. The three students chosen for the study are fourth grade students, one is classified as Other Health Impaired (ADHD), another is classified as Fetal Alcohol Spectrum Disorder (FASD), Oppositional Defiant Disorder (ODD) and Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal infections (PANDAS), the other student has Autism Spectrum Disorder (ASD). Two of the participants are white males, the other participant is a mixed race female.

The independent variable in this study was the addition of the Foundations curriculum to each student's educational program. Foundations is a program that takes a multi-sensory, systematic approach to teaching phonics, spelling, and handwriting. The program is based on the national Common Core State Standards. The program integrates skill instruction in daily lessons in ways that scaffolds learners while they learn. It provides many opportunities to practice these skills and build mastery (Wilson 2012). This program is was designed for the foundational school years (Pre-K through Grade 3) but I hypothesize that it can be adapted to benefit students reading below level in higher grades. The program has significant research supporting its effectiveness as a program for teaching early literacy skills, but many of those previous studies focused on students in Kindergarten and Grade 1.

The dependent variables in this study are the benchmarks used to evaluate students. Students will be benchmarked using the Fountas & Pinnell Benchmark

Assessment System and the DIBELS nonsense word fluency assessment for Grade 2. The Fountas & Pinnell Benchmark Assessment System is a series of leveled readers which include comprehension questions that are used along with their fluency score to determine mastery of a specific reading level. The DIBELS nonsense word fluency assessment is an assessment in which students are scored on their ability to read a list of nonsense words.

In this study, the three students will be benchmarked in each of the reading assessments in September of the school year to find a baseline, and those results will be compared to their results in November. In addition, these results will be compared to the Fountas & Pinnell benchmark results from their previous year. It is hypothesized that students will see more growth than in the previous year. This information could provide teachers with more research on the use of a program with an older population of students than the program was originally intended.

Chapter 2

Review of Literature

Building strong foundational reading skills (i.e. phonics, phonemic awareness, fluency) is generally the focus of the early, formative elementary grades. Most students will eventually make progress and respond to instruction, while up to 30% of students will not respond to instruction (Whiteley 2007). These students will require literacy intervention instruction as they move into higher grades.

Typically developing students will learn these skills in the confines of their K-3 classrooms in one of the three tiers of reading instruction, each with increasingly more intensive intervention. By the time students reach the middle school grades, it is assumed that students already have these skills and will no longer need this instruction.

To learn these skills, early elementary school teachers utilize curriculum materials that provide students with lots of opportunities to not only learn the phonemic awareness, phonics, and fluency skills, necessary for reading success, but that will give them opportunities to practice those skills to obtain mastery. These can include strategies such as multisensory methods to practice writing letter sounds or words, repeat readings of texts to build fluency, and monitoring progress by tracking the correct number of words read, and reading benchmark assessments such as the Fountas & Pinnell system.

These foundational skills are necessary for school success in all subjects as students move into the middle school grades. In those grades, students will be not only expected to possess those skills, but also the ability to self-monitor so that they can make sure what they read makes sense, all the while learning to read and comprehend increasingly complex texts. This, coupled with poor readers' low desire to read

independently and thereby practice reading skills, means that they will likely be unable to catch up (Kim 2009). As middle and high school students read increasingly complex texts in each of their classes, their reading difficulty will become more apparent.

Phonics Instruction

Readers require mastery of phonics and word attack in order to read with the fluency necessary for comprehension (Compton 2007). Since comprehension is the ultimate goal of reading, it is vitally important that students be able to do these things automatically so that comprehension can occur. These skills are not generally taught past the lower elementary grades. Middle and high school teachers expect that their students will be able to read well enough to extract meaning from the texts that they read (Vaughn 2009). When this is not the case, struggling readers will need additional support to learn these skills, continuing to utilize a program that provides explicit instruction in these skills such as Foundations in the upper elementary grade students may provide the support these students need (Rupley 2009).

Students who grasp these skills early, will have more opportunities to practice those skills. Reading lots of books and practicing strategies taught to them as well as developing some of their own. These students will be able to focus less on word attack and more on fluency and eventually self-monitor their reading to check for understanding.

Phonics Instruction for Students in Grade Four and Beyond

Struggling readers, will read through a text laboriously. Because they have not grasped phonics skills, they will not be able to focus on fluency or making sure that they understand what they are reading. They will miss opportunities to focus on learning

comprehension strategies. In turn, reading will become a difficult process for them and they will be reluctant to read. In this way students who struggle with reading due to a deficit in phonics skills will struggle as they transition from grades K-3 where they are learning to read to grade four and beyond where they read to learn (Kim 2009). Students in higher grades present special challenges when learning these skills as particularly if they are in an in class resource setting. Students who lack these skills by the time they reach these higher grades are also often part of the 30% of students who do not respond to regular intervention methods while in the lower grades (Whiteley 2007) and likely continue to struggle with intervention in the future.

Compton et. al. (2008) completed a longitudinal study which examines cases of late-emerging reading disability (RD). In this study, researchers examined data for readers in a school for grades one through four. They evaluated a sample of 177 students who were evaluated and shown to be at risk for reading failure. The students took part in tutoring sessions provided by graduate students (masters and doctoral) at Vanderbilt University. The assessment measures were more rigorous than the universal screenings such as the DIBELS, which is a screening assessment that includes the reading of nonsense words, phoneme segmentation, and oral reading fluency. The screening used by the researchers in this study covered a greater number of literacy skills such as: word identification fluency, rapid letter naming, phonemic awareness, verbal memory, and verbal IQ. Over time, the data was analyzed and compared to initial assessments made at the beginning of participants' first grade year.

The results indicated that students in each group (Reading Disability (RD) and Typically Developing (TD)), were generally stable throughout the study with only five

students moving from the TD group to the RD group. The students who did make the shift to the RD group showed some interesting patterns: reading performance in the normal range in assessments in the first and second grades and performance below normal range in grade four. In this study, that indicates that through the study, these students truly were late-emerging and not late-identified. With the more rigorous screening, false negatives are more likely to have been eliminated. It is important to note also that these students did screen into the tutoring groups during the first grade, but eventually learned the skills necessary to move back to the general education curriculum only. It is possible that these students learned the skills needed to place them back into the TD group, but over time as reading materials increased in complexity they transitioned back to the RD group. The significance of this study is that it adds to the hypothesis that students do fit the profile of a late-emerging reading disabled rather than simply students who were unidentified in the early elementary grades.

Strategies for Teaching Phonics Skills

While teaching phonics is and should be a focus of the primary grades, there is evidence that suggests it should be addressed in the middle grades as well. In some cases, students with reading difficulties will continue into the higher grades. In some cases, students may experience the initial onset of reading difficulty in these middle grades as they encounter this more difficult work of reading to learn (Leach 2003). With this consideration, it is possible that there are students with reading disabilities who may not have received intensive intervention reading instruction in grades K-3 because they did not meet the criteria for needing it.

Since President Bush signed the reauthorization of the Individuals with Disabilities Education Improvement Act of 2004 (IDEA 2004), schools were encouraged to adopt a new model for identifying students at risk for reading failure. Previously, schools used the IQ-achievement discrepancy model, which is often called a “wait to fail” method, in which students IQ scores are compared to their current level of academic achievement. In this way, the students often were unable to be identified and referred for special services until long after teachers first notice the students beginning to struggle. Since IDEA 2004, the current model used in many schools is the response to intervention model, in which all students are screened for potential reading difficulty. If a student shows signs that he or she may have reading difficulty, that student will begin receiving increasingly intensive levels of reading instruction based on how the student responds to that instruction, as well as the student’s regular whole class phonics and reading instruction. In this way, the goal is to catch students before they fail and catch them up before they fail. (Fuchs & Fuchs 2006)

Wanzek et. al. (2013) completed a meta-analysis of ten studies regarding reading interventions for students in grades four and beyond. There is not nearly as much research for these grades as there is for reading intervention in the lower grades. This indicates that the middle and high school student populations are often overlooked when researchers consider how to best instruct struggling readers. These students still require and deserve intensive reading instruction. Interestingly, the study authors noted that the majority of the studies included in the meta-analysis were multi-component interventions. This is likely because older students who are struggling readers have difficulty in lower-level skills such as word recognition as well as higher-level skills such as comprehension

and vocabulary. In addition, they also noted that group size was not a significant factor in student results. In another study by Vaughn et. al. (2009) this theory regarding intervention group size was further strengthened. One thing was clear from this meta-analysis: students can make some progress with extensive interventions.

In the previously mentioned study by Vaugh et al. (2010) the team looked at the group size when providing interventions for older students with reading difficulties. In their study, seventh and eighth grade students with reading difficulties were assigned randomly to groups that were either small group (approximately five students) or large group (approximately 12-15 students) with a teacher trained by the researchers, or a large group (roughly 12-15 students) with a teacher trained by the school district delivering the school curriculum. The interventions took place over the entire school year, at the end of the year, results showed that there was little difference in growth shown between any of the three group types.

While the studies indicated that students in the smaller groups did do better in decoding and spelling, those gains were not significant enough to suggest that group size was a powerful indicator of student success. There was no statistically significant effects between groups for comprehension outcomes. This is significant as it indicates that interventions can take place in middle schools in larger settings rather than smaller ones. Another point of importance to note is that treatment groups did not outperform the groups who received school-delivered instruction.

In another study by Kim, Samson, Fitzgerald, and Hartry (2010) the researchers examined the use of the program READ 180 with struggling readers in grades four through six. READ 180 is a blended literacy intervention program specifically designed

for struggling readers in the middle grades that targets reading comprehension, vocabulary, and writing skills. In the study, students were identified in grades four through six as study subjects because they scored below proficient in their most recent state assessment. The students were then randomly assigned to either instruction in the READ 180 program as a supplemental reading intervention, or to a sixty-minute after school program run by teachers, each program was provided for the same number of sessions.

In the READ 180 program, instructional sessions usually last ninety minutes, but for the time constraints of the study, the time was reduced to sixty minutes. To do so, the sessions which normally begin with a whole group lesson, and then smaller groups in twenty-minute rotations, were reduced to the twenty-minute rotations only. These twenty-minute sessions include computer-based reading activities, reading leveled books, as well as teacher-led instruction. The after-school program, was designed as a homework help and after school activities program. Both programs were administered by trained, certified teachers. The after-school program was not specifically targeting reading intervention, instead it focused on numerous possible subjects and structured learning activities including math, science, and history. In addition, the program did utilize KidsLiz, which is a series of trade books with reading guides that help build vocabulary, discussion skills, and help students develop cultural awareness.

The results of this study are remarkable. In both groups, students experienced significant growth from pre- to post-testing in the areas of word reading efficiency and reading comprehension, but saw no significant effect on state standardized test scores. This data suggests that both program are effective ways to provide intervention for

struggling middle school students. This program, READ 180, while beneficial for students with reading difficulties, does not address phonics skills specifically.

Syllabication

Before students can read a text with the fluency necessary for comprehension, students must have first mastered the phonics skills necessary to achieve that fluency. For those students in the middle grades who still struggle with these skills, additional programs to teach phonics are still necessary. In many cases, a K-3 program adapted to the developmental level of the middle school grade with which the material will be used can be appropriate. Many studies examining the effectiveness of these programs have been completed with students in the lower, K-3 grade level range.

One such skill useful for struggling middle school students is syllabication. Syllabication skills involve the breaking apart of words into their syllable parts and decoding each part individually based on phonics rule that dictate how vowels should sound in each syllable before putting the parts back together and reading the entire word. Not much research on teaching syllabication has been done within the past fifteen years, but what has been done shows promise.

One more recent study specifically looks at teaching syllable skills with struggling middle school readers. This study, by Diliberto et. al. (2008) used direct, explicit instruction to teach struggling readers how to break words apart, to read and spell those words. In the study, students identified as struggling readers in grades sixth – seventh- and eighth-grade with high incidence disabilities such as ADHD were chosen for the study and placed in either the treatment group or the control group. The control group received the district approved intervention curriculum, in this case, *Corrective*

Reading Decoding Program, a direct instruction program that covers the following skills in each lesson: word attack, group reading, individual reading checkouts (self-monitored partnership reading), and wordbook exercises, which is independent work of the skills learned in the lesson. In addition, two schools in the study also used the *Success Maker* computer program, which provides on-level reading and comprehension exercises. The treatment group received instruction in a program called *Syllable Skills Instruction Curriculum*. A program designed by the main research author. It includes sixty scripted mini-lessons which address specific skills with opportunities to practice and master the skills. These mini-lessons had four parts: group review, new skills, word reading, and written spelling. These mini-lessons took approximately fifteen minutes.

The students in both groups were given the Woodcock-Johnson III (WJ-III) Tests of Achievement as a pre- and post-test. The mean scores of the treatment group started lower, but exceeded that of the control at the end of the six-month study, indicating that explicitly teaching syllabication skills to struggling readers will likely benefit middle school students.

Fluency

Reading for comprehension also requires that readers be able to read fluently. Fluency develops in readers as they practice reading. Since many struggling readers do not practice these skills, they often lack the fluency needed to read for understanding. Many struggling readers have listening comprehension which surpasses their level of reading comprehension. This is likely because these students lack the decoding and fluency to read for understanding, which indicates that these skills are the foundation upon which all other reading skills are built (Archer 2003).

There are many strategies that can be used to increase fluency in struggling middle school readers. In addition to teaching syllabication and other phonics skills, time needs to be spent allowing students opportunities to engage in repeated readings of texts. In a single-subject study by Ates (2013), a student was evaluated before treatment to determine his reading fluency level and reading miscues. The researcher used the following activities with the study participant to increase the participant's fluency: the participant would read passages while the researcher recorded data, while the participant took a break the researcher would calculate the data and provide the participant with reports that told him the number of words read correctly, the number of miscues, and corrected miscues. The participant would then read the passages again.

The results of the study indicated that the participant made progress in his reading skills in the areas of word recognition accuracy and automaticity. These findings, while on a very small scale, indicate that repeated readings of selected passages and constructive feedback on the individual's performance can help struggling readers become more aware of their deficits and set goals for themselves as they read the passages again.

Direct and Explicit Phonics Instruction

A program such as Foundations, provides direct explicit phonics instruction, meaning that teachers directly and explicitly give students new information rather than designing lessons in which students will become independent learners through discovery and maturation (Rupley 2009). They do this through thoughtful interactions between teacher and students and the teacher's guidance of student outcomes. Rupley et al provide the following recommended steps for direct/explicit instruction:

1. Review and check previous work.
2. Present new material.
3. Provide guided practice.
4. Provide feedback and corrections.
5. Provide independent practice.
6. Provide weekly and monthly reviews. (Rupley et. al. 2009)

Foundations is a program that does just this. Every thirty-minute lesson begins with a review of previously learned skills and letter sounds, followed by the teaching new material, which could be “trick words” which are sight words that do not follow typical phonetic patterns, new skills or concepts, or word of the day which is vocabulary. This is followed by an opportunity for students to try the skill with teacher support and feedback, and independent practice. There are opportunities built into the lessons for daily, weekly, and monthly reviews as well. The lessons activities are varied enough and multi-sensory enough to keep students engaged and interested in the material.

According to a meta-analysis by Swanson (2008) on the effectiveness of direct instruction the body of research available for the synthesis indicate that students with reading difficulties all benefit from explicit and systematic instruction, that includes phonemic awareness and phonics, and higher processing skills such as fluency, vocabulary, and comprehension. Foundations provides all but the comprehension instruction. While the program does not present itself as a comprehension program, it does have some comprehension reading activities built in to some of the lessons (Wilson 2012).

According to the same meta-analysis, Swanson examined more than twenty studies on the subject of reading instruction with students with reading difficulty. When comparing the studies, an interesting discovery was made. While the studies included which utilized explicit instruction to teach phonics skills indicated greater growth, the majority of the studies included little to no explicit instruction. This indicates that there is a disconnect between what struggling readers need and what they often get in their reading instruction (Swanson 2008). Utilizing a program such as Foundations will provide the kind of quality instruction that students with reading difficulty require to be successful.

Phonics Instruction in Grades K-3

For all students, phonics instruction occurs during grades K-3. For many students, they will no longer require phonics instruction past that grade, having mastered letter-sound correspondences. In some cases, students at-risk will require additional support in order to find success but, studies have shown that up to 30% of students identified early as being at-risk for failure will not respond to conventional interventions (Whitely 2007). In those cases, students will likely need to continue phonics instruction beyond grade three.

In a study by Beverly et. al. (2009) conducted with first grade students, the researchers looked at the effects of practicing reading decodable texts after phonics instruction. Study participants were placed into three groups. The first group received phonics lessons and then practiced the skills reading decodable texts. The second group heard authentic literature read aloud, the third group participated in phonics instruction and authentic literature. The treatment sessions were two times a week for thirty minutes

each as enrichment sessions and lasted for sixteen sessions. The researchers used a benchmark and The Gray Oral Reading Test, 4th Edition (GORT-4) for the pre- and post-test. In each of the groups, students showed significant growth in decoding phonetically regular words regardless of the type of text used. The researchers originally hypothesized that the phonics and decodable text group would see the greatest improvement, but the difference in growth was not significant enough to be of note what was interesting was that the group which experienced texts read aloud showed the greatest improvement in fluency. This is an important finding because it indicates that a balanced literacy approach is best, one that includes both texts read aloud so that students can hear the skills being modeled and decodable texts so that students can practice the skills they are learning in their phonics lessons.

When analyzing research from the National Reading Panel, Ehri et. al. (2001) determined that systematic phonics instruction provided more significant growth than non-systematic or no phonics instruction across 38 separate studies. In addition, the researchers noted that results were higher in studies performed in younger grades rather than higher indicating that students get the most out of phonics instruction before they reach the third grade. Students with reading disabilities also responded well to the phonics instruction in these studies, which is promising data for that population of students.

Roberts and Meiring (2006) completed a study examining the effects of phonics instruction in first grade regarding the context in which it was taught: either with spelling words or literature. Students were randomly assigned to one of two groups and then the groups were randomly chosen for different treatments. Before treatment began each

student was administered several benchmarks to determine performance levels in a variety of reading skills: spelling, reading phonetically regular real words, reading phonetically regular nonsense words, high frequency words, reading with familiar texts, reading with unfamiliar texts, writing and comprehension. The students then began treatment, in one group, students learned phonics skills within the context of spelling, while the other learned phonics within the context of literature. The first group utilized a program called Spelling Through Phonics. It is a program designed to teach letter-sound correspondence and develop mastery in analysis of the order of sounds in words grouped together in spelling lessons. The phonics in literature group were taught letter-sound correspondence within the context of children's literature. The literature used in the study was selected from a California State Department of Education (1996) document titled, *Recommended Literature: Kindergarten Through Grade Twelve*. The words in the text were then used to teach letter-sound correspondence and blending skills. Both groups learned letter-sounds in the same sequence. The rest of each group's literacy program was the same: a literature-based program that relied heavily on repeated readings and choral readings of literature, sentence frames, book writing, and daily journaling.

The results indicated that while both groups were successful in learning letter-sound correspondences, the phonics in spelling context group had more significant growth in the areas of reading and spelling phonetically regular nonsense words and real words. In addition, these differences between the groups were maintained from the middle of the school year onward. In addition, when students from each group who started the study with similar achievement levels were compared at the end of the study,

those who started with low alphabet knowledge had greater growth in the phonics within spelling context group than their comparable peers in the literature context group.

Phonics instruction should not just happen in the elementary school classroom, however. In a study which examined the effects on small group phonics instruction in kindergarteners by Noltemeyer et al (2013) discussed this very topic. In the study, six students previously identified by teachers as having low emergent reading skills were selected as participants. In this study, the students received an additional literacy instruction session in a small group setting one time per week in addition to all their other literacy instruction. In this treatment session, an instructor used a flash card drill and practice technique to help the participants practice reading words quickly repeatedly until they have mastered the words. This is a skill often used in older students (first grade and beyond) to read high frequency sight words. In this study, the flash cards contained words selected from a reading textbook selected by the researcher. These were orthographically regular words, following all the standard syllable patterns, according to the rules of phonics. In the treatment portion of the session, the students were presented the cards and pronounced the individual sounds of the words, then blended them together to read the whole word. In the control portion, students were assessed on words that were not taught as part of the drill.

The results indicated that directly following the treatment session, students could identify the target words, but when presented with the target words the following week prior to the start of the second session, they were unable to identify them again. This indicates that the students can learn the words during these sessions, but required more sessions of intervention to maintain that new information. In this way the study suggests

that repeated practice daily both at school and at home are a better model for struggling readers.

Summary

Ideally, struggling readers will be identified early, entered the first tier of a Response to Intervention (RTI) program and begin remediation on the path to improved reading abilities. Unfortunately, studies show that there are many students who move up out of third grade without a firm grasp of the necessary phonics skills for fluency which means they are unable to read more complex texts for meaning. In other cases, some students have “flown under the radar” never scoring low enough on screening assessments for placement in an RTI program or screening into the program, and later testing out, only to emerge as reading disabled in the middle grades. (Compton 2008) These students, upon entering higher grade levels which require them to read far more complex texts will require intervention support in a variety of literacy skills from comprehension to phonics.

These foundational literacy skills are necessary for students to be successful in all subjects as students move into the middle school grades. In those grades, students will be required to read increasingly difficult texts in all subject areas. Students will be expected to have already mastered the foundational skills necessary to read for meaning as independent readers. When students are unable to do so, teachers will need to rely on strategies for teaching the foundational skills students lack so that they may be successful.

Chapter 3

Methodology

Setting and Participants

This study took place in a self-contained special education classroom with three students who are in the fourth grade. These students are the only students in the class and they are attending a small school in a single-school district that serves students in grades pre-k through grade eight.

According to the New Jersey School Performance Report (NJ DOE, 2017), this is a shrinking school district, which has lost roughly fifteen percent of its student population over a three-year period from the '13-14 school year to the '15-'16 school year. The demographics of the student population include no language diversity, with 100% of students reporting English as their primary language, 80.4% of students are white, with 11.7% of the students are black, 6.7% of students are reported as Hispanic, and less than 2% are Asian or multi-racial. The student population has a high percentage of students listed as economically disadvantaged, with that number rising from 47% economically disadvantaged to 58% economically disadvantaged from the '13-'14 school year to the '15-'16 school year. In addition, the percentage of students with disabilities has also risen from 18% to 29% over the same time period.

The students chosen for this study are all students who are classified as eligible for special education services and, have an Individual Education Plan. These students were selected for the study, because each student has a greater difficulty with reading and language concepts than with learning other academic subjects. The district has recently

added the Foundations program as part of its English Language Arts curriculum, replacing a mix of programs (the district used parts of the Phonics First, and SRA Interventions in Reading programs) which were pieced together to create a program. Now, the district has one unified program for phonics instruction throughout the lower grades (Pre-K through grade 3).

Participant 1. This student is a fourth-grade white male classified as Other Health Impaired (ADHD). The student shows signs of a reading disability (dyslexia). He began the current school year reading at a Fountas and Pinnell level C and receives additional phonics intervention instruction. Other Health Impaired is defined as having limited strength, vitality or alertness, including to environmental stimuli, that results in a limited alertness with respect to the educational environment (Grise 2002). The student is classified as such in his IEP, and has goals and objectives accordingly.

Participant 2. This student is a fourth-grade white male diagnosed with Autism Spectrum Disorder (ASD) – Moderate. ASD is characterized by persistent deficits in social communication and social interaction across multiple contexts; and restrictive, repetitive patterns of behavior, interests, or activities. (Reynolds 2013). In addition, these symptoms cause significant impairments in social, occupational, or other important areas of current functioning (Reynolds 2013). In order to be classified as “moderate” an individual will show marked deficits in both verbal and nonverbal social communication skills, social impairments will be apparent even with supports in place, they will have inflexibility in their behavior, difficulty coping with change, and display restrictive/repetitive behaviors frequently enough to be noticed by the casual observer (Reynolds 2013). This student began the current school year reading at a Fountas and

Pinnell level L. The student has the medical diagnosis of a doctor, and his IEP includes this information and goals and objectives based on his medical diagnosis.

Participant 3. The third student is a fourth-grade mixed-race female diagnosed with Fetal Alcohol Spectrum Disorder (FASD), cocaine exposure during pregnancy, Oppositional Defiant Disorder (ODD), and Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal infections (PANDAS). ODD can manifest as angry/irritable mood, argumentative/defiant behavior, and vindictiveness (Reynolds 2013), PANDAS is medically defined in much looser terms: children may exhibit a tic or obsessive-compulsive disorder when certain streptococcal infections trigger the onset or exacerbation of these behaviors (Singer 2003). This student began the school year reading on a Fountas and Pinnell level L.

Procedure

The intervention was implemented over four months. The classroom teacher taught lessons from the *Foundations* reading program for thirty-minute lessons in a whole group setting each day in addition to their other reading instruction and interventions. Because these students were in a self-contained class setting, the whole class lesson was still a group of only the participants. The *Foundations* lesson occurred during the first part of the day, just before lunch from 11:00 to 11:30. This lesson occurred in their regular homeroom. The intervention was delivered with the use of the *Foundations* Level 2 Teacher Manual (Wilson 2012). The instructional material is divided into units that are intended to take one to two weeks to complete. Within each lesson are several activities that begin with reviewing skills learned in previous units, then teach new skills, then provide practice of the skills learned in the unit.

Baseline data was collected during the first month of the school year, prior to introduction of the first unit of *Foundations* Level 2, students were given benchmark assessments to determine their instructional reading levels using the Fountas & Pinnell Benchmark Assessment System as well as the DIBELS Nonsense Word Fluency Assessment. Students again were administered the Fountas & Pinnell Benchmark and DIBELS Nonsense Word Fluency Assessment at the end of November, and again at the end of the intervention period in February.

The intervention began with an orientation to the *Foundations* program. Since the students had never learned these skills in this type of format, the program provides a two-week orientation unit providing students with an opportunity to learn the format and activities while working with easier skills that they have already mastered.

Once the orientation portion of the intervention ended, students began the regular *Foundations* Level 2 units. These units contain five to ten thirty-minute lessons per unit. The activities in the lessons can vary, but follow the same format: warm up, which is a review of letter sounds students should already know, introduction of new concepts (letter sounds, rule exceptions, trick word (words that do not follow the phonics rules), or word of the day (vocabulary skills). This is followed by different ways to practice the new skills which they have just learned and other skills that they have learned in the unit.

At the end of each unit is an assessment, for the assessment, students are read letter sounds, current unit words, trick words, and a sentence which they have to dictate on their paper. Then they are required to label the letters and syllables (i.e. open and closed syllables, long and short vowel sounds, diagraphs). For students with test anxiety,

they were not told they were taking a formal test, and the portion of the paper that indicated that it was a test, was masked.

Research Design

The independent variable is the addition of *Foundations* to the participants' reading instruction. The purpose of this intervention is to encourage greater growth in reading.

The dependent variable in the study were the students' achievement levels on the Fountas & Pinnell and DIBELS benchmark assessments. This study will utilize a single-subject, A-B design with multiple subjects.

Chapter 4

Results

In this single subject design study, the effects of implementing a new phonics curriculum (Foundations – Level 2) were examined with students with special needs in a self-contained fourth grade class. The research questions to be answered were:

-Do fourth-grade students with disabilities reading via the *Foundations* reading program make significant improvements in reading compared to their performance from the previous year?

-Will explicitly teaching phonics skills also create an increase in reading comprehension?

The students were assessed at the beginning of the year using the *Fountas and Pinnell Benchmark Assessment System, 2nd Edition* to obtain their reading levels, then again in November and February. They were also evaluated using the *DIBELS 6th Edition Nonsense Word Fluency Assessment* for second grade in September and again in February. The *Fountas and Pinnell* assessment measures for fluency, reading accuracy, and comprehension using leveled texts. The DIBELS Nonsense Word Fluency Assessment measures a student's ability to read letter sounds in single syllable pseudowords, the second grade version of the assessment was chosen as it matches the level at which the students were working in the *Foundations* program.

Group Results

The following chart shows the results of the benchmarking data from the current school year for the three students in the study, these benchmark assessments increase in reading difficulty as the students begin to read fluently and comprehend at higher reading

levels. The chart immediately after this chart shows benchmarking data for the previous (2016-17) school year.

Table 1

Fountas and Pinnell Benchmarking Data, 2017-18 School Year

Participant	Fluency (Words correct percentage)			Comprehension (Numerical Score)			Difference Between September and April		Number of Reading Levels Increased
	Baseline Sept. '17	Intervention Nov. '17	Post- Intervention April '18	B/L Sept. '17	Int. Nov. '17	Post. April '18	Fluency	Comprehension	
1	96%	96%	96%	6 out of 7; 86%	6 out of 7; 86%	6 out of 7; 86%	N/C	N/C	+1
2	99%	97%	99%	5 out of 9; 56%	7 out of 9; 78%	7 out of 10; 70%	N/C	+14%	+3

Table 1 (Continued)

Participant	Fluency (Words correct percentage)			Comprehension (Numerical Score)			Difference Between September and April		Number of Reading Levels Increased
	Baseline Sept. '17	Intervention Nov. '17	Post- Intervention April '18	B/L Sept. '17	Int. Nov. '17	Post. April '18	Fluency	Comprehension	
3	98%	98%	96%	9 out of 10; 90%	9 out of 10; 90%	9 out of 10; 90%	-2%	N/C	+4

N/C= No Change

Table 2

Fountas and Pinnell Benchmarking Data, 2016-17 School Year

Participant	Fluency (Words correct percentage)			Comprehension (Numerical Score)			Difference Between September and April		Number of Reading Levels Increased
	Sept. '16	Nov. '16	April '17	Sept. '16	Nov. '16	April '17	Fluency	Comprehension	
1	90%	N/A	97%	4 out of 7; 57%	N/A	6 out of 7; 86%	+7%	+29%	+2
2	98%	98%	100%	4 out of 7; 57%	5 out of 7; 71%	7 out of 10; 70%	+2%	+13%	+4
3	92%	N/A	98%	4 out of 7; 57%	N/A	7 out of 10; 70%	+6%	+13%	+3

In both years, the data was taken using the *Fountas and Pinnell* leveled passages for each of the participants. For two of the participants, a portion of the data had been lost or destroyed from the 2016-17 school year, in those cases, the table is marked “N/A.”

During the benchmarking process, the teacher selected passages at the appropriate level to first establish a baseline and then to test the effectiveness of the intervention during the post phase. These scores were converted into percentages to more accurately compare data and growth from one year to the next.

The following table shows the results of the *DIBELS Nonsense Word Fluency Assessment* from the current school year only.

Table 3

DIBELS Nonsense Word Fluency, 2017-18 School Year

Participant	Correct Letter Sounds (CLS)		Words Recoded Correctly (WRC)		Difference Between Baseline and Post Intervention	
	Baseline: Sept. '17	Post-Intervention: Feb. '18	Baseline: Sept. '17	Post-Intervention: Feb. '18	CLS	WRC
1	117 out of 142; 82%	128 out of 142; 90%	31 out of 50; 62%	37 out of 50; 74%	+8%	+12%
2	129 out of 142; 91%	134 out of 142; 94%	40 out of 50; 80%	40 out of 50; 80%	+3%	N/C
3	117 out of 142; 82%	128 out of 142; 90%	31 out of 50; 62%	37 out of 50; 74%	+8%	+12%

N/C=No Change

The participants were given the *DIBELS Nonsense Word Fluency* for grade two in September and then again in February of the same school year. They were screened for correct letter sounds (CLS) read and words recoded correctly (WRC) during each

assessment. Those scores were then converted into percentages to more easily compare growth over time.

In examination of the results, first of the *Fountas and Pinnell* benchmarks there has been growth across both years studied, although greater growth was noted in the previous school year. In some cases, during the current school year, no change in fluency or comprehension was noted as the participants read more difficult levels of text. The greatest increase in comprehension during the study occurred with Participant 3, who increased her comprehension by 14%, the greatest increase in fluency occurred with Participant 1 who increased his fluency by 7%. The greatest overall increase in reading levels during the intervention was Participant 3 who increased four reading levels this year, catching this student up with her non-disabled peers. When looking at the *DIBELS Nonsense Word Fluency Assessment* each student made progress with Participant 1 and 3 equally making the most progress for both correct letter sounds (CLS) and words recoded correctly (WRC) at 8%, and 12% increases, respectively.

The *Fountas and Pinnell Benchmark Assessment* participants read passages on their reading level and were scored on fluency and comprehension. From those scores, participants were then assigned to reading levels to increase their fluency and comprehension skills at that level through practice reading at that level. When they were tested again, they were scored on the same categories and were able to potentially increase reading levels at each benchmarking opportunity.

When assessing participants using the *DIBELS Nonsense Word Fluency Assessment* students read one syllable nonsense words that followed either a CVC or VC pattern. Using phonics rules that they already knew, students were expected to read the

nonsense words. In this way, they can be assessed on their ability to decode words in isolation that they have not yet seen, rather than rely on reading simple CVC words on sight.

Individual Results

For Participant 1, there was very little growth this year. While he did increase a reading level, he has not become a more fluent reader when reading words in a text. In isolation, however, his reading skills have increased. The *DIBELS* results for Participant 1 he showed an increase in correct letter sounds (CLS) by 8% from the baseline, and words recoded correctly (WRC) increased by 12%.

Participant 2's progress is nominal compared with those of the other participants. While his fluency remained fairly steady, starting and ending at 99% for the school year. His fluency was equally as high for the previous school year, where he ended the year with a fluency score at 100%. His comprehension, however increased by 14% from the start of the school year. Like his fluency scores in the *Fountas and Pinnell Benchmarks*, Participant 2's scores on the *DIBELS* are also constant from the start of the school year to the post-treatment phase, with an increase of 3% in correct letter sounds (CLS) and no change in words recoded correctly (WRC).

Participant 3 showed the greatest increase in reading levels throughout the current school year, already surpassing her level increase for the previous school year, with four months still left in the current school year. While her fluency decreased by 2%, and her comprehension level stayed constant throughout the year, she still made the greatest growth of all the participants. Participant 3's *DIBELS* scores have also shown significant

increase, with an increase of 8% for correct letter sounds (CLS), and 12% for words recoded correctly (WRC).

Chapter 5

Discussion

This study examined the effects of adding the Foundations Level 2 Reading Program to the educational program of three fourth grade students who are classified. The participants in the study were two male fourth grade students, ages 10 and 9, and a female, age 10. Each of the students is classified as eligible for special education services and has an Individualized Education Plan (IEP). Disabilities represented include attention deficit hyperactivity disorder (ADHD), autism spectrum disorder (ASD), fetal alcohol spectrum disorder (FASD), oppositional defiant disorder (ODD), other health impaired. These students have been placed in a self-contained classroom, as it is the setting in which they see the most success.

The results showed that all three of the students in the study showed similar growth in reading comprehension and fluency when compared to their overall growth from the previous school year. Participant 1's growth throughout the study were comparable to his results from the previous year, Participant 2, the least overall growth, but had marked improvement in his reading comprehension. Participant 3, however, surpassed her achievement levels from the previous year, with a few months still to go in the current school year with her comprehension remaining steady throughout the year.

In the previous school year, the students were taught phonics instruction using a variety of curriculum materials and supplemental materials provided by the teacher rather than a unified curriculum that was based on the New Jersey Student Learning Standards. In this way, using a program such as *Foundations*, allows for a more thorough, systematic

approach to teaching foundational reading skills, providing teachers and students with all of the tools and materials necessary for success.

Previous Research

Many of the more recent studies involving reading instruction, have been done utilizing the Response to Intervention (RTI) model for teaching struggling readers. Since the most recent revision of IDEA (2004), the RTI model is the model currently used in many schools across the country. Every student is screened for potential reading difficulty. In model, when a student shows signs that he or she may have reading difficulty, the student will begin receiving increasingly intensive levels of reading instruction based on how the student responds to that instruction, in addition to the student's regular whole class phonics and reading instruction. The goal is then to catch students before they fail and catch them up before they fail. (Fuchs & Fuchs 2006) The *Foundations* reading program can be used as part of this RTI program, and contains additional materials to support the higher tiers of an RTI program.

This study looked at one of the grade levels often overlooked in many studies: grade four and beyond. Wanzek et. al. (2013) completed a meta-analysis of ten studies regarding reading interventions for students in these higher grades. This indicates that the middle and high school student populations are often unnoticed when researchers consider how to best instruct struggling readers. These students still require and deserve intensive reading instruction. Interestingly, the study authors noted that the majority of the studies included in the meta-analysis were multi-component interventions. This is likely because older students who are struggling readers have difficulty in lower-level skills such as word recognition as well as higher-level skills such as comprehension and

vocabulary. In addition, they also noted that group size was not a significant factor in student results. In another study by Vaughn et. al. (2009) this theory regarding intervention group size was further strengthened. One thing was clear from this meta-analysis: students can make some progress with extensive interventions.

In another study by Kim, et. al. (2010) researchers examined the use of the program READ 180, a program with designed for struggling readers in the middle grades that targets reading comprehension, vocabulary, and writing skills, with struggling readers in grades four through six. In the study, struggling readers received intervention instruction during an after-school enrichment program in either a control group or the treatment group with READ 180. The results of this study suggests that both programs (the READ 180 treatment group, and the control group, are effective ways to provide intervention for struggling middle school students.

The ultimate goal of teaching reading, is for students to be able to understand what they have read. Reading for comprehension also requires that readers be able to read fluently. Fluency develops in readers as they practice reading. Since many struggling readers do not practice these skills, they often lack the fluency needed to read for understanding. Many struggling readers have listening comprehension which surpasses their level of reading comprehension. This is likely because these students lack the decoding and fluency to read for understanding, which indicates that these skills are the foundation upon which all other reading skills are built (Archer 2003).

Limitations and Future Studies

The present study used only a small sample of participants. This was due partly to availability of subjects, and a small school size. While the results indicate that each

participant saw growth, a larger group of participants in future studies could provide a better, more accurate average growth for the entire group of participants. This study began at the start of the 2017-2018 school year and ended in February of the same school year. Participants might have shown greater growth; had the study lasted the entire school year. Future studies may want to follow students through an entire school year to observe all of the growth that is possible from an intervention such as a curriculum change.

Practical Implications

Showing how direct and explicit instruction can help struggling readers is of huge importance to elementary and special education professionals everywhere. Giving students instruction and then lots of practice to master these skills has shown to be successful for many students, whether they struggle with reading or not.

These foundational literacy skills are necessary for students to be successful in all academic subjects as students move into the middle and high school grades. In those grades, students will be required to read increasingly difficult texts in all of their subject areas. By this time, teachers expect that students have already mastered the foundational skills necessary to read for meaning as independent readers. When students are unable to do so, their teachers will need to rely on strategies such as those found in *Foundations*, for teaching those lacking foundational skills so that they may be successful.

Conclusion

The aim of this study was to examine and answer the following questions:

-Do fourth-grade students with disabilities reading via the *Foundations* reading program make significant improvements in reading compared to their performance from the previous year?

-Will explicitly teaching phonics skills also create an increase in reading comprehension?

The data shows that the study participants experienced at least the same rate of growth as the previous year, with one participant in particular showing greater growth than others. Struggling readers will require a greater amount of explicit reading instruction in these areas than their peers.

The teacher reported that participants, overall were engaged in the lessons and that they felt more confident about their reading abilities. They read more often and were more likely to find books that they would enjoy than they had the previous school year. This in and of itself shows additional successes for the program that the assessment data is unable to show.

After reviewing many articles regarding teaching reading to struggling readers, especially those past grade three, the participants in this study showed great success. Many studies indicate that achieving success in the higher grades is much more difficult than in the lower elementary grades, partly because many of these students are part of the 30% of students who did not respond to intervention in their earlier grades (Whiteley 2007). However, educators should not give up and should continue interventions with these students in the hopes that they will see some improvement over time.

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