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Direct instruction in blending and segmenting phonemes

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DIRECT INSTRUCTION IN BLENDING AND SEGMENTING PHONEMES

by

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A Thesis

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Dedication

I would like to dedicate this work to my husband, Nick and my son, Logan. Thank you to my husband for your love and support during this whole process and being my rock. To my son who has heard “I’m sorry buddy I have school work to do” for the last two years, it’s finally over. I love you both to infinity and beyond.

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Abstract

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The purpose of this study was to examine how third grade special education students reading abilities were affected after receiving direct instruction in phoneme segmentation and blending. During the study students spent an average of two weeks practicing segmenting phonemes and another two weeks blending phonemes utilizing various activities. The last weeks of the study focused on applying the skills into actual reading situations. The study showed benefits in various areas including the utilization of manipulatives in relation to phonemes. Students were also positively impacted directly after receiving the direction instruction and practice activities, as there was an increase in abilities after each section of instruction. When asked to utilize all skills together, students often needed teacher prompting to enact those skills in context. Overall, the study was looking at how well older students benefited from direct instruction in foundational skills. The results found there to be benefits even to older students.

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Chapter 1

Introduction

I am sitting at my desk looking over the results of a Yopp-Singer Test of Phoneme Segmentation assessment and thinking to myself.

"Is this for real? How have I never noticed this before? He is in third grade and he cannot segment the sounds in a word. "

These are the things that ran through my mind right after excusing a student from my small group table. I had just finished administering the Yopp-Singer Test of Phoneme Segmentation as a part of the requirements for one of my graduate courses. Five minutes before this, I was administering the assessment to Mark.

Me:	Alright Mark (pseudonym) today we're going to play a word game. I'm going to say a word and I want you to break the word apart. You are going to tell me each sound in the word in order. For example, if I say "old," you should say "/o/-/l/-d/." Let's try a few together. "Ride."
Mark:	ride.
Me:	Let's say each sound in the word "ride". Like this "/r/-/I/-/d-". Now you try the word "go".
Mark:	/g/-/O/.
Me:	Great job. Let's try one more. What are the sounds in "man"?
Mark:	/m/-/an/.
Me:	Good you said all of the sounds in "man," but next time I want you to say each sound separately. Like this "/m/-/a/-/n/". Ok let's try some more. What are the sounds in "dog"?
Mark:	/d/-/o/-/g/.
Me:	Great! "Keep"
Mark:	/k/-/Ep/

I note on the recording sheet that Mark has segmented the initial sound; however, he blended the rest of the word. Since we have begun the assessment, I do not correct him and just note what he says on the paper.

Me: fine.

Mark: /f/-/In/.

Me: no.

Mark: /n/-/O/.

Me: she.

Mark: /sh/-/E/.

Me: wave.

Mark: /w/-/Av/.

We continue and finish the assessment. Words that contain two sounds (or phonemes), Mark successfully segments; however, words that contained three sounds were more difficult for Mark. When Mark was given a word with three sounds he would isolate the onset and blend the rime; therefore, I was only able to give him credit for one sound in the given word.

After the assessment, as I sat at my table tallying the sounds that Mark identified correctly and realizing that he was not able to segment half of the total sounds in this assessment. I sat wondering is this part of his disability? Is this why he has been classified as reading disabled? Is this why he is currently reading on a late kindergarten reading level?

Then another thought occurred to me. The first time I was introduced to the Yopp-Singer Test of Phoneme Segmentation was during a graduate level word study

course. During that course I had to administer this assessment and a few other assessments related to concepts about print to a child that was in kindergarten. The student I used had just entered kindergarten, after attending half-day, public preschool for two years, and he was able to segment almost all of the sounds in the words given to him using the Yopp-Singer. Comparing these two boys: one in kindergarten, one in third; one "typically developing" and one considered reading disabled, I wondered how many of my students are lacking in phoneme segmentation like Mark? Could this be at the root of those students who have trouble with decoding?

Purpose Statement

The National Reading Panel (2000) has identified five pillars of reading: phonemic awareness, phonics, fluency, vocabulary, and comprehension. Explicit and systematic instruction in these areas has been found to be effective in reading instruction (2000). In the article, *Response to Intervention for Reading Difficulties in the Primary Grades*, Denton (2012) states that the goal of early reading instruction is to develop accurate and fluent reading in children. This early reading instruction as well as early intervention of reading instruction for students seen as 'at-risk' has proven to be successful in helping children learn to read; however, what about students who have reading disabilities? Can those early intervention strategies be successful with older students? This study looks at the effects of some of those early intervention strategies such as phonemic awareness, specifically blending and segmenting, on students who have been classified as reading disabled and continue to struggle to read in the third grade.

Ehri et. al. (2001) and Suggate (2017) argue that studies have shown that students who have received instruction in phonemic awareness have higher reading abilities than those who have not received that instruction. Phonemic awareness is being able to orally manipulate the sounds that are heard in a word, whether that be through simply identifying each sound or adding and deleting sounds to a presented word to make a new word (Ehri et. al., 2001; Yopp & Yopp, 2000). Students who are learning to read and write in an alphabetic system such as English need to be able to break down the units of sound in order to read and write correctly, as this alphabetic system requires the user to utilize the spoken language in a print format: reading and writing (Yopp & Yopp, 2000). The current study is looking at two components of phonemic awareness: segmentation and blending. Blending phonemes together assists children with decoding unfamiliar words, while segmenting words helps children spell those unfamiliar words, as well as retain the spelling of those words (Ehri et. al., 2001). Research (Ehri et. al., 2001) has also found that these two elements of phonemic awareness are the two components that benefit reading more than any other phonemic awareness elements (phoneme isolation, identify, categorization, and deletion). Students benefit the most from explicit instruction that is deliberate and purposeful (Ehri et. al., 2001; Yopp & Yopp, 2000) through modeling, providing guided practice, and independent practice in the context of real reading. Manipulatives or concrete representation of sounds have also shown to benefit at-risk and reading disabled learners. Manipulatives (Yopp & Yopp, 2000) may include, but are not limited to auditory cues through clapping the syllables, visual representation utilizing chips to stand in for sounds, jumping to repeat sounds for kinesthetic learners, as well as using letter magnets to provide students with a more

concrete visual of sounds relation to print letters. Rasinki (2017) has argued that despite increased attention and focus on the national reading struggle through the inception of multi-level policy mandates, advanced teacher training and motivation, and the increase of quality children's literature, many students continue to struggle in learning how to read. It has been suggested (Rasinki, 2017) that deficiencies in foundational skills such as word recognition are a major factor in these struggles. Students need to be given intensive support regarding word identification in order to correct issues and prevent further issues regarding other areas of reading (Rasinksi, 2017). Students in a late primary grade such as third grade have shown reading growth with explicit phonemic awareness instruction (Suggate, 2014), thus providing evidence for an argument that third grade is not too late for intensive interventions.

Statement of Research Question and Problem

The question I am researching is: What happens to 3rd grade special education students' reading abilities when provided with explicit instruction in phoneme segmentation and blending? The purpose of this research is to study the impact that direct instruction of specific phonemic awareness skills, explicitly blending and segmenting phonemes has on special education students' reading abilities. My students have difficulties decoding unknown words while reading. They also have shown through assessments that they have limited abilities in manipulating sounds heard orally.

Story of the Question

After taking a word study course during my graduate courses, I began to wonder why many of my students were struggling with phonemic awareness skills, such as

segmenting and blending phonemes. Many of my students at the time were classified as specific learning disabled: reading disabled with specific skills such as phonics and decoding identified as areas of need. With the start of the new school year, the majority of my students again are classified as Specific Learning Disabled, with sub-categories in areas of reading. Looking at the Developmental Reading Assessment 2 data that was taken from my students at the end of last year, they were all at least two years behind grade level in reading, with some three years behind grade level. At the start of the school year, all teachers administered the Dynamic Indicators of Basic Early Literacy Skills 8 (DIBELS 8) assessment (2019). This test included a Nonsense Word fluency subtest which showed me that my students were weak in the area of segmenting phonemes, along with decoding nonsense words. I began to wonder here if direct instruction in segmenting and blending phonemes would improve my students decoding abilities of unknown words.

Organization of Thesis

Chapter two presents a review of the literature that discusses the research addressing the importance of phonemic awareness when students are learning to read as well as the benefits of explicit, direct instruction in phoneme blending and segmentation. Chapter three provides information regarding the context of the study such as the community, district, and school where the study took place. It describes the student and the teacher participants as well as the research methods and sources of data. Chapter four analyzes the data gathered during the six weeks of the study. Chapter five presents the conclusion and discusses limitations as well as implications for future research. remaining gaps in the research along with implications from the research.

Chapter 2

Review of the Literature

> Phonemic awareness in kindergarten appears to be the single best predictor of successful reading acquisition. (International Reading Association, 1997)

According to the International Reading Association (1997), "longitudinal studies have shown the acquisition of phonemic awareness is highly predictive of success in learning to read - in particular in predicting success in learning to decode." Not all phonemic awareness tasks are predictive though. Those that demand attention to the spoken language, rather than those that ask children to name letters or identify sounds, are the tasks that researchers look at when predicting a child's reading ability early on (IRA, 1997). Phonemic awareness instruction increases a student's awareness of the sounds that make up words and is required in the decoding of text while reading (Suggate, 2014). The review of the literature in this chapter takes a look at phonemic awareness (PA) and how it may impact children's reading when are deemed at-risk or special education and how strategies such as direct instruction (DI) may impact those learners.

In this first section the literature discusses phonemic awareness and the skills under the umbrella of phonemic awareness. The second section discusses the research regarding direct or explicit instruction and the benefits that are seen with students when provided with direct instruction (DI). The final section reviews research about students who have been deemed at-risk of having reading problems, which also leads to discussion of Keith Stanovich's work regarding the Matthew's Effect in reading.

The Importance of Phonemic Awareness (PA)

To understand what is being discussed when one says "phonemic awareness" one must be familiar with some frequently mentioned terms, as well as be aware of the difference between phonemic awareness and phonics.

- Phonological Awareness refers to larger units of sound such as syllables (parts of a word with a vowel sound that are pronounced), onsets (the initial sound of a word), and rime (the remaining part of the word following the onset) (IRA, 1997).
- Phonemic Awareness is the understanding of phonemes in oral language and being able to manipulate those sounds through segmenting and blending (IRA, 1997).
- Phonemes are the smallest units of sound in a spoken word (IRA, 1997: Ehri, et al, 2001).
- Graphemes are the written units of language and represent phonemes in the spellings of words (Ehri, et al., 2001).
- Phonics refers to knowing the relationship between specific printed letters and specific, spoken sounds (IRA, 1997).

According to the International Reading Association's position statement regarding phonemic awareness and the teaching of reading (1997) the idea that there is a correlation between a child's ability to recognize individual sounds in a spoken word and reading disabilities dates back to the 1940s. For more than 50 years there have been ongoing discussions and research regarding children's awareness of these sounds and their ability to read (IRA, 1997).

According to Ehri, et al., 2001 in their article *Phonemic awareness instruction helps children learn to read: Evidence from the National Reading Panel's Meta-Analysis* studies have shown that often phonemic awareness is part of a causal relationship with learning to read in general, even if the PA instruction is not direct. The IRA (1997) supports these findings stating that natural development of PA occurs early on in a child's life in the home, during parent read aloud and engagement regarding print materials. If this does not happen in the home before formal schooling begins then it is up to the school to ensure that these relationships develop in the classroom. Often times most children will acquire PA naturally in the school setting through language exploration and print engagement. This acquisition occurs over time and gradually develops from easy to difficult - rhyming to segmenting. By the middle of first grade more than 80% of children have naturally acquired PA (IRA, 1997).

According to Szabo (2010), phonemic awareness is a skill that is often looked for in standardized tests in early elementary years, yet most schools do not test for PA after first grade. The Dynamic Indicator of Early Literacy Skills (DIBELS) is a validated screener that is often used to determine strengths and weaknesses in areas such as letter recognition, letter sound recognition, phonemic awareness, nonsense word fluency, word fluency, and oral reading fluency. Depending on the grade a child is in determines which subtests are given for that grade, as it is assumed that as children progress through their education they would have mastered certain skills by a certain point. For example, phonemic awareness has a specific subtest, Phoneme Segmentation Fluency; however, this subtest is not included from third grade on as a part of the series of skills looked at or tested (University of Oregon, 2019).

According to Ehri et al., 2001 the skill of phonemic awareness is tied to reading because the written form of the English language is alphabetic, where words have specific spellings, in which they utilize graphemes to symbolize the phonemes in predictable ways. However, matching phonemes (individual sounds) to graphemes (the written form) is difficult for children as there are no cues to assist them with recognizing the end of a sound. The sounds tend to roll right into the next one, which can make decoding unfamiliar words difficult for those who do not have phonemic awareness or a fluid knowledge of. Ehri et. al. 2001 determined in their research that the ability to blend phonemes is a key contributor to decoding unfamiliar words, while segmenting words (taking sounds apart in a word) into phonemes helps children spell unfamiliar words and retain those spellings to memory. An additional benefit to PA is assisting children in storing sight words to memory. Children match graphemes to phonemes in a word and retain that specific pattern to memory, to aid in the recognition and automatic recall of sight words (Ehri, et. al. 2001).

Ehri et al., 2001 laid out the specific skills in their order of difficulty, least to most, that researchers utilize to assess and instruct with:

1. Phoneme isolation - recognizing a given sound in a word
2. Phoneme identity - recognizing common sounds among given words
3. Phoneme categorization - recognizing the odd sound in 3 or 4 given words
4. Phoneme blending - listening to a sequence of spoken sounds (said separately) and combining them to form a recognizable word
5. Phoneme segmentation - breaking words into their sounds by tapping, counting, or putting a marker for each sound

6. Phoneme deletion - recognizing what word remains when something is deleted. (p. 253)

Ehri, et, al., (2001), IRA (1997), Pullen, et. al. (2005), and Yopp and Yopp (2000) found that instruction in blending and segmenting helped children the most with their reading, as opposed to instruction in the other multiple areas combined.

According to IRA (1997), early studies conducted in the area of PA focused on oral manipulation of the sounds; however, more recently research has found there to be just as much growth by incorporating print through read aloud and invented spelling, as solely with oral manipulation. Yopp and Yopp (2000) supported these more recent findings and expressed that "PA instruction should be playful and engaging, interactive and social, and should stimulate curiosity. It should be intentional and placed in the context of real reading and writing" (p. 132). Szabo (2010) conducted research that agrees with the idea of incorporating print and real reading and writing. Szabo's (2010) study looked at second grade teachers and students, who were coming up low in the graphophonics area of instruction. The teachers met regularly to discuss how PA instruction could be incorporated into their phonics and writing instruction to improve student's understanding of the graphophonics skill. Their ideas included encouraging students to stretch out word sounds, orally, while writing. The study found that with purposeful instruction included in current curriculum content that students were more aware of the individual and groups of sounds. The end of year assessments showed significant improvements across the grade level; however, it was suggested that for the small remaining percent of students that were still progressing in this area that they would benefit from further incorporation of explicit phonemic awareness instruction within the

curriculum content. Szabo's study (2010) showed that when PA activities were embedded with the current reading and writing curriculum more students were successful, leaving fewer needing intervention opportunities.

Phonemic awareness activities were looked at in the context of solely oral manipulation and with the use of concrete representations of the sounds. Ehri et. al (2001) explained that sounds are short lived in a child's memory, but with the use of letters as concrete, visual symbols, students have an easier time acquiring phonemic awareness, as well as a greater chance of transferring the skill to their spelling. Yopp and Yopp (2000) found that "the use of a concrete representation of sounds was easier for students to then make mental manipulations" (p. 133). The concrete representations that they looked at were auditory representations, such as clapping syllables, visual representations, through the use of blocks or chips to represent each sound, and kinesthetic activities, such as jumping with each sound. Ehri et. al (2001) and Pullen, et. al. (2005) saw student success by utilizing magnet letters to represent sounds/phonemes while blending the sounds into words. The magnet letters did not create stronger PA but did have an effect on the students' decoding ability in post-tests and overall reading.

These studies have shown specific PA instruction that benefits students, as well as how to present the instruction to students. Yopp and Yopp (2000) found that the duration of instruction could also affect a student's abilities. The optimal amount of instruction time was between 10-30 minutes per session, with sessions ranging in frequency from daily to 2-3 times per week, over the course of 3 weeks to 2 years. They noted that the quality of instruction and the responsiveness to instruction in relation to individual students on the teacher's part were the most important aspects of PA instruction. While

Ehri, et. al. (2001) and Pullen, et. al. (2005) found that PA instruction was most effective when presented in a small group, and noted that there was a greater increase in PA when children were taught with explicit instruction.

What is Direct (Explicit) Instruction (DI)?

> Direct Instruction is an essential feature of a reading instructional program to help struggling students become better readers. (Rupley, Blair, Nichols, 2009, p. 134)

The term direct instruction is often used as a general term in reference to instruction that is led by the teacher. When writing about direct instruction many are not aware that there are actually a few different variations of what direct instruction looks like, though there are many overlapping features (Rosenshine, 2008). One of the variations is a general teacher-led definition. State departments of education and school districts use the terms direct instruction and explicit teaching interchangeably without narrowing down specifically what that means. Rosenshine (2008) stated that "we assume direct instruction is instruction where a teacher models and demonstrates a skill (p. 1)" in reference to state and district applicability. The second idea of direct instruction is the Teacher Effects Pattern. Here researchers looked for specific patterns of instruction, utilized by the most effective teachers as seen in classrooms where students were making the most achievement gains (Rosenshine, 2008). These studies all showed a specific pattern of instruction:

- Begin with a short review of previous lesson
- Begin with a short statement of the goals
- New material in small steps with student practice after each step

- Clear and detailed instructions and explanations
- High level of active practice for all students
- Asking a lot of questions, checking for understanding, and obtaining responses from all students
- Guide students during initial practice
- Systematic feedback/corrections
- Explicit instruction and practice for seatwork and monitoring work done. (Rosenshine, 2008, p. 2)

A third variation is the Cognitive Strategies Meaning. This strategy was seen in the late 1960s in reference to teaching procedures for higher level thinking in reading comprehension (Rosenshine, 2008). The instructional procedures for this model include:

- Modeling by the teacher
- Thinking aloud as the choices are made
- Providing cue cards of specific prompts to help students with strategies
- Divide tasks into smaller components, teach each one separately, and gradually combine into a whole process
- Anticipate student errors
- Encourage student thinking aloud during strategy use
- Provide reciprocal teaching by teacher and students
- Provide checklists
- Provide models of completed work. (Rosenshine, 2008, p. 3)

This instruction might be more commonly referred to as scaffolded instruction due to the number of scaffolds in place to support students while learning new concepts

(Rosenshine, 2008). Scaffolds can be broad aids such as modeling or more specific like a graphic organizer (Rupley, Blair, Nichols, 2009). The Teacher Effectiveness and the Cognitive Strategy have four similar elements that "reduce the difficulty of the task during the initial practice while presenting in small sections, scaffolds and support through modeling, thinking aloud, and initial guided practice, supportive feedback through systematic corrections and feedback, fix-up strategies, and expert models of tasks, and extensive student independent practice (Rosenshine, 2008, p. 4-5)". The final model is that of DISTAR, which originally stood for Direct Instruction Systems in Arithmetic and Reading, but is now just referred to as DISTAR (Rosenshine 2008). This method is often seen in specific curriculum programs such as Reading Mastery. DISTAR was developed by Englemann and his associates in the 1960s. Rosenshine cited three DISTAR researchers Gersten, Carnine, and Woodward (1987) who wrote that DISTAR has six critical features:

- Explicit step-by-step strategies
- Development of mastery at each step in the process
- Teachers are given specific correction procedures to use when errors are made
- Gradual fading of teacher direction as students move toward independent work
- Adequate and systematic practice through a range of examples on the task
- Cumulative review of newly learned concepts. (Rosenshine, 2008, p. 4)

This particular direct instruction method is often criticized for being too directed and inflexible due to activities like choral responses and teacher scripts. When direct

instruction is referred to in a negative light it is often this particular method that is being referred to (Rosenshine, 2008). Even though there are criticisms of this particular direct instruction approach, it does have many overlapping features with the Teacher Effects and the Cognitive Strategy methods: guided practice, active student participation, and fading teacher directed activities (Rosenshine, 2008). This approach is also composed of many components of Schema Theory: relating new information to past or known information, providing explanations why the new skill is useful, utilizing student interest, and providing step-by-step explanations (Rupley, Blair, Nichols, 2009). Much of what we know about effective teaching overlaps with many studies and known theories.

Rupley, Blair, Nichols (2009) found through teacher effectiveness studies that effective teaching consisted of direct instruction of what students needed to learn in the major components of reading: phonemic awareness, phonics, fluency, vocabulary, and comprehension. "Most students need explicit decoding instruction to gain an understanding of the alphabetic principle and become good readers (Pullen, et. al., 2005, p. 64)". Student learning does not happen simply because they are getting older in age; rather active communication and engagement are required (Rupley, Blair, Nichols, 2009). Modeling provides this communication and engagement, where students can see and hear how to use their learning through actual reading and thinking aloud about the skill. This leads to more meaningful practice situations in which students utilize varied types of text that are at an appropriate level for each student (Pullen, et. al., 2005, Rupley, Blair, Nichols, 2009). Another type of modeling that was found effective is that of coaching. For instance, researchers have found that many teachers teach a skill like phonics in isolation, then coach their students in real reading situations to utilize those previously

taught phonics skills (Rupley, Blair, Nichols, 2009). They did not provide the modeling and thinking aloud strategies before the practice began, but rather demonstrated the skill and then allowed students to try it and provided assistance when necessary. Rupley, Blair, and Nichols (2009) found with a group of first grade students that had received instruction utilizing four specific practices of "modeling word recognition strategies (chunking, sounding out/blending phonemes, what letter sounds make sense), finger pointing to words, manipulatives to compare/contrast sounds, and small group instruction to plan for meeting individual needs (2009, p. 133)" that those students were more successful in reading. Research has found that direct instruction benefits students' automaticity with decoding skills as well. Through the use of modeling expressive reading and exposure to text, students begin to recognize the word patterns and build sight vocabulary, leading to a more effortless word recognition (Pullen, et. al., 2005, Rupley, Blair, Nichols, 2009). This type of automaticity is crucial for proficient reading.

Cunningham (1990) described her research where direct instruction was utilized in kindergarten and first grade classrooms in two different contexts: one composed of 'skill and drill' type instruction in segmenting and blending, while the other group had a more contextualized approach. They were explicitly taught how to blend and segment phonemes while applying the skill to actual reading. Cunningham (1990) stated in her research that "many programs give children the procedural knowledge of how to segment and blend, but meta level knowledge of when and where to use it is usually not addressed (p.431)". Instruction that provides why segmenting and blending are helpful skills and when to utilize those strategies provides students with a better understanding; therefore, leading to higher retention and transfer, especially with older students (Cunningham,

1990). The results of the study showed that students engaged in the skill and drill approach made gains; however, the students that were involved in applying the skills in a contextual manner made more significant gains in both grades; while the first grade students were able to reflect on previous discussions of the value of segmenting and blending (Cunningham, 1990).

Additional research has shown that effective teachers are more flexible during lessons to provide additional modeling for struggling readers when needed (Rupley, Blair, Nichols, 2009). This is beneficial to the at-risk and special education population. Instruction should be explicit and systematic for this population. Direct instruction provides students with the skills necessary to make associations for skill acquisition and promotes consistent growth (Pullen, et. al., 2005). "The Individuals with Disabilities Act of 1997 requires "specially designed" instruction for students with disabilities to meet their unique needs (Kinder, Kubina, Marchand-Martella, 2005, p.1). This specially designed instruction refers to adapting content or the delivery of instruction in order to meet students' needs and ensure their access to the curriculum. This is where direct instruction plays an important role in special education students' learning. Through small group or one-on-one instruction, it allows for individualization to meet specific needs (Kinder, Kubina, Marchand-Martella, 2005). In "Evidence from Project Follow Through", a large educational study where at-risk students were followed over the course of years in their education career to determine the outcome of interventions, students with disabilities were looked at as well. The researchers found students who were instructed with direct instruction methodologies had patterns of growth from K-3, and even those with lower IQs showed consistent gains. This study also revealed that about one third of a

self-contained population of students who had been instructed using the DISTAR method made significant gains, returning them to a general education setting (Kinder, Kubina, Marchand-Martella, 2005).

At-risk and Classified Readers with Decoding Deficiencies

Students who are susceptible to becoming poor readers are often lagging behind in phonological awareness development (McNamara, Scissons, Gutknecth, 2011). Researchers have concluded that there are two primary developmental theories that struggling readers fall under: the lag model or the deficit model. The lag model consists of students who start out as poor readers; however, they will catch up over time and eventually become good readers. This is usually due to effective early interventions (Wei, Blackorby, Schiller, 2011). Students who fall under the parameters of the deficit model usually fall further and further behind from skilled readers as time goes forward (Wei, Blackorby, Schiller, 2001). It has been argued that early identification of students deemed at-risk of reading difficulties would allow teachers and other professionals to intervene, allowing programs and interventions to be developed to put these students back on track towards normal reading development (McNamara, Scissons, Gutknecth, 2011). Speech language pathologists have seen an increased emphasis on literature interventions, according to Foster and Miller (2007). They attribute this increase due to "a.) disabilities being predicted by pre-k/kindergarten, b.) reading disorders are often linked to underlying linguistic deficits, c.) treating emergent literacy problems (phonemic awareness) in the early grades can reduce/eliminate the need for reading intervention in later years for some students, and d.) students identified and treated for reading disorders in later elementary grades (3rd on) have a poor chance of catching up to typical peers

(Foster and Miller, 2007, p. 173)". However, early identification is not usually the case and many students are often overlooked for early intervention and diagnosed with a reading disability later in the primary grades, after there is a significant discrepancy between their grade level or IQ and their achievement. By this point, motivation and self-esteem may be affected by the continuous struggles with reading (McNamara, Scissons, Gutknecth, 2011).

Classified students. Wei, Blackorby, and Schiller (2011) stated in their study pertaining to students with disabilities and growth in achievement that under the No Child Left Behind Act of 2001 that "all students who are classified under any of the IDEA's thirteen disability classifications except those taking state assessments based on alternate or modified standards, are held to the same standards and assessments as those without disabilities" (p. 90). This poses a problem as many students that have a disability face reading challenges. McNamara, Scissons, Butknecth (2011) discussed how many students with poor phonological awareness also have motivational factors at play, and due to repeated reading difficulties, often begin their school experiences at a disadvantage compared to their non-disabled peers.

Being able to close the gap between disabled and non-disabled students is dependent on one's idea of proficiency amongst the different disability groups. One must decide how much growth is required for a student to be deemed proficient, as well as how growth can be accelerated among the different groups (Wei, Blackorby, Schiller, 2011). Learning disabled students are over half of the classified population in the United States. These students often have difficulties in more than one area of foundational skills, such as phonemic awareness, and have serious problems learning to read. Learning disabled

students typically have a slower working memory and less attention, which then hinders their reading comprehension and vocabulary acquisition (Wei, Blackorby, Schiller, 2011). Learning disabled students may make up a large portion of the disabled population in the United States; however, they are not the only students with disabilities that face reading challenges. Wei, Blackorby, Schiller (2011) compared the reading abilities and growth of different disability groups to students classified as learning disabled. The research found that students with speech and hearing impairments, as well as autism had a lower rate of growth compared to learning disabled peers. Intellectually disabled students performed lower than learning disabled students on standardized reading assessments; however, emotionally disturbed students performed better than their learning disabled peers (Wei, Blackorby, and Schiller, 2001). Schaars, Segers, and Verhoeven (2017) conducted a longitudinal study of students who were genetically predisposed to dyslexia in regards to their early word decoding abilities. The study found that during the early months of reading instruction, students in the at-risk group, those who were genetically predisposed to dyslexia, were making slower progress in word decoding. After receiving explicit instruction growth remained the same between the at-risk group and the non-at-risk group in regards to simple words; however, as more advanced words were introduced the non-at-risk group made growth at a faster rate than the at-risk group. The implications suggest that phonemic awareness deficits, such as word decoding, as seen in students with dyslexia may adversely affect the development of consistent spelling representations of words during reading instruction (Schaars, Segers, Verhoeven, 2017).

The Matthew's effect in reading. Stanovich (2009) has described the idea of poor readers becoming poorer as the Matthew's Effect, where the rich get richer and the poor get poorer. He found that students with positive early education experiences were able to utilize new experiences to their benefit, as well as surround themselves with a more positive environment. For example, a good reader will associate with other good readers, ask for books as gifts, and choose reading as an independent activity over video games (Stanovich, 2009). Poor readers do not practice these types of positive relationships with books and reading. Stanovich (2009) has indicated that some level of explicit phonemic awareness is required for the acquisition of the knowledge of spelling to sound correspondence, to support independent decoding. However, students who have difficulty with this skill often become poor readers which then has a snowball effect. This leads to poor readers being exposed to less text than their non-struggling peers, and when they do choose reading material it is often too difficult for them, but represents material that is often seen at their grade level (Stanovich, 2009). Poor readers often have deficient decoding skills which leads to a lack of reading practice, combined with difficult reading material then leads to unrewarding reading experiences, which leads to less involvement in reading related activities (Stanovich, 2009). This lack of exposure to just-right books and reading practice delays the development of automaticity and word recognition. Struggling students expend mental resources and effort attempting to decode words, while these higher cognitive functions should be focusing on comprehension. This becomes a downward spiral effect where students reading for meaning is affected which makes reading an unrewarding experience, so practice is avoided or tolerated without any involvement in the material (Stanovich, 2009). This disparity between good and poor

readers is seen other areas as well, such as vocabulary. Good readers read more and display a stronger vocabulary, which leads back to more reading and more words learned; therefore, they continue to become better readers. While poor readers tend to have a poor vocabulary, which leads to slower reading and lack of enjoyment, taking them back to reading less prohibiting vocabulary development; therefore, slowing reading growth (Stanovich, 2009). Stanovich (2009) has described other areas of development as problematic in students who are reading disabled. He stated they often have speech and auditory processing problems, leading to below average listening comprehension skills and overall general comprehension strategies. Stanovich (2009) has attributed other problems to this cyclical nature of poor readers such as eroding motivation which increases the probability of failure, learned helplessness, and giving up when something is perceived to be difficult while possibly never trying to long enough to achieve success (p. 42). Since the idea of a Matthew's Effect in reading has largely been accepted, there has been a greater focus on early identification and support for children with poor phonological awareness (McNamara, Scissons, Gutknecth, 2011).

At-risk students. McNamara, Scissons, and Gutknecth (2011) conducted a four-year study to see how utilizing a kindergarten screener could significantly predict those at-risk for developing reading difficulties by third grade. Each year students were administered the Woodcock Reading Mastery sub-tests, Word Identification and Word Attack. These subtests measure students' decoding abilities through pseudoword utilization of increasing difficulty. The Word Attack results indicated that with each grade level increase the students who demonstrated poor phonemic awareness were falling further and further behind their peers with each successive year they were in

school. The Word Identification subtest indicated the same results (McNamara, Scissons, and Gutknecth, 2011). The implications of these results showed that not only were students falling behind in decoding skills, the deficit was being carried over to fluency, suggesting poor phonological decoding (McNamara, Scissons, and Gutknecth, 2011). This delay in decoding efficiency comes with a cost according to Foster and Miller (2011), while these students were focused on decoding mastery, other groups had already made substantial growth in reading comprehension. Once the decoding deficiencies are improved upon by the lower group they are then behind in other areas such as comprehension, so they have gone from delayed decoding to delayed comprehension (Foster and Miller, 2011). McNamara, Scissons, and Gutknecth (2011) findings support the need for the importance of early intervention and supporting students at-risk for reading difficulties. It is crucial for the early identification in order for professionals to develop and integrate an intervention plan during the early elementary years. This early intervention may significantly reduce the number of children who would be diagnosed with reading disabilities (McNamara, Scissons, and Gutknecth, 2011). Again, as much of the previous research has stated, effective instructional programs in phonemic awareness need to begin with explicit modeling how to blend sounds together, while including opportunities for children to manipulate phonemes in actual reading (McNamara, Scissons, and Gutknecth, 2011).

The literature has shown that phonemic awareness abilities in early grades is one of the main indicators of reading success in later grades. However, those students who have been deemed at-risk for reading difficulties and/or display a reading disability, need additional and often intensive support in phonemic awareness to begin to close the gap

with non-struggling readers. The literature has supported the idea of direct instruction through explicit modeling, scaffolds, and authentic reading practice with leveled text as a form of effective instruction to support struggling readers.

Chapter 3 will explain the research methodology, as well as the context of the study. The research methodology will describe the type of research that is being conducted as well as how. While the context of the study will elaborate on the participants and the setting of the study.

Chapter 3

Research Methodology, Context, and Design

In this chapter readers gain an understanding about two major parts of the study: research methodology and the context of the study. The research methodology section describes the type of research that is being conducted in this study as well as how the teacher went about providing direct instruction to the students and concluding with the types of data sources to be analyzed. The second part of this chapter is the context of the study which provides information about the district, the students, and the teacher participating in this study.

Research Methodology

Research design. Basic or Qualitative research was chosen for this study as it is a research methodology most frequently utilized to understand a phenomenon, process, or perspective (Merriam, 1998). The phenomenon this study is looking at is that of how direct instruction in a specific set of skills affects a special education student's reading ability. By using a basic qualitative research method, I am able to analyze observations, work samples, conversations, and assessments to analyze and describe the participants reading abilities after receiving direct instruction (Merriam, 1998). Basic qualitative research looks for patterns across categories and/or themes, it does not build a theory. This type of research is beneficial to a teacher researcher as, "teacher research is a process of discovering essential questions, gathering data, and analyzing it to answer those questions (Shagoury & Power, 2012, p. 2)". Teacher research, such as I am conducting, can be used to assist in solving a problem in the classroom. Teachers use the data from the research to better inform their instruction to assist in closing gaps in

instruction and curriculum. It may be necessary for curriculums to be adjusted and/or teaching methods to be altered to better meet the needs of the students, based on the findings from the research (Szabo,2010).

Procedure of the study. The research study took place over six weeks. Week one focused on me segmenting sounds and the students blending the sounds together to form a word. I would tap a word out down my arm and then students would have to manipulate the sounds back together and tell me what word I was trying to say. The words were mostly short vowel CVC words; however, as the week went on, I included words with initial and final digraphs and initial and final blends. During the second week I continued to focus on students hearing the sounds in words that were told to them orally. I gave them two different words and they had to tell me what sound was the same. Throughout the week we worked on initial, final, and then medial sounds. The week concluded with progress monitoring student progress through the use of the DIBELS 8 progress monitoring assessments of the four sub-tests that were initially given to them at the beginning of the school year. During weeks three and four, I began asking my students to tell me how many sounds in a word. We practiced this skill a number of ways such as me segmenting the word and them telling me how many sounds are in the word. Then me saying a whole word and them segmenting the word and telling me how many sounds in the word. I followed up by using Elkonin sound boxes and chips to identify the sounds in a word and the number of sounds. By the middle of week four we had progressed from using chips to identify sounds to using magnet letters, so students could begin to associate the sound with the physical representation of a letter(s). At the end of week four another progress monitoring of the four subtests of the DIBELS 8 was administered to

check on student progress, and to guide instruction for the final two weeks. During week five students were given nonsense words and taught how to segment the sounds, using magnet letters, so students could physically touch each sound and push it as they sounded it out. Week six then had the students reading words with spelling patterns that students were currently working on, so they could practice sounding the words out; again utilizing magnet letters so they could push each sound as they said it. Towards the end of the week students were given decodable readers and leveled text to practice the segmenting and blending skills in context of an actual book. After the six weeks, students were given a post-test comprising of all four DIBELS 8 subtests.

Data collection methods. There were multiple sources of data looked at to study the impact of direct instruction on student reading. I created a daily sheet for anecdotal records where I could record the lesson taught, as well as any notes about how each student did that day. I recorded how many sounds or words they were able to blend or segment correctly, out of how many were given. I also noted if there was a specific skill that a student struggled with or one that they did well.

A second data source was my teacher research journal. Throughout the study I kept notes of tasks that should be worked on further, after conducting progress monitoring, as well as things that surprised me during those sessions. I utilized this journal to record assumptions I had made before, during, and after the study that correlated to what I was seeing and hearing my students do. I recorded here what I was seeing during instruction to be more reflective on my teaching. I noted what areas students had more success with and which ones were more difficult, along with ideas on

how to make those struggles easier and provide the students with a better understanding of what we were doing.

A third data source was the results from DIBELS 8 subtests. At the start of the year students were given the beginning of the year benchmark assessment for the DIBELS 8 (2019), using the first grade assessment. The four sub-tests that I utilized were Phoneme Segmentation Fluency, Nonsense Word Fluency, Word Reading Fluency, and Oral Reading Fluency. I chose to give my third grade students first grade assessments, as the majority of their reading levels were on a first grade level. The benchmark test served as the pre-test for the research data. I created a recording sheet for each of the subtests, so I could look at the data across the five tests they were given: pre and posttest, and two progress monitoring assessment**s.** From there I created graphs so I could look for consistencies across all of the participants, as well as troublesome areas.

Plan for data analysis. The data collected during the study from the Phoneme Segmentation Fluency, Nonsense Word Fluency, Word Reading Fluency, and Oral Reading Fluency DIBELS 8 (2019) subtests was charted and graphed for each test to look for patterns over the course of the six weeks and to see if there was an overall growth from pre to posttest with all 12 participants. The data was also charted and graphed for each student for each subtest to notice any patterns along with areas of strength and weaknesses. While looking at the physical data from the DIBELS subtests, I cross-referenced the data with the observational notes I took from sections of instruction to see if what I noticed during instruction matched student performance. I also considered my research journal and what I was thinking about student progress during that portion of the study and if student performance matched my assumptions and predictions. Much of the

collected data pertains to words in isolation, although towards the end of the study students began applying these strategies to words in context. Student performance in isolation was considered when looking at student performance in context through the use of anecdotal notes and the teacher research journal.

Context of the Study

Community and District. The study took place in the Mid-Atlantic region of the United States in a district comprised of three schools, serving students from Pre-K-6th grades. According to the Census data of 2010 the community has 16,820 residents with 5,735 households. The median home value is $198,100. The median income is $81,057. The town is 55.9 square miles with a population of 300 per square miles. The racial make-up of the town consists of 84% white, 7% African American, and 7% Hispanic. According to the New Jersey Department of Education school report card (2019) this school district has 1,409 students; of those students 32% are economically disadvantaged and 16% are classified with disabilities, with a rate of 7% of the students being labeled as chronically absent. White students comprise 79% of the district, along with African-American students at 6% and Hispanic making up 10% of the students.

School. The specific school where the study took place houses only third and fourth grade students. According to the New Jersey Department of Education school report card, during the 2018-2019 school year there were 420 students attending this elementary school, with 80% of them being white students, 6% African-American, and 9% Hispanic. Of these 420 students 30% are considered economically disadvantaged and 21% of the student population has a disability. At this particular school 8% of the students were chronically absent during the 2018-2019 school year. Classrooms at this

school are departmentalized. Each student has a teacher for English Language Arts (ELA) and one for Math. The ELA teachers also teach Social Studies and the Math teachers also teach Science and Health. Students spend half of the year in Social Studies and the other half of the year in Science and Health. The special education resource rooms are also departmentalized in both third and fourth grades, with one teacher for ELA and one for Math. The resource room in this district is a replacement class. The students spend their full 80 minute ELA and/or Math time in the resource room, if that is determined to be their least restrictive environment.

Teacher and Students. The study took place in my third grade ELA pull-out, resource classroom. The classroom has one special education teacher (me) and a classroom aide (the same one for both classes). I see two small groups of students every day for ELA; both groups consist of seven students. I was given consent for 12 of the 14 students to participate in the study after consent forms and information regarding the study were distributed. Of the 12 students participating there are 8 boys and 4 girls, ranging in ages from 8-9. Of those students there are 10 white students, 1 African-American, and 1 Hispanic student. Two of the students are classified as Other Health Impaired, one classified as Communication Impaired, and the remaining nine are Specific Learning Disabled. Under the category of Specific Learning Disabled are sub-categories: reading comprehension, which included seven of the students, basic reading skills which included seven of the students, written expression which included four of the students, and reading fluency which included six of the students. Eight out of nine of the students with the classification of Specific Learning Disabled had at least two of the sub-categories mentioned above. One student did not have any of the subcategories listed.

In the next chapter, the focus pertains to data analysis and looking for common themes and patterns. The teacher research journal, along with observational notes were cross-referenced with the data that was found during formal assessments.

Chapter 4

Data Analysis

As mentioned in chapter 1, this study looks at what happens to 3rd grade special education students' reading abilities when provided with explicit instruction in phoneme segmentation and blending. Over the course of six weeks students spent approximately two weeks receiving explicit instruction in blending oral phonemes, approximately two weeks segmenting oral phonemes and utilizing manipulatives to represent those phonemes, and approximately two weeks practicing both concepts, as well as applying them in context to text read. The study utilized the teacher research journal and observational notes, as well as findings from pre/post tests and progress monitoring utilizing the DIBELS 8 (2019) subtests: Phoneme segmentation fluency, Nonsense word fluency, Word reading fluency, and Oral reading fluency. I have organized this chapter by discussing what I saw while teaching blending in isolation, segmenting in isolation, and then putting the processes together.

Before beginning instruction, I explained to my students that over the next few weeks we were going to be working on "sounding out" (segmenting) and putting all the sounds together (blending) to make a word. I asked my students if they had ever sounded out a word before. They were eager to show me how they had sounded out words in prior grades. Many students used their fingers to tap each sound, based off of a technique taught in a program utilized in the younger grades. While another student stated that their uncle showed them how to tap words down their arm. This discussion made me hopeful that during the sounding out portion of direct instruction that my students would have a better understanding of what they were supposed to be doing.

How Do We Blend Sounds?

During the weeks of blending instruction students participated in a variety of activities to practice what was modeled. For instance, the students were asked to listen to the sounds that I was saying and tell me what word I was trying to say. I said the individual phonemes for ten simple CVC short vowel words. The last two words were still short vowel words; however, they contained initial blends. I wanted to provide them with a challenge at the end and see if they could blend together something a bit trickier such as a blend. Out of 12 participating students, 3 of them were able to correctly blend all 10 words, and 7 of them correctly blended 9 out of 10 words. Five of the students were able to quickly blend the sounds together after hearing them. They were often manipulating the sounds I was saying so quickly in their heads and saying the word, that some of their group mates were unable to have a chance to say the word I was trying to say. After this first day, I altered the method in which I received answers. From the second day forward I would go around the table and give each individual their own turn with different sounds and words. This first day success made me hopeful that the participants would be successful in future activities. Some of the errors I saw consisted of missing sounds when blending. For instance, Liam said “sap” for “slap”. While another error was replacing a final consonant sound, which could have been a case of mishearing the sound, such as “sum” for “sun”.

Another activity the students were asked to do was similar to the previous activity; however, I utilized CVC short vowel word cards. I would say and tap the sounds down my arm, as a visual for each sound, and then students would blend the sounds together and tell me the word. I would then show them the picture card so they could

determine if they were correct, if they were they got to keep the picture card, if not it went back into the pile. For this activity, 10 out of 12 students were correctly able to blend all of the words given to them. This was an increase over the previous day, which further added to my own encouragement that my students were more capable of this skill then they initially demonstrated during the pretest. My one student was very excited that I was utilizing the tapping down the arm method since it was something they were familiar with. I chose to use this method of visually tapping out each sound because it would involve more gross motor movement on the students' part when they started tapping the sounds out and I wanted to stay consistent between how I tapped out sounds and how they did.

The students also drew pictures of words they blended together after hearing the sounds. I randomly pulled one of the CVC short vowel picture cards and said and tapped the sounds down my arm. Students then drew the word I was trying to say on their paper, as well as attempted to write the word. The students were encouraged to segment the sounds again when they tried to write the words. For this activity, 11 out of 12 students correctly blended the sounds into known words and drew the correct picture representation. *See Figures 1-3.* During this activity I started seeing quite a few students retapping the word down their arm, as they tried to blend the sounds together and determine the word. I was happy to see imitation from the modeling take place independently. The one error that occurred during this activity was when Sam drew and wrote "stop" for "sock". As he tried to determine what the word was, I watched him say each sound repeatedly, and I even retapped the sounds again. I wondered if maybe he was

saying the sounds so much and thinking about what the word could be that letter sounds became jumbled in his head and he lost the original sounds.

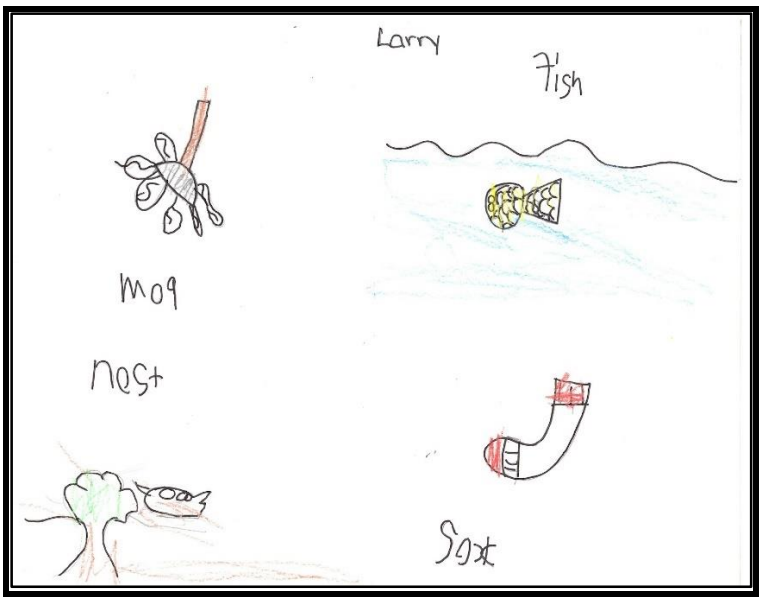

Figure 1. Larry's drawings and writing of the word, after hearing just the sounds tapped out.

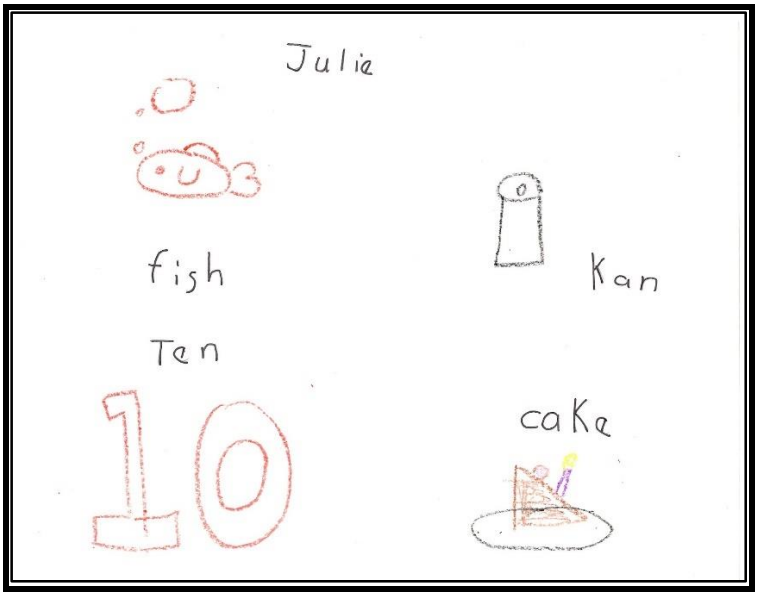

Figure 2. Julie's drawings and writing of the word, after hearing just the sounds tapped out.

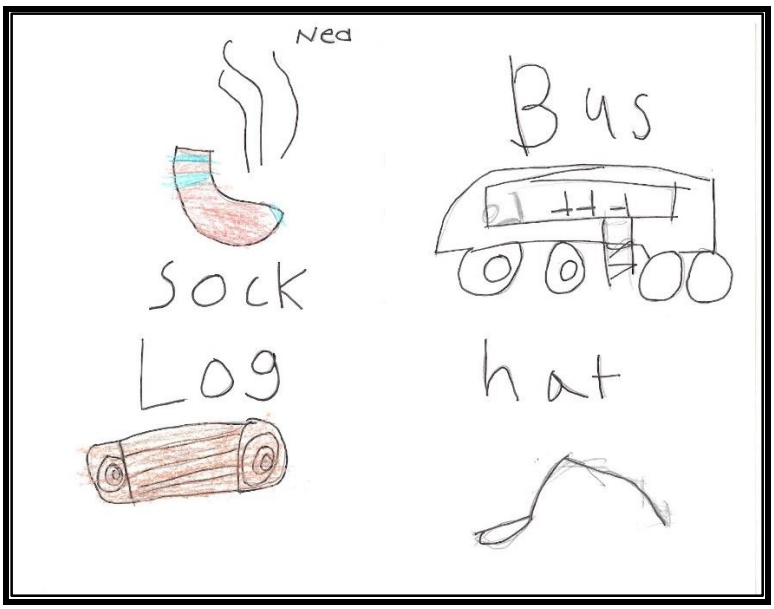

Figure 3. Ned's drawings and writing of the word, after hearing just the sounds tapped out.

At the conclusion of our blending focus, during one of our final activities I would orally segment a word and the students would tell me how many sounds they heard in the word. This was tricky for some of them as some of the words contained blends and digraphs which can often pose a problem when trying to determine the number of sounds. Before beginning I modeled saying sounds and counting each sound that I said. I would tap the sounds down my arm and hold up a finger for each tap, that way I would have how many sounds in the word on my fingers by the time I was finished tapping. For this activity 4 out of the 12 students were correctly able to identify the number of sounds in the words for all 7 words. 4 students correctly identified 6 out of 7, 3 correctly identified 5 out of 7, and 1 correctly identified 4 out of 7. Even though the students were asked to tap the sounds and count the taps as the word was tapped out, many of the students were thinking about how the word was spelled. For instance, Tina said there were 4 sounds in

the word “fish” even though it was sounded out as /f/ /i/ /sh/, she said, “I was thinking about how ‘fish’ was spelled.” Even though we had a conversation about the difference between the letters and the sounds, and she was able to explain to me what I was explaining to her, she continued to really have to think about the sounds she was hearing before committing to a definite answer. Of the 3 students who correctly identified the number of sounds in each word, I noticed that 2 of the 3 would retap the word after I tapped it out and then they gave me the correct number of sounds. The other student did not need to retap the word, he was quickly able to tell me how many sounds after hearing the word tapped out. As I was doing this final activity with the students I began to wonder if it was a good idea to introduce this skill now, since so many of them were having difficulties identifying the number of sounds especially if the word had a blend or consonant digraphs. Though as we were going through the other blending lessons it seemed that the students were doing really well with blending the given sounds into known words. I thought the number of sounds game could provide a challenge and make the students practice tapping the sounds down their arm and counting how many taps there were.

How Do We Segment Sounds?

The next area of instruction I focused on was direct instruction related to segmenting tasks. After modeling and practicing with students, practice activities I asked them to do were similar to how I segmented words during our blending instruction. I again utilized the short vowel picture cards. I randomly picked out a card (unless it was a word with a blend or consonant digraphs) then I chose again, during the initial activities. I wanted the students to practice with simple CVC words first before giving them a twist

like a blend or digraphs. After showing the intended student the picture card, I asked them to segment the word down their arm; they were to tap down their arm for each sound they heard in the word. During this activity many of the students were able to sound out the word I was giving them; however, there were some that either did not want to tap the word or would automatically segment the sounds without needing to tap. I was not sure how I felt about this, since my initial plan was for them to use the physicality of tapping down their arm, so they could hear each sound and visually see the tap; however, I had a few students who even after being prompted to physically tap the word out would not do it. Nine out of the twelve students were able to tap CVC short vowel words down their arm after receiving direct instruction and guided practice with the teacher. Sam took a minute to think about what I asked him to do and what he needed to do, but he was able to successfully tap each sound without requiring additional instruction from me. Ned and Andrew segmented the onset from the rime, and then blended the rime together on their first independent try, requiring additional modeling from myself. Ned said /p/ /ig/ instead of /p/ /i/ /g/ and Andrew said /s/ /un/ instead of /s/ /u/ /n/. After receiving more modeling, they were both able to successfully segment their given words.

After practicing orally segmenting words, I introduced Elkonin boxes (Greene, 2019) or sound boxes to the students. *See figure 4.*

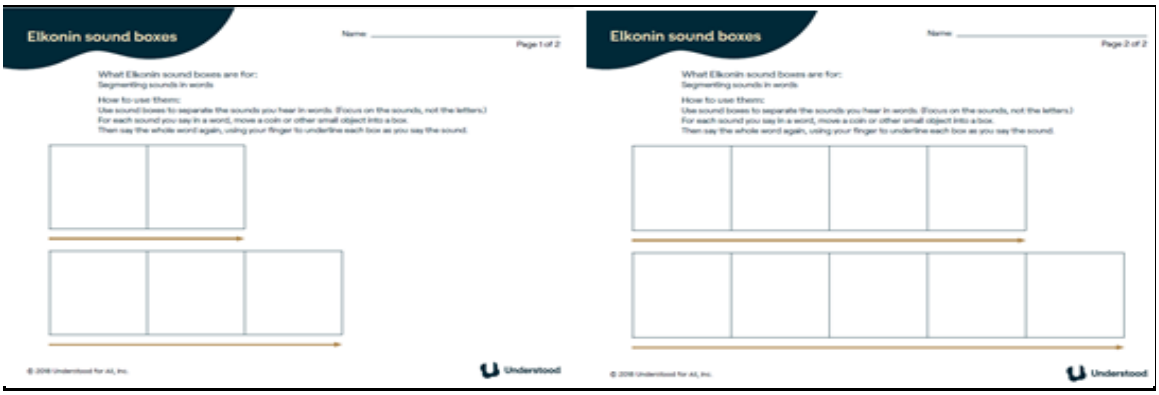

Figure 4. Elkonin sound boxes (Greene, 2019).

This allowed the students to begin to associate the sound they were saying to a tangible item. It also represented a sound, not a letter, which made it less confusing when talking about consonant digraphs. I was excited to finally introduce the sound boxes because my research had advocated for the use of manipulatives in order to assist students with associating the sound to the physical representation, or letter. This also led the way for me to utilize magnet letters with my students, which are my favorite manipulative. I like that the students can physically pick them up and feel the letter shape, as well as slide them around the magnet board to build and break apart words.

The first time using the sound boxes, 11 out of 11 (1 participating student was absent this day) students were able to tap each sound, utilizing counting squares and the Elkonin boxes, for each CVC word they were given. Next we moved onto tapping the squares or pushing the squares into the boxes. I let the students choose what they were most comfortable with doing, for words that contained 2 to 4 sounds. In my initial planning for this activity, I planned and modeled pushing the squares as each sound was said; however, some students did not want to push the squares and would only tap it, so I

tried to stay flexible and make it work for everyone. After that first day I modeled physically pushing the square as well as tapping it like pushing a button to allow for both ways to be utilized. During the activity, I gave them words like *hi, tie,* and *ray* for words that contained 2 sounds and *seat, hen,* and *hug* for words that contained 3 sounds. Finally, the 4 sound words contained blends and consonant digraphs like *snack, thing,* and *smash*. This task proved to be challenging for the students when it came to 2 and especially 4 sound words. When given a 3-sound word 12 out of 12 students were successfully able to tap or push the sounds in the Elkonin boxes. During my first class of students, I originally did not give any indication of when I would give them 2, 3, or 4 sound words. This proved to be a very challenging task for them. I sat and saw them struggle and provided prompting like repeating the word and stretching each sound out, but in the back of my mind I was thinking *Oh no, this is not working and I have to come up with something different*. With my second group of students, I told them the number of sounds the word was going to have before I told them the word, that way they would know which group of squares to utilize with the sound boxes. During the first group one of the students was able to immediately self-correct from saying 3 sounds to 2 sounds, while Ned kept adding the schwa sound after at the end of "ray" so it sounded like /r/ /ay/ /uh/.

After working with the square counters and the Elkonin boxes we moved onto using magnet letters with the Elkonin boxes. This provided students with a more concrete visualization of the sound I was saying and the letter or letters associated with the sound; however, the students who were working on consonant digraphs often had to stop and think if that was one or two sounds. When given blends, my students who were working on those spelling patterns needed more prompting about how blends are still separate

sounds when we are sounding the word out. I found myself stressing this idea every day we segmented words with blends, as those students needed consistent reminders.

As we progressed further into this practice, I moved away from CVC words and started utilizing the spelling patterns that the students were currently working on which consisted of consonant digraphs, initial blends, and long a and o with CVCe/CVVC words. Since these were words that proved tricky to spell and in some instances to read, I wanted to give my students the practice of sounding out words that were personally tricky for them. Once I began this, that was when I started feeling like all of this instruction was not working. It seemed like with the simpler short vowel CVC words my students were doing well and in many instances were able to quickly blend and segment words given. This made me feel uneasy heading into the final weeks of the study and if my students were going to be able to apply these skills to real reading and words in context.

Putting It All Together

After spending time working individually on blending and segmenting, the final weeks of the study focused on utilizing both skills to decode unknown words and even a little bit of encoding. During this focus I wanted to use a combination of nonsense words, so the students could truly practice sounding out each sound and blending them back together in order to decode unknown words as well as real words from their *Words Their Way* focus patterns. I had some students working on consonant digraphs, initial blends, and long vowel patterns of CVCe and CVVC. An early activity we did utilized nonsense words that had all three types of patterns that the students were working on with *Words Their Way*. Before beginning I revisited the rule about silent e on the end of a word and that it makes the vowel long, for those students who were not currently working on that

pattern. Then I had each of the 12 participants read a list of 10 nonsense words that consisted of short vowel CVC, short vowel with consonant digraphs, and long vowel with CVCe words. The 12 participants averaged reading 69% of the words correctly, with a self-correction rate of 21%, so an overall correct rate of 78% of the words. As I was doing this activity with my students, I found myself wondering what makes this so difficult for them. During the individual focus on blending and segmenting, it seemed they were understanding what they were supposed to do; however, when I gave them a nonsense word to simulate an unknown word, it seemed like they had no idea what they were supposed to do. During activities like this I began to wonder how confident all of my students were with their letter sounds, as there seemed to be a lot of hesitation when it came to saying each sound, even with short vowel CVC words. A common error was reading short vowels with a long sound, even without the silent e, such as the word "bav". Half of the participants read that word as "bave". There was also some mixing up of vowel sounds, such as with the word "plem". Two participants read it with a short i sound and three read it with a long e sound. There were also some b/d reversals. This made me realize that we have some further work to do with short vowel sounds.

Another activity that we did with nonsense words, utilized the spelling patterns from *Words Their Way*; however, they were incorporated into nonsense words. Here the students played a board game where they had to draw a card and read the nonsense word correctly. If they did so, they kept the card and rolled the dice, moving however many spaces the dice said. The first person to the finish line won. If they read the card incorrectly then they placed it at the bottom of the pile and the next person went. Students who were practicing the long o sound with silent e read 78% of the words correctly.

Things I noticed during this time was that all of them sounded out (segmented) the word before blending it together and reading it, and that 2 of the students needed to be prompted about what the rule was for silent e words. The group that read the consonant digraph words read 92% of the words correctly and Ned was able to read the words without segmenting any of the sounds first. The group that read words with the initial blends of l- and r- read 90% of the words correctly and the errors did not have to do with the blends. The errors that I noticed were b/d reversals and incorrect vowel sound (the words were short vowels and some of the students substituted the long vowel sound or a different short vowel).

The other nonsense word game we played was where students rolled a die and then had to read a nonsense word that was in the same row as the number they rolled. If they read the word correctly than they highlighted the word with their color highlighter. If they read it incorrectly then they left it unhighlighted for someone else to attempt. These nonsense words utilized the *Words their Way* spelling patterns that the students were practicing. The Long o with CVCe words showed a 95% success rate. Only a couple of students missed a word and that consisted of reading the vowel incorrectly. The group that was working with consonant digraphs read 100% of the words correctly. They showed me that they are doing well reading consonant digraph words, as well as sounding words out utilizing the segmentation of phonemes, like we had been practicing. The group that was working on initial consonant blend words had a 92% success rate at reading the words correctly. Dr- blends are still tricky for them, even when utilizing the sound it out strategy, as well as some remaining consonant sounds.

During another activity, I asked the students to read a word that I gave them from their *Words Their Way* list. Then I gave them a word to spell. This was after modeling how to stretch the sounds and segment each sound to assist in spelling. The group that was practicing words with initial blends was able to successfully read 88% of the words, while they were only able to spell 71% of the words. Of the errors that occurred, 3 of them were the incorrect vowel, 2 of them left out the 'l' in an l- blend word, 1 of them used dg- instead of dr-, and the other 2 only used -k when it should have been -ck. The group that was practicing with long vowel words only had words that had the long o sound in CVCe and CVVC words. This group was able to read 75% of the words correctly and write 50% of the words correctly. All of the participants here spelled "foam" as "fome" and 2 of them spelled "float" as "flote". The last group was working on consonant digraphs sh-, ch-, th-, and wh-. This group read 100% of the words correctly and spelled 75% of the words correctly. The error that occurred during spelling was with the word "think" which was spelled "thik". While doing this activity I realized that my students were more successful with decoding words than they were with encoding words. This made me wonder what other activities could I do with them to work on transferring the segmenting and blending skills we were practicing over to their writing.

During these last weeks of the study I utilized more games, which my students were highly engaged in and enjoyed doing. Often times they protested when our time together at the small group table was done, as they wanted to keep playing. This encouraged me to transfer these games over to center time, so my students could continue

to practice their spelling patterns with a partner. Since doing this I see a lot of motivation to practice reading the word cards, and high levels of consistent engagement.

What Does the Pre and Posttest Show?

The DIBELS8 subtests were administered throughout the study. The initial benchmark was administered before the study began. During the study two progress monitoring assessments were administered. The post assessment consisted of re-administering the initial benchmark assessment after the six weeks of direct instruction to gauge student progress from before direct instruction in blending and segmenting to after this instruction.

Phonemic segmentation fluency subtest. This subtest asked students to say all the sounds in a given word from a list of words in a one-minute time frame. At the beginning the words consist primarily of two and three sound words and increase in difficulty as the list progresses. The words were only given orally. During the administration of the pretest, many students had difficulty segmenting each sound. Words that consisted of three or more sounds, students often segmented the onset and then blended the rime together, or the remaining letters; however, words that only had two sounds students were able to successfully segment each sound. This is most likely because the second sound would be the equivalent of a rime in a three or more sound word. During the two progress monitoring administrations conducted, I saw increases and decreases amongst the students. Some students showed an increase during the first progress monitoring, then a decrease during the second. Overall, the class average of correct sounds identified increased with each test. *Figure 5* shows the results for each student and how they did across all four administered tests. The results of the pretest

showed an average of 28 sounds identified correctly, with a 3 sound increase from the pretest to the first progress monitoring assessment. The biggest increase I saw was from the first to the second progress monitoring assessment, with a 6 sound increase to an average of 37 individual sounds identified. It was between the two progress monitoring assessments that students really worked on segmenting sounds, which this big increase demonstrates that work. After the posttest was administered there was an average of 39 sounds identified correctly, which was an 11 sound increase from the pretest.

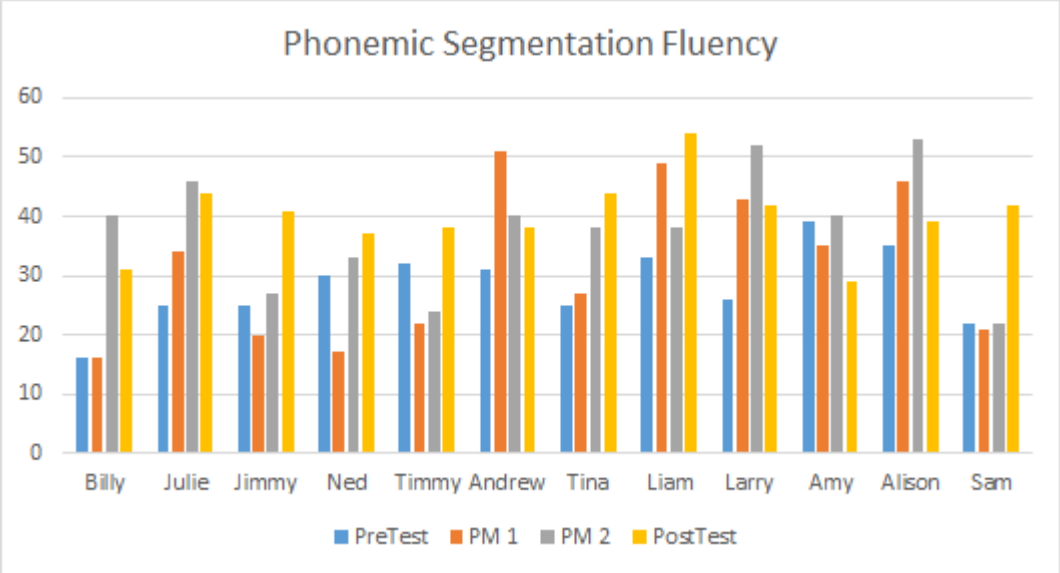

Figure 5. Phonemic Segmentation Fluency subtest from the DIBELS 8 results.

Nonsense word fluency subtest. The nonsense word fluency subtest gives students a list of nonsense words that increases in spelling pattern difficulty the further the students read down the list. The students have one minute to read as many words as they can. *Figure 6* shows how the students did with being able to identify sounds in the words presented. While *Figure 7* shows how successful the students were able to read the

whole nonsense word, not just the sounds. Students may read these words a couple of ways: they may segment each sound and then blend all the sounds to read the whole word or they may just read the whole word right from the beginning. Either way will give students credit towards saying the sounds and reading the whole word. In some cases, like with Tina, *Figure 6* shows that she was able to say the sounds in the words presented to her; however, *Figure 7* shows that she did not blend the sounds together and say the word as a whole, except for a few times, with the posttest being the most whole words read. This made me wonder about Tina's confidence in identifying sounds and then blending those sounds together. During instruction Tina did very well orally blending sounds that she heard; however, whenever she was asked to read a word, I saw her hesitate in identifying each letter. I'm thinking Tina needs further practice with letter sounds, in order to boost her confidence with word reading. I wonder if her letter sound recognition was stronger if her decoding would improve?

This subtest saw an increase in correct letter sounds from the pretest average being 43 sounds and the posttest average being 56 sounds. The same was seen for words read correctly. During the pretest there was an average of 7 words read correctly, which increased to an average of 12 by the administration of the posttest. This subtest saw spikes among both breakdowns during the progress monitoring administration, which I believe is a result of directly working with nonsense words during direct instruction and practice activities.

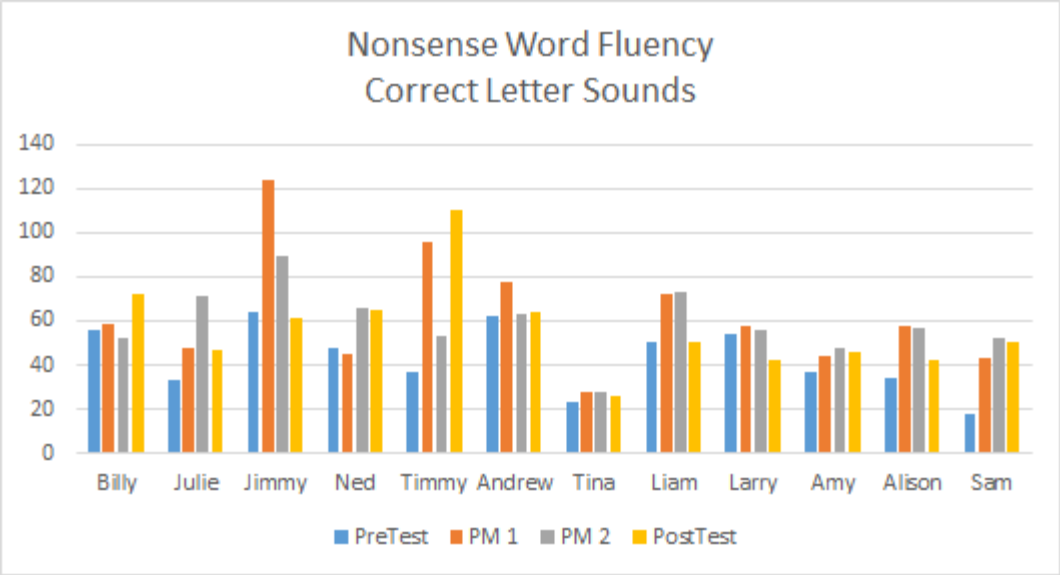

Figure 6. Nonsense Word Fluency subtest, Correct Letter Sounds results from the DIBELS 8.

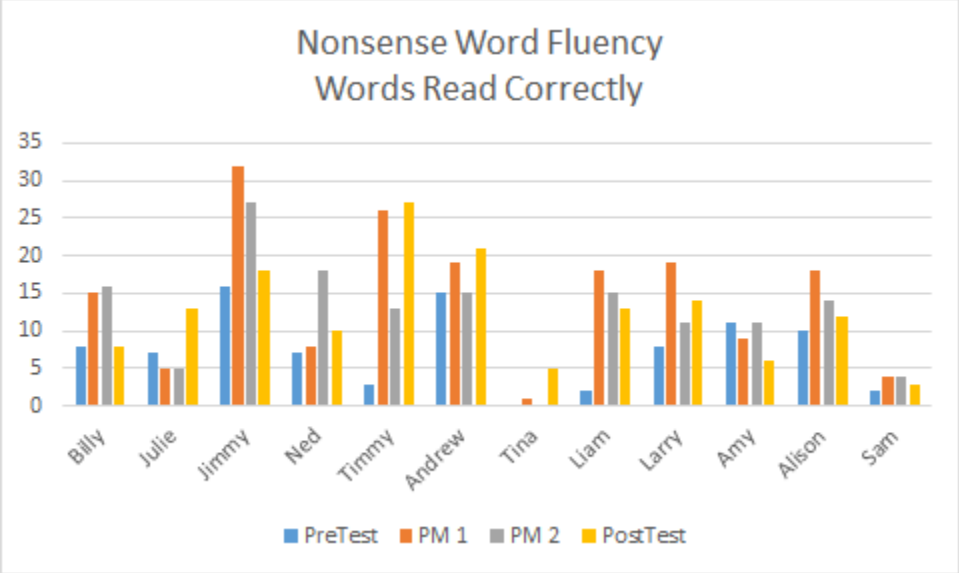

Figure 7. Nonsense Word Fluency subtest, Words Read Correctly results from the DIBELS 8.

Word reading fluency subtest. The word reading fluency subtest asked students to read from a list of commonly found words in children's literature in a one-minute time

frame. This test made me wonder how much progress the participants were really going to make considering the focus wasn't on reading sight word type words. After reading the literature and learning that sight word knowledge is often improved with increased decoding ability, due to greater familiarity of letters and sounds, I decided to keep this subtest and see if I saw an increase with my own participants.

After the pretest was administered the average number of words read correctly was 23, with an increase to 26 after the posttest. *Figure 8* shows how each participant did over the four assessments given and shows how most students read a higher amount of words correctly during the first progress monitoring administration. The spikes in correct words being identified during the progress monitoring and dipping back down during the posttest, I thought was attributed to the list being a more recognizable word list for the students. The first progress monitoring list is one that would be administered at the beginning of the year, when students are not expected to know as many difficult words. The pre and posttest consisted of more difficult words more quickly in the list than the first progress monitoring assessment. Even though student progress seems to correlate with the research, I believe that my students would still benefit from further specific sight word practice, rather than just through increased decoding skills.

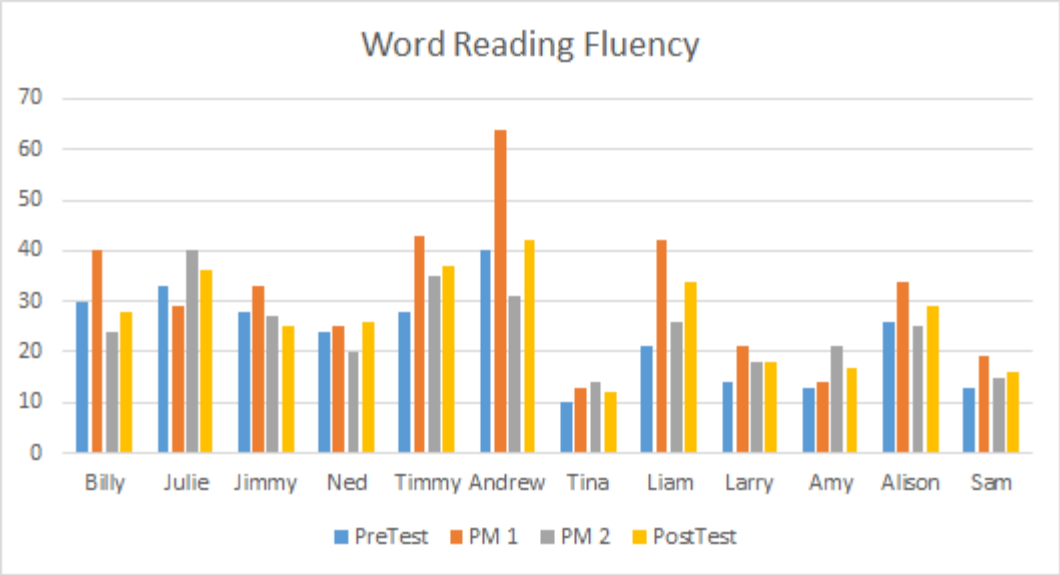

Figure 8. Word Reading Fluency subtest from the DIBELS 8 results.

Oral reading fluency subtest. The oral reading fluency subtest presents students with a short reading passage, which students are given one minute to read as much of the passage as they can. The participants read with an average of 78% accuracy during the pretest, and 82% accuracy during the posttest. The two progress monitoring assessments that were administered showed a much higher accuracy rate at 88% for the first and 90% for the second. Like with other subtests, the spike during the progress monitoring and the dip back down with the posttest really made me wonder what was attributing to this particular phenomenon. During the two progress monitoring assessments there were only individual word miscues, while during the pre and posttest, there were students who skipped lines of text; therefore, quickly adding to their error rate, with the administrator really knowing if those words were difficult for the student or not. *Figure 10* clearly shows the students who had a high number of errors, which were lines of text skipped. During both the pre and posttest assessment, Larry had difficulty with tracking and

keeping his place while reading, which led him to skip complete lines of text. The process of the assessment does not allow for aides such as trackers to assist students with keeping their place. There may also have been environmental distractors at play here as well. *Figure 9* shows how many words were read correctly by each student across all four administrations of this subtest, which depicts the spikes during progress monitoring, while showing that most students still experienced an increase from the pre to the posttest. In the case of Larry, who skipped lines of text and saw a higher error rate, he showed an increase from the pre to posttest, and remained consistent across the progress monitoring assessments in the area of words read correctly. When reading with Larry, and he is able to utilize a tracker, he is more likely to stay focused and skip a few words. Larry though does often need prompting to go back and reread words, as his error rate remains high while reading. He needs further support in self-correcting strategies.

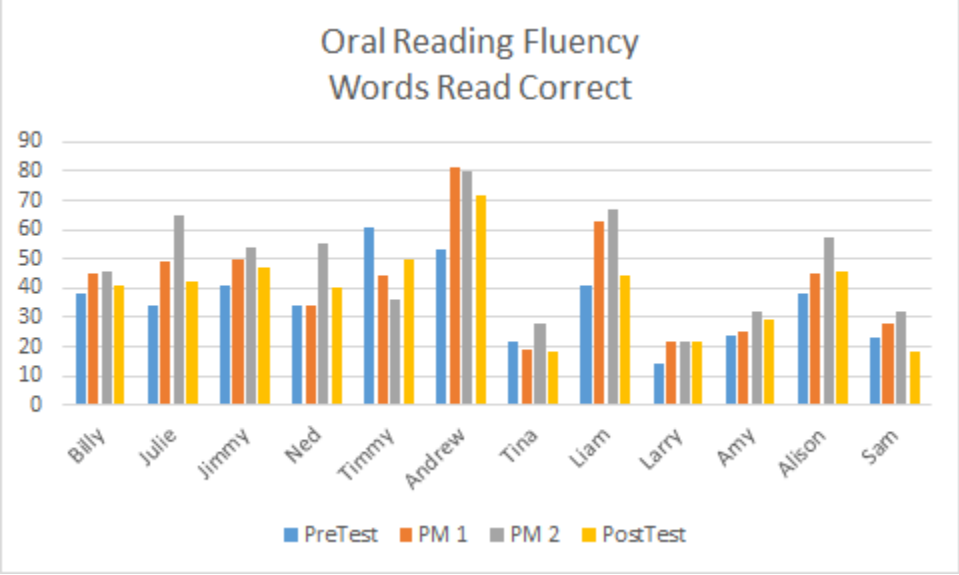

Figure 9. Oral Reading Fluency subtest, Words Read Correct results from the DIBELS 8

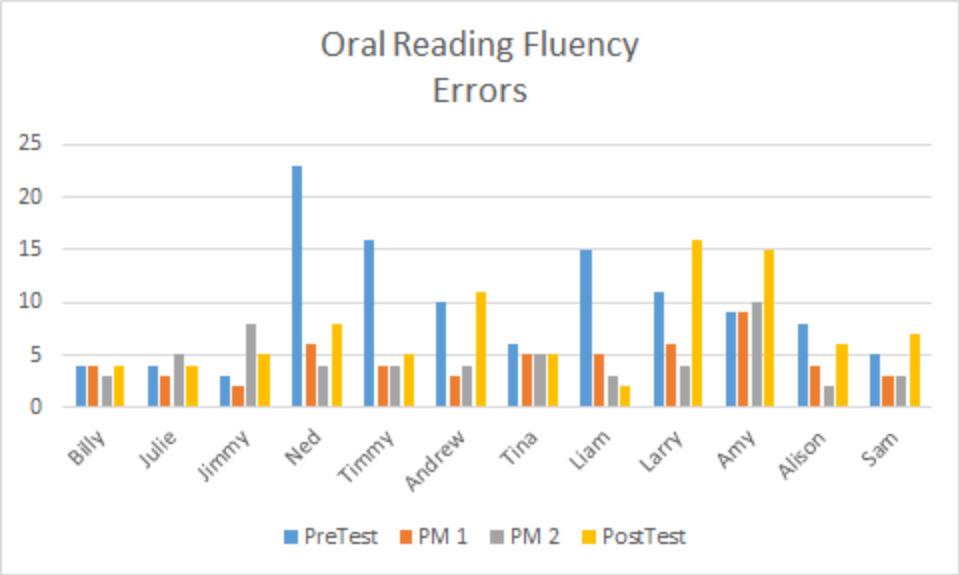

Figure 10. Oral Reading Fluency subtest, Error results from the DIBELS 8

While progress monitoring, I was getting very excited at how much many of the students were increasing accuracy or correct letter sounds, and being able to segment individual sounds. When I completed the posttest with them it was a little disheartening that the great gains in progress had slid backwards. Most of them still showed progress from their initial data, but I saw how well they did during the individual lessons and it seemed to me that they were really understanding how to sound out an unknown word. Even when we read text, and the students were presented with a difficult word they needed prompting to remember to tap out sounds like we were practicing. With prompting many of them were successful, but they did not have the skill independently yet.

The final chapter provides a summary of the findings and final conclusions drawn. Classroom implications, as well as areas of further research are also discussed.

Chapter 5

Conclusion

In this chapter you find a summary of my overall findings, along with the implications for classroom instruction today. I also provide suggestions for further areas of research based on my findings.

Summary of the Findings

This study examined how the reading of third grade special education students would be affected after receiving direct instruction in the specific phonemic awareness tasks of blending and segmenting phonemes. At the beginning of the study many students isolated the onset and blended the rime, not isolating each individual sound in the word. As the study progressed, findings from the DIBELS 8 progress monitoring showed that students had spikes in progress after receiving direct instruction in a specific area. This data was used to focus on areas that needed further instruction. The post test revealed lower scores than many of the progress monitoring tests; however, students still demonstrated more knowledge of blending and segmenting through the posttest than they did during the pretest.

Conclusions of the Study

At the beginning of this study, my goal was to look at how my students' reading would be affected after receiving direct instruction in phoneme blending and segmenting. I specifically wanted to see if their decoding of unknown words would improve. Prior to starting the study, I conducted research to determine what had already been found regarding phonemic awareness instruction, as well as direct instruction, especially with regards to special education students.

Research found that blending and segmenting were the two phonemic awareness tasks that benefited students the most in learning to read (Ehri, et. al., 2001; IRA, 1997). Even though my students are in third grade and past the grades where learning to read is typically addressed, my students have been classified as reading disabled; therefore, learning to read continues to be a skill they are working towards. The direct instruction provided during this study was found to have increased student ability in decoding unknown words, as seen through nonsense and real word reading.

Prior studies (Rupley, Blair, Nichols, 2009: Yopp & Yopp, 2000) have shown that students benefit from utilizing manipulatives as a concrete representation of the sounds. During this study students first utilized plain counting squares to represent sounds in words, and push each sound while saying it. Then they moved on to utilizing magnetic letters so they could see the symbol representation to the sound as well. The students did well using both types of manipulatives to represent sounds while tapping or pushing each sound as they spoke it.

This study looked at how blending and segmenting phonemes would improve students' reading abilities. The research suggested that direct instruction in this skill would not only assist students in decoding unknown words but also in retaining sight words. It is believed that through the decoding process students have more exposure and practice to relating the grapheme representation to the phoneme, which aides them in retaining more sight words as well (Ehri, et. el., 2001). Through the word reading subtest students showed an increased ability in further advancing their sight word knowledge. This was without direct sight word instruction.

Implications for Today's Classrooms

According to the International Reading Association (1997), "longitudinal studies have shown the acquisition of phonemic awareness is highly predictive of success in learning to read - in particular in predicting success in learning to decode." Many students are not explicitly taught phonemic awareness skills; rather they are often acquired by students from being in the classroom setting and exposed to text. This works for the majority of students; however, the remaining group are often those who later become classified and become my students. Even though my students were most likely not taught phonemic awareness skills explicitly, I now know from this study to continue to incorporate this explicit instruction in my classroom and with future classes. I can also pass this knowledge onto other special education teachers in the grade before and after mine.

By the end of this study the students had begun to utilize blending and segmenting into reading in context; however, that continues to be an area of further need. Research showed that students were more successful when utilizing these skills in the context of real reading (Szabo, 2010; Yopp & Yopp, 2000; Rupley, Blair, Nichols, 2009), even when provided with teacher coaching to blend and segment as they read in context. This is something that should be further worked on in small groups as the year progresses.

Students worked with manipulatives during the study in order to have a concrete representation of the sound, and then the written symbol (letter) for each sound. The students would continue to benefit from further practice with segmenting and blending sounds with manipulatives. This could then benefit them during reading in context, when they come across an unknown word. The students would be able to look at each letter or

set of letters and push the sounds with their finger while sounding out the word in the text.

Suggestions for Further Research

Further research with special education students and learning to read would be beneficial in areas such as retention of skills. I would suggest a longitudinal study of special education students and follow a group or various groups of students who continue to receive direct instruction in blending and segmenting skills and see if their acquisition of decoding skills improved as well as was retained over the years. I can pass along the information from my study to first and second grade teachers before me, as well as fourth and fifth grade teachers after me. I would like to see the decoding abilities of students who are in a small resource setting, such as mine, that receive direct instruction in blending and segmenting in first and/or second grade by the time they get to my class in third grade. Are their abilities more advanced than the students that participated in this study? I would also like to see how the decoding abilities of the participants from this study improve in the next two years, if the fourth and fifth grade resource teachers continued with this type of direct instruction.

During this study, I did not compare how the participants comprehension was affected with improved decoding abilities. Further research would be beneficial with learning disabled students and how their comprehension is affected once they have further developed decoding skills. Are they able to close the gap to their non-disabled peers more quickly, once decoding mastery is achieved? Research has already shown that students of this age range are at a disadvantage since their non-disabled peers are working on comprehension strategies and their mental efforts are focused on comprehending text.

While students like my participants who are classified and behind in reading are focusing their energy on determining the words while reading (Foster and Miller, 2011).

Final Thoughts

Overall, through analyzing pre and post test data, my research journal, and anecdotal notes, my students demonstrated an improved ability to decode unknown words from the beginning of the study to the end of the study. All of my students are reading on a first-grade reading level, which is typically the age when one learns most of their foundational reading skills. Since my participants are reading disabled, their acquisition of these foundational skills, such as decoding, has been delayed. Through this research study I have found that even though my students have delayed skills compared to their same age non-disabled peers, they are able to demonstrate understanding and progress towards decoding mastery, even at an older age, with direct instruction.

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