Improving Decoding:
A Multiple Case Study of 4th Grade Striving Readers
By

LaVonne Rose Holmgren
M.S.E. University of Kansas, 2009
B.Ed. Washburn University, 1991

Submitted to the graduate degree program in Curriculum and Teaching and the Graduate Faculty of the University of Kansas in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

_____

Chair: Barbara Bradley

_____

Arlene Barry

_____

Heidi Hallman

_____

Karen Jorgensen

_____

Meagan Patterson

Date Defended: 26 April 2018

The dissertation committee for LaVonne Rose Holmgren certifies that this is the approved version of the following dissertation:

Improving Decoding:
A Multiple Case Study of 4th Grade Striving Readers

_____

Chair: Barbara Bradley

Date Approved: 26 April 2018

Abstract

Improving decoding was the focus of this qualitative multiple case study. Four fourth grade participants received intensive, explicit reading intervention from an expert reading teacher for 17 weeks. Data from intervention class observations, documents, and interviews with participants and classroom teacher were analyzed to determine how these striving readers learned to improve their reading, and data from two of the participants are described in detail. Major themes were a) striving readers can make progress with intense intervention, b) reading specialists must use professional judgment to make instructional decisions, c) there are degrees of explicitness needed during instruction, and d) there is a need for continued intervention by an expert reading teacher. Additionally, intrusions that affected intervention were identified.

Acknowledgements

Too many people to name contributed to the awakening of my intellect on my journey from striving reader to scholar. I wish to thank those who contributed in a significant way to this dissertation. Mark, my husband, provided support in countless ways. I give thanks to Dr. Barbara Bradley, Committee Chair, whose excellence in scholarship inspired and guided this work from inception through final punctuation. Dr. Karen Jorgensen encouraged me beyond my efficacy beliefs to begin and complete a doctorate degree. I thank my other committee members, Dr. Arlene Barry, Dr. Heidi Hallman, and Dr. Meagan Patterson, who taught relevant content and modeled best practices in their courses. Their advice has been invaluable through the research and writing processes. Their words rang through my mind keeping me on course.

I am especially grateful to Alex, Aryianna, Bryan, and Jordan (pseudonyms) who agreed to participate in my research. I greatly appreciate the parents' of my participants, who trusted me to research while teaching their children. I also thank Mr. James and Ms. Lee (pseudonyms) for giving precious time to discuss their students' learning.

This study would not have been possible without school district administration permission and endorsement of my principal Angela Soper. Dr. Bridget Stegman, my instructional coach, offered critical assistance with participant selection, and peer review during various phases of data analysis.

I am deeply grateful to the University of Kansas scholarship donors and the School of Education for scholarship awards that made my research come to fruition.

I thank God for the health and wisdom to finish this work.

Dedication

Teaching children to read is my passion. I dedicate this dissertation to children.

To my children, Evan and Elizabeth, you are my treasures. Your reading difficulties tore at my heart and challenged me to pursue graduate work in reading.

To all my striving reader students, as I have watched you read and listened to your questions and ideas, you have taught me. I hope other striving readers will benefit from all we learned together.

To Isabelle Rose, my granddaughter, you are the delight of my life. We will enjoy many hours reading books together as you grow.

Table of Contents

Table of Tables

Chapter 1

Proficient reading, which is the gateway to other literacy skills and academic achievement, is highly valued by many cultures. In the United States high levels of literacy are essential for economic stability and political participation. Further, many aspects of social and cultural activity depend on high levels of reading proficiency (Moats, 2010). Thus, the federal government, through the No Child Left Behind Act (NCLB, 2000), legislated that standards of high literacy achievement be established by each state in an effort to meet the demands of modern society. Today, the Common Core State Standards (CCSS; National Governors Association Center for Best Practices, 2010) have redefined reading proficiency for students in kindergarten through high school so that students will be college and career ready when they graduate from public schooling.

Today, in spite of legislation and decades of reading research, 36% of the 279,000 fourth grade students tested scored in the proficient and above categories, while 31% are striving readers scoring below basic reading proficiency according to National Assessment of Educational Progress (NAEP, 2015). Striving readers are students who acquire reading in a delayed manner when compared to their same age peers. Some of these striving readers primary difficulties are in comprehension of the message of print. Other striving readers have not learned the relationships of sound to symbols of printed English at the same speed of acquisition as their same age peers causing them to struggle to read because of this lag in decoding development. Although striving readers in grades three through six have learned some basics of how to read, they are not reading at grade level. While difficulties may be due to both environmental and biological causes, they can also be due to instruction. To learn how to read fluently, striving readers may require different instruction compared to typically developing students who are

reading at grade level. In short, "all children can be taught to read" (Shaywitz, 2003, p. 169). This is encouraging news for educators, parents and especially readers who struggle.

Rationale for the Study

The primary purpose of reading is comprehension. Comprehension is unlikely to happen without the ability to fluently decode words. Many students in the intermediate grades, which are usually grades three through six, and even in middle and high school have persistent decoding or word level difficulties (O'Connor & Goodwin, 2011; Pressley & Allington, 2015). Often striving readers, especially those with unresolved decoding issues, eventually fell below grade level to the point that they are often identified as reading disabled.

In an effort to reduce the numbers of students identified with learning disabilities and in accordance to the Individuals with the Disabilities Education Improvement Act (IDEA, 2004), many schools adopted a Response To Intervention (RTI) model. The RTI model provides multi-tiered intervention for students as soon as there is evidence from universal assessments that they are no longer learning at grade level (Fuchs & Fuchs, 2006). Tier I intervention includes instruction in the general education core curriculum, universal screenings, and intervention in groups. All students must receive Tier 1 instruction. Tier 2 provides targeted intervention for students not responding to Tier 1 instruction although they still receive Tier 1 instruction with their grade level peers. Tier 3 interventions occur after Tier 2 interventions fail to bring the student to grade level, are intensive, and may involve evaluation for Special Education services (Fuchs & Deshler, 2007). With reauthorization of IDEA, schools continue to provide universal screenings, instruction in core curriculum, and increasingly intensive interventions (Fuchs & Deshler, 2007, U.S. Department of Education, 2012) or layered intervention (Kucan & Palincsar,

2011). Currently, striving readers have much more support to become proficient readers than in decades past.

Much is known about best practices for effective reading intervention for striving readers with decoding issues. For example, quantitative studies related to phonics instruction indicate that striving readers in grades three through six need explicit, systematic instruction (National Panel Report, 2000; Wanzek, et al, 2013). However, there have been few qualitative studies examining how striving readers learn and use new knowledge and strategies to become more skilled readers. Qualitative studies will help educators understand the nuances of instructional practices that help striving readers to learn, apply and internalize knowledge and strategies that support decoding.

Purpose of the Study

The purpose of the present study was to understand how fourth grade striving readers demonstrate their learning during Tier 3 reading intervention. While researchers have focused on how teachers deliver instruction to striving readers (Allington, 2011; Kucan & Palinscar, 2011; The National Reading Panel, 2000; Shaywitz, 2003; Spear-Swerling, 2011), they have not considered how students must synchronize new knowledge and refine strategies, nor the fine-grained support they need in order to read better. Thus, the main focus of this study is to understand the nuanced interactions between a teacher and a student during intervention in order to better support the striving reader. Conducting a multiple case study that focuses on how fourth grade striving readers respond to an instructional intervention, presented within their zone of proximal development, is important as the stakes of becoming a proficient reader continue to increase (Bear, Invernizzi, Templeton & Johnston, 2008; Ehri, 2005; Spear-Swerling, 2013; Vygotsky, 1986). It is essential for classroom teachers, intervention teachers, administrators,

parents, and students to recognize and understand the nuances of teaching and learning that strengthen students' word level reading. This study investigated the following research question: How do 4th grade striving readers demonstrate progress when participating in an intensive and explicit reading intervention?

Definition of Terms

The definitions for words commonly used across reading research and by teachers are presented. Definitions for other words will be provided later in the text.

1. *Decoding* – Applying knowledge of grapheme-phoneme relationships to pronounce an unknown word by comparing the new word to known words with the same spelling patterns, or by segmenting sounds represented by the letters and blending together to pronounce the word (Spear-Swerling, 2011, p. 63).
2. *Continuum* – "A coherent progression for reading and spelling begins with phoneme awareness training and concludes with study of the Greek combining forms … grade by grade" (Moats, 2010 p. 209).
3. *Grapheme* – "A letter or letter combination that spells a single phoneme, in English, a grapheme may be one, two, three, or four letters, such as e, ei, igh, or eigh" (Moats, 2010, p. 275)
4. *Knowledge* – The facts, ideas of content, and information one needs to build increased schema (Cartwright, 2015, p. 46).
5. *Phoneme* – "A speech sound that combines with others in a language system to make words" (Moats, 2010, p. 277).

6. *Phonics* – "An instructional practice that teaches the relationship between graphemes (letters) and phonemes (sounds) for use in reading and spelling" (Beck & Beck, 2013, p. 224).
7. *Reading skills* – Well-practiced automatic actions that accomplish a specific reading purpose without conscious effort (Afflerbach, Pearson & Paris, 2008).
8. *Reading strategies* – Calculated, goal-focused ways of approaching a reading task that requires deliberate effort and possibly modification (Afflerbach, Pearson & Paris, 2008).
9. *Records of Oral Reading* – "The transcript of the text on which oral reading is coded" (Fountas & Pinnell, 2008, p. 172).
10. *Sight Words* – "Any word that is read sufficiently often becomes a sight word that is read from memory" (Ehri, 2005).

Organization of the Study

In this chapter, I introduced the topic of the proposed research study, gave the rationale for and the purpose of the study, stated the research question, and defined some key definitions. Chapter 2 features a review of literature focused on striving readers and the delivery of intensive intervention that is based on the students' identified instructional needs. The theoretical framework based on cognitive development and reading development theory is also discussed. Chapter 3 explains the method and methodology for the proposed multiple case study and describes the participants, the intervention, data collection, data analysis and trustworthiness processes. Chapter 4 details the research findings for case study participants. Chapter 5 concludes with the significant findings of the individual through cross-analysis, discusses the present study limitations, and questions for future research to further support striving readers.

Chapter 2 Literature Review

Written language allows humans to record ideas that develop in their minds. These writings can later to be decoded by others, even across great distances and great spans of time, as long as the symbolic relationships in the written code are decipherable into oral language. Thus, the main goal of reading written language is to understand the message of the author or to make meaning (Moats, 2010). Some learn the processes of decoding written messages with ease while others work with great effort over an elongated time as compared to their peers.

Just as the tectonic plates of the Earth shift creating subtle to cataclysmic effects on earth's landscape, so too the curriculum and instruction in schools changes when standards change or new legislation is enacted. For example, changes occurred following the National Reading Panel report (NPR, 2000), No Child Left Behind (NCLB, 2001), the Common Core State Standards (CCSS, 2010), and Every Student Succeeds Act (2015). Along with these changes there has been a call for research-based reading instruction in an effort to reduce the number of students who develop reading difficulties (Dewitz, Leahy, Jones, & Sullivan, 2010). Despite these national efforts, many students have not become proficient readers, and some remain significantly behind their peers because of persistent word level difficulties (O'Connor & Goodwin, 2011; Pressley & Allington, 2015). The need for effective instruction for striving readers has never been more imperative.

The purpose of this chapter is to review literature related to (a) striving readers' characteristics, (b) theories underpinning reading and cognitive development, (c) types of instructional support that benefits striving readers, and (d) decoding strategy instruction to enable comprehension of text.

Characteristics of Striving Readers

Reading has been categorized as typical or atypical based on a developmental continuum (Ehri, 2005; Moats, 2010). Those students, who develop reading according to the developmental continuum with the majority of their peers, are considered typically developing readers. Yet other students of the same age and intelligence do not make the same progress on the continuum and experience difficulty when learning how to read. These students are considered striving readers; their reading development is atypical because it takes much longer for them to learn how to read compared to their typically developing peers; therefore, they fall below grade level on continuums and standards expectations. In addition to reading below grade level expectations, striving readers can have difficulties with various aspects of reading. These reading difficulties have been described and categorized through research studies over several decades. Looking at word level reading, Pressley and Allington (2015) summarized several types of problems striving readers experience and they include (a) hearing individual phonemes in words, (b) segmenting words into individual phonemes, (c) blending phonemes into whole words in order to decode unknown words, (d) processing only part of the letter-sound relationships within words, and (e) developing automaticity in word recall. Compared to typically developing readers, striving readers have more difficulty discriminating speech sounds of oral language, which can include phonemes, onsets and rimes, and even whole words. When students have difficulty hearing the individual phonemes of oral language, segmenting phonemes and blending letter sounds together to pronounce words called decoding becomes problematic because hearing phonemes within words is critical to the decoding process (Pressley & Allington, 2015). These problems often predict later reading difficulties through school and beyond (Beck & Beck, 2013; Pressley & Allington, 2015).

Some striving readers develop strategies to cope with the inability to discriminate phonemes in words. One coping strategy that many striving readers use is guessing based on the first letter sound in a word, on clues from pictures, from the semantic context of the word pronunciations, or a combination of these elements (Pressley & Allington, 2015; Spear-Swerling, 2011). While guessing is a strategy that most beginning and even proficient readers use sometimes, overreliance on this strategy causes at least three types of problems (Pressley & Allington, 2015). First, guessing based on first letter sound, context clues, and pictures are often inaccurate leading to poor comprehension (Ehri & McCormick, 1998; Pressley & Allington, 2015). Second, when decoding all letter sounds is incomplete, it is less likely that the word will become part of the sight word lexicon. A sight word lexicon allows automatic recall (Ehri, 2005). Finally, guessing requires a large amount of cognitive capacity, which reduces cognitive capacity needed for comprehension (Pressley & Allington, 2015).

Proficient comprehension rests on a foundation of accurate and fluent decoding (Pressley & Allington, 2015). However, there are other reasons striving readers may have comprehension difficulties. For example, striving readers often choose the most common, but incorrect word meaning for the context, and they make weak or no inferences (Pressley & Allington, 2015). Also, striving readers often fail to develop a repertoire of comprehension and metacognitive strategies resulting in overall poor comprehension.

The characteristics of strong readers at any age are mostly opposite of the characteristics of striving readers. Strong readers can rapidly segment and blend individual phonemes to pronounce unknown words, and rapidly process words from print into oral language (Kucan & Palincsar, 2011; Pressley & Allington, 2015). Strong readers most frequently choose the correct multiple meaning of a word that makes sense in the context, they make inferences, and further

they develop and fluidly use comprehension strategies when reading (Pressley & Allington, 2015).

Understanding the types of difficulties striving readers experience when learning to read informs this study because reading intervention must be specifically targeted to address the decoding difficulties that hinder proficient reading.

Theoretical Framework

The theories that frame this study are drawn from educational research and contemporary cognitive psychology. First I will describe a) theory of moving grapheme-phonemes into memory, b) the phases of reading development, and then c) the development of cognitive processes necessary for the acquisition of reading. If reading intervention is to address the needs of striving readers, then knowledge of how reading develops and the cognitive processes involved illuminate specific difficulties to be addressed through expert instruction.

Reading Words

Modern neurological and psychological research has informed educational research and theory development about cognitive processes involved in learning to read. Ehri (2005) describes the process of distinguishing one word from another in memory as instantiation; however, there are prerequisites to instantiation.

Researchers agree a knowledge base is needed to read. Beck and Beck (2013) discuss knowledge requisite for learning to read a) words have letters that represent speech sounds, b) sounds are represented by letters, c) how to blend speech sounds into pronounceable words, d) solid understanding of English orthography, e) automatic word recognition. Ehri (2005) gives a similar set of prerequisites to reading a) knowledge of the alphabetic system, b) phonemic awareness, c) grapheme-phoneme relationships, and d) spelling patterns. The cognitive

processes that explain how reading is learned rests on a learner's depth of knowledge of the alphabetic principle, alphabet names and letter sounds (Beck & Beck, 2013; Ehri, 2005; Spears-Swerling, 2011).

When knowledge is sufficient, learning occurs by connections formed in memory between the spelling, the pronunciation, and the meaning of the word (Ehri, 2005). For some beginning readers only a few times looking at the printed letters is enough to move the word into memory, yet, some readers require an elongated acquisition process (Ehri, 2005). Ehri (2005) concludes that reading is a mystery.

Phases of Reading Development

Several researchers have described reading development from early to proficient abilities (Ehri, 2005; Pressley, 2006; Spear-Swerling, 2013). Some researchers use stages to describe reading development and according to stage theory, one stage must be completed before the next stage begins (Ehri, 2005). Ehri (2005), however, describes reading development in terms of phases and explains that learning may take place in more than one phase concurrently. Although reading phases have been identified above the word-level, I only present the four phases of word-level reading development (a) pre-alphabetic, (b) partial alphabetic phase, (c) full alphabetic phase, and (d) consolidated alphabetic (Ehri & McCormick, 2013), and (e) the disconnect between developmental phases and academic standards.

Pre-alphabetic phase. During the pre-alphabetic stage, learning is informal but creates a foundation for later formal reading instruction. In the pre-alphabetic phase, children do not understand letter-sound correspondence needed to read words (Ehri & McCormick, 2013). Instead, children may pretend read, memorize a few words by visual features of the word, and get meaning from pictures. Pre-alphabetic reading typically occurs before formal education begins and when children have had rich literacy experiences in their family (Pressley & Allington, 2015). Young children, through experiences, learn to attach meaning to environmental print by using the shapes and colors of texts (Ehri & McCormick, 2013; Pressley & Allington, 2015); however, they are essentially non-readers (Ehri & McCormick, 2013). While pre-alphabetic reading typically takes place during the preschool years (Spear-Swerling, 2013), schools may need to provide support for some delayed and severely disabled readers (Ehri & McCormick, 2013). The pre-alphabetic phase also corresponds to the logographic phase (Pressley, 2006) and the visual-cue word recognition phase (Spear-Swerling, 2013).

Partial alphabetic phase. The partial alphabetic phase consists of two main parts (Ehri & McCormick, 2013). First, children must learn letter names and letter sounds. Second, children must use some letter-sounds to attempt to read words. However, while children begin to understand the alphabetic principle; that is, letters in print have relationships to sound (Spear-Swerling, 2013), letter-sound correspondences are still incomplete, especially for vowel patterns, and they have not yet mastered the complexity of phonetic generalizations needed to read English (Pressley, 2006). Readers in this phase also have at least some phonological awareness skills. Many children in kindergarten and first grade are often in the partial alphabetic phase of reading development (Spear-Swerling, 2013). This phase has also been referred to as the alphabetic reading phase (Pressley, 2006) and the name phonetic word recognition phase (Spear-Swerling, 2013).

Full alphabetic phase. Readers move into the full alphabetic phase when they internalize the grapheme-phoneme relationships and they are able to decode new words (Ehri & McCormick, 2013). Additionally, they have increased recognition of spelling patterns and ability to effectively read sight words (Ehri & McCormick, 2013). Readers' phonemic awareness is more fully developed but they are not yet able to decode complex multisyllabic words (Spear-Swerling, 2013). This phase has also been referred to as the controlled word recognition phase and readers typically enter this phase by the end of first grade or beginning of second grade.

Consolidated alphabetic. In the consolidated alphabetic phase of reading development, readers know many spelling patterns. Words are no longer read by individual grapheme-phoneme relationships; instead, words are most often read in chunks, which facilitate reading, particularly multisyllabic words (Ehri & McCormick, 2013). As readers develop an automatic ability to read multisyllabic words, fluency also develops enough to allow readers to focus more comprehension during reading. In fact, automaticity in word reading is essential for proficient comprehension (Pressley & Allington, 2015). This phase has also been referred to as the automatic word recognition phase and readers typically enter this phase late in second or third grade (Spear-Swerling, 2013).

The phases of reading development informs this study because recognizing reading behaviors within specific phases aids teachers in planning focused intervention for striving readers (Ehri & McCormick, 2013; Pressley, 2006).

Disconnect between developmental phases and academic standards. A disconnect exists between how reading develops in phases and the demand that academic standards place upon readers. One of the difficulties educators face when planning and implementing instruction for striving readers is that state standards, core instructional programs, and curriculum guides are now written for college and career ready outcomes that demand high levels of reading proficiency from kindergarten through high school. Because of these academic standards, the demand for early reading development is high and curriculum has been developed so that students are expected to read more difficult texts at younger ages than previously recommended (Fountas & Pinnell, 2012). For example, one reading program recommends that exiting kindergarten should now read at Level D as compared with the previous expectation of Level B (Fountas & Pinnell, 2012). According to the leveling system developed by Fountas and Pinnell (2012), Level A, B, and C books are predictable, while Level D books require knowledge consistent with the partial alphabetic phase in reading development (Fountas & Pinnell, 2012). The Fountas and Pinnell (2012) reading intervention program for striving readers also recommends increased exiting reading level for all elementary grades.

The study site elementary school adopted these higher standards for reading levels. This changed the kindergarten exit expectations. The more rigorous standards were all letter names upper and lower case, and 26 letter sounds in the initial position in words, 40 high frequency words automatically, and reading a leveled book at Level A or Level B. Previously the kindergarten exit standard was knowing all letter names upper and lower case, and 26 letter sounds in the initial position in words, 40 high frequency words automatically, and reading a leveled book at Level A or Level B. The striving reader participants in this study not only had a difficult time learning letter sounds, they were affected by the increased demand of standards.

Most public schools place children into grades based on age and again, because of the developmental nature of reading development, there will likely be students in different phases of word-level development in the same grade and classroom. Further complicating planning and implementing word-level instruction is the fact that some reading difficulties develop after the primary grades. Studies have found that some students begin to read on a typically developing trajectory, but develop reading difficulties, at the word level decoding, with comprehension, or both around fourth grade or later and these difficulties often persist through high school (Pressley & Allington, 2015; Wanzek et al., 2013). If students with reading difficulties are not sufficiently supported through intervention and accommodation, ultimately they drop out of school (Deshler, Palinscar, Biancarosa, & Nair, 2007).

There are many reasons students may have difficulty learning to read. For example, students may have (a) neurological and cognitive processing issues, (b) received limited or a lack of differentiated instruction, (c) been taught reading skills in isolation, (d) received insufficient explicitness in instruction, and (e) had a mismatch between the developmental phases of reading and academic standards. Further, because cognitive development and reading acquisition development is dependent on both biological maturation and preschool experiences, some students may be entering school already behind expectation (Pressley & Allington, 2015). In short, reading is a complex cognitive activity and there are many factors that may lead to reading difficulties.

Cognitive Development

Since Piaget's classic work in child development, much research has clarified cognitive development from birth through adulthood (Cartwright, 2008). Since then, contemporary cognitive psychologists have found that executive function processes, such as representation,

theory of mind, and cognitive flexibility develop gradually across the lifespan of individuals from birth and continue into adulthood rather than in distinct stages (Cartwright 2008; Deák, 2003). Since there is relationship among cognitive processes, the developmental phases of reading, and instructional practice, the present study is informed research on cognitive process or executive function (Cartwright, 2008). Executive function, an umbrella term for cognitive processes, is responsible for goal-oriented, higher level processes that are essential to reading proficiently (Cartwright, 2012; Cartwright, Marshall, Dandy & Isaac, 2010; Deák, 2003).

Executive function. Executive function includes (a) working memory, (b) regulation, (c) inhibition control, (d) attending to stimuli, (e) shifting attention, (f) goal setting, (g) planning and implementation, (h) mental flexibility, and (i) assimilation of feedback (Cartwright et al., 2010; Cartwright, 2012; Deák, 2003; Ionescu, 2012). Cognitive flexibility, representation, language, and theory of mind are related executive functions critical for the development of literacy and more specifically proficient reading.

Executive function cognitive processes develop on different trajectories from one another and along a continuum from birth to adulthood (Crone, Ridderinkhof, Worm, Somsen, & Molen, 2004). For example, when studying eight to 15 year old participants, Crone et al., (2004) found that the cognitive processes of attention maintenance and attention switching develop on separate trajectories. Although recent studies have shown that some cognitive processes develop on different trajectories (Crone et al., 2004), development of executive function processes parallel reading acquisition, is age related, and continues to develop across the lifespan (Cartwright, 2002, 2012; Cartwright et al., 2010).

Cognitive flexibility in reading. Cartwright et al. (2010) offer this definition of cognitive flexibility. "Recently, notions of cognitive flexibility have been extended beyond shifts in attention to include the ability to maintain simultaneously dual representations and flexibly switch between those representations when engaged in a task" (Cartwright et al., 2010, p. 62).

Cognitive flexibility varies among and within individuals (Cartwright, 2009). Cognitive flexibility is also domain specific (Cartwright, 2009). Thus, teachers must be aware that some students have the cognitive flexibility to deal with the demands of reading, while others do not. Also, some students may seem more flexible in one domain, such as mathematics compared to another domain such as language arts.

Letter-sound or grapheme-phoneme relationships in English are complex. Children in the early grades must learn these complex relationships in order to read well (Beck & Beck, 2013, Moat, 2010). To learn these relationships, cognitive flexibility is needed (Cartwright, 2009; Homer & Hayward, 2008). When young children enter school and reading instruction begins, cognitively, they are relatively inflexible (Cartwright, 2009). As children become more cognitively flexible, they tend to develop into good readers and conversely, if they remain cognitively inflexible, they tend to be poor readers (Cartwright, 2008). In fact, striving readers have less cognitive flexibility than their peers (Cartwright, 2012).

Cognitive flexibility in word level reading. While cognitive flexibility is required for reading words and reading comprehension, I will only focus on cognitively flexibility in relation to decoding words, which is the focus on the present study. First, cognitive flexibility is necessary to be able to read words. Beginning readers need cognitive flexibility to learn and use multiple strategies to decode words Gaskins (2008). Specifically, Gaskins recommends that beginning readers learn these four strategies: guessing based on context clues, decoding sounds, using word analogies, and recalling memorized sight words.

Teachers also need to be cognitively flexible (Cartwright, 2008). Cognitive flexibility is needed to recognize that children do not learn to read in the same way and to differentiate instruction appropriately (Gaskin 2008). Teachers must help students avoid misconceptions about decoding during early reading instruction. Teaching beginning readers at least four strategies for decoding words could provide them with the flexibility to learn to read and decrease the likelihood that form misconceptions about decoding.

Support For Striving Readers

When students enter school, teachers must rise to the challenge of helping all students attain high levels of reading proficiency expected by national and state reading standards and in order to participate in modern society. As soon as students are not learning to read on grade level, intervention is needed.

Response To Intervention

Since 2004, significant changes have been implemented in the United States to provide a new service delivery model for general education students, low achieving students, and students identified for special education services (Fuchs & Fuchs, 2006; Spear-Swerling, 2013). With the reauthorization of the Individuals with Disabilities Education Improvement Act in 2004, the

Response to Intervention (RTI) model was included as a new process for the identification of students in need of special education (Spear-Swerling, 2013).

One of the main purposes of RTI is to prevent long-term reading disabilities due to poor instruction (Scanlon, 2013/2014) and to avoid misidentification because of limited English language proficiency, low socioeconomic status, other disabilities or disorders (Pressley & Allington, 2015; Spear-Swerling, 2013). The RTI model (Fuchs & Fuchs, 2006) was also developed to reduce the numbers of students identified as learning disabled and placed into special education by ensuring students received appropriate instructional supports.

Under previous special education law, students were identified for special education services through a deficit model, which compared the student's IQ to his or her academic performance to determine if there was enough deficit to be considered a learning or reading disability (Spear-Swerling, 2013). In contrast to the deficit model, the RTI model for special education identification mainly focuses on prevention of learning disabilities by making sure all students receive research-based instruction in the core curriculum and receive early research-based intervention as soon as it is needed through a multi-tiered system of supports (Fuchs & Deshler, 2007; U.S. Department of Education, 2012).

Several key components of RTI have been outlined in the legislation (U.S. Department of Education, 2012). One key component is general education instruction in the core curriculum for all students. All students must receive instruction in research-based core general education curriculum in public schools. Another key component is screening of all students. Screening all students ensures early identification of reading difficulties or other academic needs. Two other key components logically follow screening of all students. Once identified as preforming below grade level, RTI requires that increasingly intensive research-based services be provided

immediately to those students in an effort to prevent widening learning gaps. With this model, homogeneous small group instruction has been widely implemented to provide immediate help to struggling readers before they fall severely behind their peers. And finally, progress must be monitored at regular intervals to evaluate the effectiveness of interventions (U.S. Department of Education, 2012).

While early identification of reading problems is critical, Hock, Brasseur and Deshler (2008) caution that early intervention does not solve the reading difficulties for some students. These students need support and intervention over the course of their education and interventions for older readers must be comprehensive in nature (Allington, 2011; Hock, Brasseur, & Deshler, 2008; Shaywitz, 2003).

RTI informs this study because the fourth grade participants need intensive intervention beyond the core general education curriculum and small group instruction delivered by the classroom teacher; therefore, the participants need specialized reading intervention in order to make further progress in reading proficiency.

Reading Intervention Instructional Best Practice

The National Reading Panel report (NRP, 2000) reviewed research-based instructional reading practices and found that explicit and systematic instruction of phonological awareness and phonics supports student learning. The NRP also noted that striving readers, particularly those in kindergarten through grade six, benefited from explicit and systematic instruction. Since the publication of the NRP (200), researchers have continued studying effective reading instruction and they recommend that it is (a) differentiated, (b) explicit, (c) systematic, and (d) includes practice with feedback.

Differentiation Instruction

Differentiation is delivering instruction and content differently to meet the needs of individual students and to maximize learning (Tomlinson & Eidson, 2003) by targeting each student's zone of proximal development (ZPD; Vygotsky, 1986) A student's ZPD is the difference between what a child has already learned and what he or she can learn next with assistance from another more knowledgeable and experienced person. Differentiation of instruction based on ZPD is one aspect of research-based instruction that supports striving readers (Allington, 2011; Pressley & Allington, 2015; Sousa & Tomlinson, 2011).

Assessment is critical to differentiation. In fact, RTI mandates universal screening and follow up assessments for the purpose of differentiating instruction that targets the specific learning that leads to higher level of reading proficiency (Fuchs & Fuchs, 2006). Teachers can use data from assessments, paired with knowledge of the phases of reading acquisition to identify the ZPD of students for differentiated reading intervention (Ehri, 2005; Spear-Swerling, 2013). For example, data will help teachers identify if an older striving readers has mainly word-level problems, comprehension problems, or a mix of both (Pressley & Allington, 2015; Shaywitz, 2003; Spear-Swerling, 2011). Basically, teachers must understand what the student already knows in order to provide appropriate instruction (Fuchs & Fuchs, 2006).

In addition to knowing what students need to learn, teachers must be able to match materials and strategy instruction to differentiate learning. Allington (2011) stresses that, "this requires teachers to routinely evaluate the appropriateness of reading materials and strategy use" (p. 251). Teachers must also be cognizant of the strategies they teach to students and be sure they align with types of reading difficulties students are encountering (Kucan & Palinscar, 2011). In short, differentiation requires knowledge of students learning needs so that strategy instruction and reading materials fit within each student's ZPD.

Explicit Instruction

Explicit instruction lessons begin with clear learning goals and success criteria, modeling, and teacher-guided practice (Archer & Hughes, 2011; Beck & Beck, 2013). Explicit instruction often includes three components (Archer & Hughes, 2011). First, is the "I Do It," the teacher models a skill or process so that students see a competent step-by-step demonstration. Next there is the "We Do It" or prompted or guided practice. Finally, there is the "You Do It" or unprompted or independent practice by students. Archer and Hughes (2011) recommends that students also be explicitly taught routines for learning. For example, when teaching students to decode words by analogy, it helps to write each word under the previous word so that students can see the onset and rime (e.g., c-at, b-at, fl-at). Further, it helps when teachers use the same verbal prompts when modeling the strategy (Archer & Hughes, 2011).

Some components of explicit instruction such as modeling and guided practice utilize the concept of scaffolding learning. Scaffolding is the process of giving sufficient support to students to complete a task that would be beyond their independent level (Hogan & Pressley, 1997). An example of scaffolding is using decodable text to practice a targeted grapheme-phoneme pattern that has been taught during the explicit instruction lesson. For many striving readers, decodable texts can provide the experience with the grapheme-phoneme relationships needed to master those patterns (Beck & Beck, 2013; Spear-Swerling, 2011; Shaywitz, 2003). Decodable texts are short passages or books that have a high number of words with the grapheme-phoneme pattern presented in the lesson (Beck & Beck, 2013). During reading instruction, students should read books that are at their instructional level, which is considered with their ZPD (Allington, 2011).

Part of explicit instruction is providing (a) prompted practice, (b) feedback during practice, and (c) unprompted practice opportunities. Prompted practice also known as guided

practice is a way to scaffold learning for striving readers. After the teacher models by describing and demonstrating what competent performance is, the students practice with teacher support (Archer & Hughes, 2011). The prompts may be physical, verbal, or visual (Archer & Hughes, 2011). Guided practice gives the teacher the opportunity to assess if students can accomplish the learning task with prompts.

Feedback is giving information about errors to enhance performance (Hattie, 2012; Spear-Swerling, 2011). Hattie (2011) states that feedback reduces the gap in the ZPD so that the student can achieve the next higher level of performance. A critical part of supporting learners during prompted practice is feedback. Hattie (2012) discusses his meta-analysis that found that feedback is the most effective tool teachers have in supporting students during learning. Teachers can provide task specific, process, or self-regulation feedback Hattie (2012). Process feedback is cognitively more complex because it helps to improve strategy use, prompt finding relationships and other processes that produce deeper learning (Hattie, 2012).

Hattie (2012) cautions teachers to keep praise and feedback separate because praise is not feedback. Confusing the two can dilute the power feedback brings to learning (Hattie, 2012). Practice with adequate feedback is part of the solution to the problem that reading is not innate, abstract in nature, and the orthography of English is opaque (Beck & Beck, 2013; Coch, 2010; Gabrieli, Christodoulou, O'Loughlin, & Eddy, 2010).

During an explicit instruction lesson, unprompted practice provides an opportunity for students to apply what they have learned without physical, verbal, or written prompts from the teacher (Archer & Hughes, 2011). The teacher still monitors students and can move back into prompted practice if errors in performance are evident (Archer & Hughes, 2011).

Not all students need the same level of explicitness to learn. The level of explicitness needed depends on how much expertise a reader has already developed (Kucan & Palinscar, 2011). For example, Kucan and Palinscar (2011) found that readers who scored in the top 10% of proficiency made stronger gains with more implicit instruction, while readers scoring in the lowest 25% made gains with explicit teacher instruction. They concluded, along with Allington (2011), that explicitness depends on the needs of the reader.

Striving readers need explicit instruction specifically that aligns with their phase of reading development. Students learning how to reading need explicit instruction related to phonological and phonemic awareness, phonics and spelling (Moat, 2010; Shaywitz, 2003; Spear-Swerling, 2013). Ehri and McCormick (2013) stress the importance of developing phonemic awareness through activities including identifying beginning and ending sounds, stretching out sounds in words, using mnemonics. With respect to phonics, they recommend matching words sounds to letters. While these activities are typically taught in kindergarten, Ehri and McCormick (2013) stress the need for explicit instruction for older students who still need to learn these concepts and skills. Likewise, other researchers have recommended explicit word-level instruction for striving readers (Ehri & McCormick, 2013; Kapinus, 2007; Shaywitz, 2003; Spear-Swerling, 2011), emphasizing that the more severe the reading problem is, the more explicit the instruction needs to be for students (Shaywitz, 2003).

Systematic Instruction

The National Reading Panel (2000) recommended systematic phonics instruction as researched-based best practices for beginning and striving readers. Systematic instruction is a planned sequenced of instruction so that students learn skills building from simple or prerequisite to complex (NRP, 2000; Spear-Swerling, 2011). Systematic instruction, along with explicit

instruction, is essential to effective reading instruction (Shaywitz, 2003) and when teaching striving readers (Kapinus, 2007). With respect to reading, there is a scope and sequence that is used in systematic phonics instruction and it is reflective of the learning in each developmental phase (Beck & Beck, 2013; Ehri, & McCormick, 2013; Moat, 2010; Spear-Swerling, 2011).

Practice

To become proficient readers, students need a lot of practice (Ehri & McCormick, 2013). Reading practice can lead to changes in neural connections (Shaywitz, 2003), which helps students to become more proficient (Coch, 2010; Shaywitz, 2003). Specifically, due to neuroplasticity, the brain is rewired as a student engages in reading (Sousa, 2010); for example, "building multiple visual systems specialized for orthographic processing of text" (Coch, 2010, p. 143). In fact, reading practice can actually rewire the brain to diminish the effects of reading difficulties, even neurologically based ones such as dyslexia (Shaywitz, 2003).

Another important result of practice is that it brings automaticity in word recognition. When a student can recognize and access the meaning of the word through memory rather than decoding it each time, short-term memory is freed for comprehension (Coch, 2010; Pressley & Allington, 2015).

While practice seems common sense, when readers struggle, they often avoid reading activities (Shaywitz, 2003). In other words, to engage in practice, striving readers need support and guidance. Repeated oral reading with feedback is one way to assist readers and it may correct neural level problems, thereby improving reading fluency (Shaywitz, 2003). Unfortunately automaticity in word recognition requires much more practice for some students than for others.

Word Level Knowledge

When learning how to read, the primary focus is on decoding the printed words (Pressley & Allington, 2015). When striving readers have difficulty reading on grade level because of decoding difficulties, they need instruction at word level knowledge.

Phonics instruction. Phonics instruction is the teaching of the relationship between phonemes or individual sound, and graphemes, which are the letters that represent those sounds (Beck & Beck, 2013). In English, there are 26 letters of the alphabet and they represent 42 phonemes; this lack of one-to-one correspondence between letters and phonemes makes learning how to read English so challenging (Beck & Beck, 2013). However, students can be taught that there are patterns in words and that these patterns can be used to help them to read other words.

Phonics instruction, which involves letter-sound correspondences and spelling patterns, typically follows a scope and sequence (Beck & Beck, 2013; Moat, 2010). For example, knowing some letter names and sounds is a prerequisite to learning the CVC pattern, which is typical the first pattern taught (Beck & Beck, 2013; Moat, 2010). After CVC, consonant blends (e.g., bl, br, cl, cr,) and digraphs (e.g., ch, sh, th, wh) are taught followed by CVCe patterns, vowel teams (e.g., -ai, ay, ea, ee, oa), and then more complex vowels (e.g., ou, ow, ey) and less common consonant letter combinations (e.g., gn, and silent b). The phonics taught should be matched to the phases of development of the student (Ehri & McCormick, 1998).

Decoding Strategy Instruction

Decoding is applying knowledge of grapheme-phoneme relationships to pronounce or read an unknown word (Spear-Swerling, 2011). Ehri and McCormick (2013) described four strategies that proficient readers use to decode words (a) synthetic, (b) analogy, (c) prediction, and (d) by sight. The National Panel Report (2000) emphasized the effectiveness of synthetic and analytic strategies; therefore, those two will be emphasized during the intervention.

Richardson (2009) distinguished knowledge as information readers must have or the facts such as which phoneme to say for the matching grapheme in print, and strategies as the processes or action plan used to apply knowledge. Ehri (2005) explained that sight words are not a strategy because there is no process of conscious planning and execution to recall instantly from memory. Along with the phonics knowledge, decoding strategies need to be taught.

Synthetic strategies. Synthetic phonics strategies are characterized as part to whole decoding (Kucan & Palincsar, 2011). The most commonly used synthetic strategy involves identifying each letter in a word, saying the sounds by segmenting them, and then blending the sounds orally into the word represented by print. For example, when decoding the word "smack" the student segments the word into individual phonemes /s/ /m/ /a/ /k/ and then blends them together to pronounce the word. This strategy is often called "sound it out" by teachers (Kucan & Palincsar, 2011). Teaching students to pronounce words by recognizing onsets and rimes is also a synthetic strategy (Kucan & Palincsar, 2011). For example, when a student divides "smack" into /sm/ /ack/ and then blend the onset and rime together to pronounce the word.

Prediction. Another strategy to decode words is prediction. Ehri and McCormick (1998) discuss that beginning readers predict words based on pictures clues, semantic clues, and first letter sounds. The prediction strategy is only recommended for reading early in the partial alphabetic stage when predictable books are used where most of the meaning is in the pictures and words on the page are few (Ehri & McCormick, 1998). When striving readers use this strategy for texts outside of their zone of proximal development, guessing becomes problematic (Pressley &Allington, 2015).

Analogy. Decoding by analogy is when a reader uses a known word to determine the pronunciation of an unknown word (Pressley, 2006). Decoding by analogy is considered a whole to part strategy (Kucan & Palincsar, 2011). For example, once I recognize the word "jump," I can compare it the word "stump" and read it assuming the rime is pronounced the same. This type of decoding is thought to be less cognitively taxing than letter-by-letter decoding (Ehri, 2005; Ehri & McCormick, 2013; Pressley, 2006).

When educators teach both synthetic strategies and analogy strategies together, students make more gains in decoding more than if only one strategy is taught (Pressley, 2002).

Sight words. Sight words are the words that a reader can recall automatically and without the effort of decoding (Pressley, 2006). Readers in the fully alphabetic and consolidated alphabetic phases of reading development have large sight word vocabularies allowing them to apply the other decoding strategies words that appear more rarely in texts.

In sum, teachers of striving readers need to know a large number of strategies that support decoding (Kucan & Palinscar, 2013), in order to match a strategy to the specific needs of the readers (O'Connor & Goodwin, 2011).

Summary

In this chapter, I described striving readers focusing on those whose primary difficulties are with decoding fluently. I presented the developmental progression of reading through phases that require decoding to reach levels of greater reading maturity, and cognitive flexibility that is essential to proficient reading. Instructional supports recommended for striving readers were discussed including instructional delivery through RTI, recommendations for intensity of instruction, and the content of intervention lessons.

In the next chapter I present the method and methodology of the present study.

Chapter 3 Methods

The purpose of this study was to understand how fourth grade striving readers respond to reading intervention instruction. The focus of this inquiry was on the following question: How do 4th grade striving readers demonstrate progress when participating in an intensive and explicit reading intervention?

Research in the field of education requires comprehensive knowledge of research methodologies in order to design a rigorous scientific study. Methodology encompasses both the philosophy of beliefs that the researcher holds about the nature of knowledge and the research processes used to design and conduct the research (Schwandt, 2007). An education researcher must first determine whether to conduct a study using quantitative, qualitative, or mix-methods methodology. Creswell (2014) advises researchers to start with their philosophical leanings when deciding on methodology and method. Yin (2014) suggests that researchers look at the types of questions they plan to study when determining whether to use quantitative or qualitative methods. This chapter explains the study design by making the methodology explicit.

Case Study

Case study is distinguished from other interpretive qualitative methods by several characteristics. The most important characteristic of case study is that the focus of the study is a clearly defined case. The case is the phenomena being investigated such as a person, group, relationship, program, or system (Merriam, 2002; Stake, 2006; Yin, 2014) that involves contemporary people or issues (Yin, 2014). In order to be considered a case study, the researcher must be able to "bound the case" by describing the boundaries that distinguish the case from other cases and other methods (Merriam, 2002; Stake, 2006; Yin, 2014).

The context of the case is another important characteristic meaning it (a) exists in the world, (b) is complex, and (c) is contemporary rather than historical (Stake, 2010; Yin, 2014). Therefore, part of the complexity being researched is that the case cannot be studied in isolation; it must be studied in the setting where it happens called the case context. Finally, Stake (2006) points out that a case study involves the research design and execution as well as the final product.

Definitions of case study have been broad and confusing as case study has emerged over time (Yin, 2014) and this controversy still exists. For example, Stake (2006) states, "A case study is both a process of inquiry about the case and the product of that inquiry" (p. 8). On the other hand, Yin (2014) offers a two-part definition of case study. First, Yin (2014) addresses case study by defining the scope.

> A case study is an empirical inquiry that a) investigates a contemporary phenomenon (the "case") in depth and within its real-worlds context, especially when b) the boundaries between phenomenon and context may not be clearly evident (p. 16).

The second part of Yin's (2014) definition describes case study features.

> A case study inquiry a) copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result b) relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result c) benefits from the prior development of theoretical propositions to guide data collection and analysis (p. 17).

Yin (2014) recommends that the choice of qualitative over quantitative method should be based on the types of questions being asked, and those questions should be "how" or "why" questions. Another case study criteria is that variables should not be manipulated as in an

experimental design because variables are too complex to be certain they are distinct from the context in which they are embedded.

Multiple Case Study

When designing a case study, there are times when it is advantageous to conduct a multiple case study. Multiple cases may be used when there is potential for more comprehensive understanding resulting from investigating more than one case (Stake, 2006).

A multiple case study is more than one case being studied in relationship to common phenomena. The multiple case study must be an integrated system with a "binding concept or idea" (Stake, 2006, p. 8). A cross-case analysis is conducted after the data has been analyzed for each individual case in order to describe that binding phenomena (Stake, 2006). Yin (2014) considers multiple case study to be more robust in demonstrating study findings than single case study (Yin, 2014).

The present study has a multiple case study design. Each student participant that received instruction in the intervention group is a case study. The class consisted of four student participants and one non-participant. No data for the non-participant student is included in these findings. The research question was investigated in relationship to each participant, then the phenomena of the learning of the group became the binding concept of the multiple case.

Setting and Participants

In multiple case study research, the setting and participants are critically important because, as Stake (2006) explains, case study research examines the experiences of participants in their real life environment and it also takes into account participants' history (Stake, 2010). Further, Stake (2006) holds that the context interacts with the case and the case interacts with the context. Likewise, Yin (2014) emphasized that in multiple case study the context is so complex

that it is difficult to separate the phenomenon of interest from the context. Finally, Stake (2006) argues that the questions being investigated drive participant selection because participants are the source of data to be collected during the investigation. The idea of studying the participants in their context is unique to qualitative studies.

Setting

The setting of this study was an elementary school in an urban city in the Midwest region of the United States. The United States Census Bureau estimates the population of this city as 127,000 for 2016 with a median annual income was $44,000.

School district demographics for the school year 2016-2017 indicated that the student enrollment was about 14,000. Of this student population, 49% are female and 51% are male. The student population is somewhat racially diverse with 17% identifying as African-America, 32% Hispanic, 14% other races, and 37% White. The district demographics further indicate that 71% of students are economically disadvantaged and 19% have identified disabilities, which qualified them for special education. The district graduation rate in 2016 was 75%, which is below the state average of 86%.

State performance data scores on the English Language Arts assessment are reported in four proficiency levels. Category one indicates students need instruction in foundational knowledge and skills because they are preforming below their grade level. Category two indicates students are approaching grade level achievement, yet lacking knowledge and skills to be on track for college and career readiness. Category three indicates students are solidly on grade level and are expected to be college and career ready. Category four indicates students are performing above the expected state standards for their grade level.

The school district performance on the English Language Arts portion of the 2017 state assessment indicated that 43% of students fell in the category one, 35% were category two, 18% were category three, and 4% were category four. The school district uses *Beginning* for the State Category One, *Developing* for Category Two, *Proficient* for Category Three, and *Advanced* for Category four. The school district descriptors are used to discuss some assessments in Chapter 4.

This study was conducted at Kennedy Elementary School (pseudonym), which is a Title 1 school. The student population at Kennedy Elementary was similar in demographics to the school district population. According to school district demographics for the school year 2016-2017, the enrollment at Kennedy Elementary was 300 students in kindergarten through fifth grade. Of this student population, 50% are female and 50% are male. Racially diversity was reported to include 25% identifying as African-America, 22% Hispanic, 12% other races, and 41% White. School demographics also indicate that 57% of students are economically disadvantaged and 16% have identified disabilities.

Kennedy Elementary performance on the English Language Arts portion of the 2017 state assessment indicated that 38% of students fell in category one Beginning, 32% were category two Developing, 27% were category three Proficient, and 3% were category four Advanced. All students at Kennedy Elementary were tested on the state English Language Arts assessment.

When comparing the performance scores of Kennedy Elementary on the 2017 English Language Arts state assessment to the school district composite scores, Kennedy Elementary had 65% of students in categories one and two, which is slightly better than the district percentage of 78% of students for those same categories. Much improvement is needed in order for all Kennedy Elementary students to achieve college and career readiness in English Language Arts.

Kennedy Elementary School is a desirable setting in which to conduct this multiple case study because a large number of students are classified as striving readers; that is, they not proficient readers and they need additional instruction provided through reading intervention.

Participants

A participant in case study research should be chosen because the participant called a "case best" represents the phenomena of interest (Stake, 2006; Yin, 2014). Stake (2006) also indicated that in multiple case study researchers often partially identify samples before the design of the study is complete. For this study, "purposeful sampling" was used to select participants or cases that had the potential to provide sufficiently rich information to understand the phenomena of interest (Creswell, 2014; Merriam, 2002). Further, there are three subtypes of purposeful sampling, which include (a) convenience, (b) intensity, and (c) criterion sampling, Each of the three were used to further clarify how participants were selected. A convenience sample is one that is available and known (Marshall & Rossman, 2011). Marshall and Rossman (2011) have given the label, convenience sample, to cases at sites readily accessible to a researcher. An intensity sample is one that represents the phenomena of interest and potentially can provide rich information regarding the phenomena, yet the cases are not the most atypical examples (Marshall & Rossman, 2011). Additionally, criterion samples are described as samples where all cases met the criterion for participation (Marshall & Rossman, 2011).

For this study, I selected cases using a combination of these three purposeful sampling strategies (a) convenience because I already had access to the district as an established employee, (b) intensity because I spent extended time with participants during the study as their intervention teacher, and (c) criterion because the participants had to meet predetermined criteria

as striving readers according to state, district, and school criteria to be included in a reading invention class.

Participation in this study was based on three criteria. First, a student's current reading performance had to be reading one to two years below grade level thereby qualify for reading intervention class according to district and school assessments. Second, the student was in the fourth grade at Kennedy Elementary. Third, the student needed intervention in phonics in order to resolve reading problems. I identified and recruited four students, Alex, Aryianna, Bryan, and Jordan, to participate in the study. The individual participant is considered a case study, and the whole group is considered the multiple case study. The findings for two cases Alex and Bryan are reported in Chapter four.

Alex. Alex (pseudonym), a female African American student, was 9 years and 6 months when the intervention began. Alex has been enrolled at Kennedy Elementary since kindergarten with the exception of the first four months of first grade when she attended another school within the school district. Also, while in kindergarten, Alex was absent 33 days, so she missed continuity of instruction that year. After reenrolling at Kennedy Elementary in the fall of her first grade year, Alex has had better attendance missing only four to nine days each school year.

Alex has had a history of difficulty with learning how to read and she has needed intervention support in reading. Reading intervention records confirmed that Alex received reading intervention instruction during her first and second grade. During second grade, Alex was in the General Education Intervention (GEI), which is part of the school districts implementation of Response to Intervention (RTI) Tiered System of Support. While in the GEI process, interventions are added with weekly monitoring of reading passages by the classroom teacher to determine if the interventions were effective. Since Alex was not making adequate

progress in reading, the GEI team referred her for special education evaluation. She was evaluated at the end of second grade in May of 2015, but Alex did not qualify for special education services. The evaluation records were unclear about the rationales for disqualification. Additionally, Alex did not receive reading intervention while in third grade.

The school district had adopted RTI Tiered Systems of Support; therefore, universal screenings of all students are conducted three times each academic year. At the beginning of the 2016-2017 academic year, when Alex was in fourth grade, it was determined through the universal screening that she was reading at the beginning first grade instructional level. The universal screening assessments included the Scantron Performance Assessment and Fountas and Pinnell *Benchmark Assessment System 1* or *2*.

Mr. James (pseudonym), Alex's classroom teacher, referred her to the Kennedy Elementary General Education Intervention (GEI) Team in October 2016 for additional reading intervention and weekly monitoring to determine if additional intervention could help her improve her reading. As a member of that GEI team, I knew that Alex needed intervention support. I recruited Alex to participate in this study because she needed instruction in decoding according to assessments (see Tables 1 and 2). After this study intervention was underway during the 2016-2017 academic year, the GEI team added a second reading intervention. The second intervention Alex received was the Read Naturally program for 20 minutes per day, five days per week to improve Alex's reading fluency. The Read Naturally intervention was taught by a Title I paraprofessional.

Bryan. Bryan (pseudonym), a male Caucasian student was age 10 years and 2 months when the study began during his 4th grade year of elementary school. Bryan had been enrolled at Kennedy Elementary since kindergarten and he has had good attendance throughout the elementary grades.

Bryan is energetic, talkative, and he has considerable knowledge of the world. Bryan was diagnosed with ADHD toward the end of his third grade year. Bryan takes medication for ADHD, which has been changed a number of times to find medication without side effects. The main side effect that affected Bryan during while in third and fourth grade was sleepiness. By mid morning on many school days, Bryan would sleep for hours most often on the carpet under his table in his classroom. During the study, also Bryan complained of frequent, severe headaches. Bryan had an eye exam in the summer and was prescribed glasses. His eyesight changed dramatically through the fall. New glasses were prescribed again in December; however, glasses did not resolve the headaches, or his reading difficulties.

Bryan's family went through major changes from the end of third grade and while he was in fourth grade. Although most of the changes were positive, Bryan was adversely affected emotionally between November and early April. Bryan had behavior problems such as being defiant, disrespectful to peers and teachers, refusing to work, and hiding. These disruptive behaviors began in November and resolved by April. While Bryan had a history of poor attention due to ADHD, he had always been a very respectful and cooperative student.

Bryan's reading difficulties began early in his school experience. During his kindergarten year, he worked one-on-one daily with Mr. Para (pseudonym) to learn letters names and sounds. Mr. Para used many learning games and incorporated toys into his lessons in order to keep Bryan

highly engaged, yet Bryan had trouble learning letter names and sounds. Since kindergarten, Bryan has continually been in reading intervention, yet he remained below grade level.

During fourth grade and concurrent with this study, Bryan was in the General Education Intervention (GEI) process at Kennedy Elementary; therefore, he had weekly monitoring to determine if the interventions were effective. I was a member of that GEI team as well as his reading intervention teacher. In addition to the reading intervention class I taught, Bryan met with a Title 1 paraprofessional and one other fourth grade student for 20 minutes five days per week using the Read Naturally program to improve his reading fluency. Data was collected for GEI monitoring, but was not included in this study.

Bryan was recruited as a participant in this study because his main need for instructional support was decoding according to school and research assessments (see Tables 11 and 12).

Necessity for a Different Intervention

Upon taking the role of the elementary reading specialist, I quickly learned that some students as late as fifth grade could not accurately decode words. Some of those students could not name the vowel letters, recognize consonant and vowel patterns in words, or divide words into syllables. While these students had been taught phonics in the primary grades according to the traditional scope and sequence of initial consonants, short vowels (e.g. a in can, e in get, i in bit, o in mom, u in but), consonant blends and diagraphs (e.g. ch in chop, th in that, sl in slip), the consonant-vowel-consonant-e (CVCE) pattern (e.g. make, like), the consonant-vowel-vowel-consonant (CVVC) patterns, r-controlled vowels (e.g. ar, er, air, ire), and finally diphthongs (e.g. oo in look, oy in toy) and other complex vowel patterns (e.g., /u/ in bulk, /o in crowd), they had not learned how to decode in order to read words that were not in memory for automatic recall; therefore, they were not reading at grade level. Since students had already experienced the

traditional scope and sequence in each of the primary grades, as well as in reading intervention, different instruction was needed.

The intervention for this study was developed over time as I observed and learned how to teach students in grades three, four, and five who could not read at grade level because of decoding difficulties. First, based on Bloom and Bloom (1984) I gained a new perspective on how to teach grapheme-phoneme relationships by presenting a vowel sound and listing all the variations of spellings for a specific sound. Second, in reviewing research, I learned that asking students to compare and contrast or to look for similarities and differences is a powerful tool. In fact, according to a meta-analysis conducted to determine the most effective instructional strategies, teaching students to compare and contrast had the greatest effect size for improving achievement (Marzano, Pickering, & Pollock, 2001). For example, when teaching the vowel *o*, I taught all the spelling patterns for *o* by providing a chart with elements of an alphabet chart and example words. In sum, comparing and contrasting grapheme-phoneme relationships facilitated students' ability to decode words.

The intervention involved comparing and contrasting of vowel patterns by using elements of (a) synthetic phonics where patterns are first looked at in isolation, (b) analytic phonics by exploring what are called word families in primary grades, (c) sorting words by patterns, (d) finding words in books that have the pattern of study, and (e) reading books to practice patterns in context to apply new knowledge and strategies.

Intervention Introduction

On the first day of instruction, vowels were presented to be certain that students could name the vowels, clarify their function in words, and discuss why they were difficult to figure out in English. After this introductory lesson, students learn procedures and routines for four

types of daily lessons. Finally, students participate in a four-to five-day lesson cycle, using the same learning routines for each vowel pattern. Three of the four participants had this intervention for 20 minutes 4 days a week during the previous academic school year. The fourth participant may have benefited more from the present study if she had received this foundational intervention during her third grade year.

The intervention taught for this study used the same learning routines, but rather than vowel patterns, the content was a) knowledge of complex grapheme-phoneme relationships of consonants and knowledge of syllable types, b) strategies to increase correct decoding of words. The theoretical underpinnings suggested that correctly practicing and prompting students to try another phoneme for that letter might increase cognitive flexibility and thereby aid in more automatic decoding.

Grapheme-Phoneme Comparisons

The first step in the intervention was to introduce a target grapheme-phoneme that students have difficulty with when decoding. Participants wrote notes with the letter, phonetic pronunciation, and example words. Next, I asked participants give examples of words they knew that have that phoneme in various positions in words. Participants recorded all correct examples in their notebook. At the beginning of the intervention the letters *g* and *c* were taught because students could not decode words accurately that included graphemes other than the hard *g* sound or hard *c* sounds.

After all the grapheme-phoneme relationships for one letter were taught, I provided a visual organizer (example in Appendix A) that showed the spelling patterns for all the phonemes that are associated with that letter in columns. Each grapheme-phoneme had a reminding picture and reminding words to serve as a reference point during decoding. For example, the pictures

used to prompt the soft *c* are a penny and a boy's face. Reminding words for soft *c* were *cent, city, cycle, face*, and *license*. The purpose of the chart was to compare and contrast all the ways the letter will appear in words. During instruction we said the sounds out loud many times so participants could hear the target phonemes correctly in isolation and in the reminding words. During these introductory activities, we often counted the phonemes in words on our fingers. These fourth grade striving readers still have trouble separating the number of letters in words from the number of phonemes heard in words. In order to help students decode accurately, we counted phonemes to convey the concept that often there is not a one-to-one correspondence between graphemes and phonemes.

Word Find

After lessons introducing all the grapheme-phoneme relationships for a letter, a word find activity was conducted to help students see these patterns embedded in connected text. First, I modeled how to scan the pages for the target letter. Each participant wrote down words containing the target letter that he or she found in their notebook. During the next lesson, each participant volunteered words they had found. The group discussed which column represented the correct grapheme-phoneme relationship for that word. Words were then written in the correct column so that students all had many examples of words for each grapheme-phoneme relationship for that letter.

Reading The Text

Once all the example words were explored, the class choral read the passage. Choral reading supported correct practice of these target phonemes. One book used for these activities had a play, so the next reading was with assigned characters. After the play was read once, the role rotated one participant to the right, so eventually all parts were read by each participant.

The rationale for these choral readings was to maximize correct practice of the new knowledge of grapheme-phoneme while experiencing a good story or informative text.

Analogy Practice

Although there are many printed intervention materials that have target phonemes for focused practice, using electronic devices can maximize accurate practice by allowing striving readers to hear accurate pronunciations of target spellings.

For analogy practice, I used the *Phonics Genius* application available in Apple App Store (Alligator Apps, 2017). The app has over 6,000 words arranged by onsets and by rime phonemes. When practicing the letter g, there are separate lists for *g* as in *gum*, *g* as *j* sound in *angel, gl, dge*, *ge, gn, gr, graph*, and *ing*. The app has features that allow a teacher to differentiate assignments to students. One app feature is a speaker so that students can hear correct pronunciation of words with the target phoneme. The speaker can be turned off for independent practice. The app also has a record feature. The teacher can have a student record him or herself reading the words for accuracy checks.

When I used the *Phonics Genius* app during practice, participants alternately read words with a partner. Each group of two students read words with a different target grapheme-phoneme pattern so that they could not echo read what others pairs were reading. When a pair finished one pattern, a new pattern was assigned. Another benefit of using this app is there are words that striving reader fourth graders have not seen in print before. As they asked about the meaning of words, I offered simple definitions and example sentences, so vocabulary building was incidentally facilitated.

Decodable Passages

To provide in context practice with the targeted grapheme-phoneme relationships, I used decodable intervention materials. Since the passages contained both targeted letters *g* and *c*, participants marked the letter *g* with a green colored pencil, and the letter *c* with an orange colored pencil. After the students finish locating all the words with the target letters, they read the passage with a partner. The whole group then worked through the passage to be sure that all the words with the target patterns have been identified. During the study, participants became internally competitive focusing to accurately identify all the target words within the decodable passages, so they have bragging rights during the culminating whole group checking. This learning activity was time consuming; however, it gave students the opportunity to see the graphemes in passages that were decodable, yet had simple story elements too.

Strategy Instruction

The decoding strategy instruction component of this intervention necessitated that I rethink how to convince the participants they needed to change their reading habits. I knew that classroom teachers and I had taught these basic decoding strategies previously; however, my participants had not applied them effectively.

In order to motivate my class, I created a power point presentation titled, "Reading Is Like Driving." My rationale was that if I presented the strategies with the adult practice of driving, fourth graders would not think these strategies babyish. Each picture of the presentation had a question caption to provoke discussion about advice for a driver. For example, the first slide was of complex switchback mountain road. The presentation presented photographs representative of actions a driver must do to be successful that were analogous to a decoding strategy. Slides pictured the necessity to a) slow down, b) stop, c) look both ways, d) chunk -

one step at a time, and e) back up and try again. See Appendix B for excerpts of the presentation.

Independent Reading

The learning objective for independent reading was for students to decode words with all of the patterns they have studied during the intervention in a meaningful way. Typically, as the intervention group cycled through patterns, students made connections pausing to share a discovery with a classmate. These discoveries were usually interesting information. During the lessons when students were independently reading, I took records of oral reading with one or two participants during a class period in order to observe their use of knowledge and strategies.

Intervention Specifics

At Kennedy Elementary, intervention groups are fluid based on data, which is collected every four to six weeks using formative assessments. For this study, I obtained permission from the building principal to keep my fourth grade intervention group static. No new students were admitted to this intervention group during the study. During the study, the intervention group was scheduled to meet for 30 minutes five days each week. Data was collected for 17 weeks and some additional short weeks before holidays or parent-teacher conferences.

Although this is a unique phonics intervention designed to help students deepen their knowledge and use of strategies to decode words, the intervention is not the case. The focus of this study was on the individual student within the class and his or her learning.

Researcher Role

Two characteristics of qualitative research intersect with the role of a researcher conducting a case study. The first characteristic of qualitative research that impacts the researcher is the philosophical stance of relativism (Yin, 2014), the idea that social knowledge is

not discovered, but constructed in specific social contexts at a specific point in time (Creswell, 2014; Merriam, 2002; Stake, 2010). The researcher's role then is to understand, through her background and experiences, the unique implications of the case(s) and the context she is studying. The second characteristic of qualitative research that relates to the researcher's role is that the human researcher is the primary instrument (Merriam, 2002; Stake, 2010). Yin (2014) explains that qualitative research is empirical meaning filtered through the human senses. Understanding and interpreting the phenomena of interest is the main function of the researcher (Merriam, 2002; Creswell, 2014). The researcher then describes the study findings in the final written form.

In this study, my role as researcher was rooted in a deep interest in reading intervention instruction. I have studied striving readers from kindergarten through high school over the course of my education career as classroom teacher, intervention teacher, instructional coach, private tutor, and parent. For the past seven years, I have taught reading intervention to students in kindergarten through fifth grades who are reading below grade level.

In qualitative research, the researcher is not a detached observer (Marshall & Rossman, 2011). Yin (2014) explains that one of the advantages of qualitative research is that the researcher is not a detached observer; rather she is often an active participant. In this study, I was the reading intervention teacher for the participants as well as the researcher. The purpose of this study was to understand deeply how fourth grade striving readers learn, being completely immersed in the experience with the participants served this purpose well.

Since the advent of Response To Intervention (RTI), reading intervention has shifted from a remediation model to a prevention model. Studying the learning of striving readers

receiving intervention will enable educators to better understand the needs of students, and possibly uncover phenomena that are unique to this age group.

Data Collection

Data collection for this study began after obtaining Institutional Review Board approval from the University of Kansas, receiving approval from the school district administration research review committee, and permission from Kennedy Elementary administration. Next, I worked with school administration to verify which students might potentially benefit from the class. After reviewing district assessment data, a group of fourth grade students, who matched the criteria for inclusion in the research intervention, was identified. Recruitment began when I met with parents face-to-face using the Recruitment Protocol (Appendix C) to explain the purpose of the study, the curriculum of the class, and the benefits of participation and, the minimal risks to student participants in this study. I obtained parental consent (Appendix D), and student assent (Appendix E) from the four participants. The participants' classroom teachers also signed informed consent documents, so I could learn their perspectives about how their students learned to read (Appendix F).

The data for each case study was collected from documents, interviews, and observations in the intervention setting. In a multiple case study, the researcher's first purpose is to gather data about the ordinary activities for each case separately (Stake, 2010). Thus, data collection for a multiple case study most often occurs in the setting where the phenomenon of interest occurs, and the researcher often spends extended periods of time in that setting (Merriam, 2002).

As with the setting and participants, data collection strategies are determined by the research questions (Merriam, 2002; Stake, 2010). Stake (2010) argues that each time new data is collected there is an effect on the research questions. Merriam (2002) notes each strategy for

data collection also shapes the data itself. Stake (2010) reminds researchers that interpretation is part of the data collection process when one conducts a qualitative study. Three common qualitative data collection strategies are observation, documents, and interviews. In order to understand how students demonstrate learning during reading intervention, different types of data sources helped to establish as trustworthy.

Observations

One of the primary data collection strategies used by qualitative researchers is to spend extended periods of time observing the participants in their everyday settings doing everyday activities (Creswell, 2014; Yin, 2014). The researcher enters the context of participants to hear, see, feel, experience the data with the participants (Stake, 2010). A researcher may be purely an observer making notes, or she may be a full participant in the activities, or a combination of active participant and observer (Creswell, 2014; Yin, 2014). Yin (2014) acknowledges the value of being an insider during observations for data collection because the researcher then has first-hand knowledge and experience to bring to the study.

Today many researchers use audio or video recordings in order to capture data during observations (Creswell, 2014; Marshall & Rossman, 2011; Stake, 2010). While using video or audio recordings captures data for later analysis, there are cautions that researchers must seriously consider when using this strategy during observation. The cautions will be discussed in a later section of this chapter.

Observation was the primary method of data collection. The participants were observed during their reading intervention group, which met for 30 minutes five days each week from November 2016 through early May 2017. The participants received consistent instruction because they had excellent attendance during the study. Attendance was verified by participant

comments on lesson transcripts. At the inception of the study, I got permission to video and audio record participants. The video recording equipment did not work reliably so audio recording was used. Group activities were audio recorded because as the intervention teacher, I was a full participant during the lessons, so observing as an outsider was not possible. The purpose of the recordings was to capture nuances of learning to answer the research question that would be missed because, as the teacher, I was attending to only a portion of what may be happening. By audio recording students while they learned, I was able to observe interactions that demonstrated that students were learning and using the knowledge and strategies presented during the lessons to improve their reading.

Observations during intervention lessons captured these characteristics of striving readers experiences included (a) segmenting and blending letter sounds to decode unknown words, (b) hearing and saying phonemes in words, (c) processing only part of the letter-sound relationships within words and then receiving prompting to correct errors, (e) developing automaticity in word recall (Pressley & Allington, 2015). Observable evidence of learning included strategy use such as a student slowing down to think about which vowel phoneme to try when encountering a new word in a passage of connected text, or student partners providing corrective feedback during partner or whole group activities.

My first role of utmost importance was to teach with excellence. Data collection took second place to student learning but students quickly adjusted to the audio recording equipment and focused on learning to read. When I did try to use the video recording camera, the students were much more distracted by the camera recording. Audio recording was not intrusive.

Documents

A second method of data collection in qualitative research is to gather documents. The types of the documents may vary widely from records of public meetings or the private documents of individuals such as diaries, or mail depending on the research question (Creswell, 2014). Researchers conducting evaluation or historical studies often rely solely on documents as a data source (Stake, 2010, Yin, 2014); however, documents can be a valuable source of data in education case study research especially used with other data collection methods (Yin, 2014).

For this study I gathered four types of documents a) formative and summative assessments, b) records of oral reading that were used to determine students instructional needs and reading progress, c) student lesson materials, and d) researcher. See Table 1 for more information about the data collected.

Table 1

Documents Used for Data Collection

Document Type	Academic Purpose	Research Purpose	Type	Administered
Scantron Performance Series for Reading	Measures vocabulary, comprehension, grade level equivalent	Provides educators with learning objectives for each student	Summative Assessment	Classroom teacher
Fountas and Pinnell *Benchmark Assessment System*.	Reading level diagnostic	Small group placement	Informal Assessment	Classroom teacher
Quick Phonics Assessment (QPA)	Assess phonics knowledge	Instructional planning	Informal Assessment	Reading Specialist
TOWRE	Assessment of phonics knowledge	Measure of Phonetic knowledge	Formal Assessment	Researcher
Records of Oral Reading	Assess types of reading errors	Instructional planning	Informal Assessment	Reading Specialist

The first type of documents I obtained was formal and informal reading assessments.

National assessment of reading performance. The district in which this study occurred used *Scantron Performance Assessment* as a way of measuring overall reading achievement of students with a nationally normed assessment. The *Scantron Performance Assessment* was given fall, winter, and spring, and students take this assessment on a computer. As a student answered questions, the test items become more difficult if the student answered correctly. Conversely, the test items become easier if the student selected incorrect responses. This method allowed for accurate assessment of performance in academic domains regardless of grade level (Scantron Corporation, 2017). The district measured student reading and mathematics achievement through this national assessment; however, only the reading scores are relevant to this study.

The school district reported the scaled score and the national percentile rank to teachers. The district categorizes students in four levels. *Beginning* means the student is performing below grade level. *Developing* means the student is near grade level. *Proficient* means performing at grade level. *Advanced* means performance above grade level. These performance levels are tied to the Common Core State Standards for college and career readiness.

Assessment for reading level. The school district also required elementary classroom teachers to assess all students' reading levels using the Fountas and Pinnell *Benchmark Assessment System (BAS) 1* or *2* (2008) at the beginning of the school year, at the end of the first semester, and at the end of the school year. The reading level was then used by the classroom teacher to plan guided reading lessons and by intervention teachers to plan intervention lessons in the student's Zone of Proximal Development (ZPD) (Vygotsky, 1986).

The *BAS 1* included a fiction and a nonfiction book for each level A through level N and is designed for use grades kindergarten through second. *BAS 2* included a fiction and a nonfiction book for each level L through level Z and is designed for use grades three through

eight. The levels of books are determined by a text gradient system that is explicitly explained for each level within the assessment manuals.

> A text gradient is a twenty-six point (A-Z) text rating scale of difficulty in which each text level, from the easiest at level A to the most challenging at level Z, represents a small but significant increase in difficulty over the previous level. The gradient corresponds these levels to grade levels (Fountas & Pinnell, 2008 p. 175).

The assessment kit included transcripts of each book on a recording form that the teacher uses to take a record of oral reading (Fountas & Pinnell, 2008) also called a running record (Clay, 2013), while the student reads aloud. Once the record of oral reading is completed, the accuracy and comprehension scores are determined. The table "Instructional Level Expectations for Reading" (Fountas & Pinnell, 2015) is used to interpret results from records of oral reading both for the *BAS* kit and from intervention lessons using any of the Fountas and Pinnell *Leveled Literacy Intervention* kits. The assessment manuals detail the importance of finding three reading levels for each student (Fountas & Pinnell, 2008). These three levels apply to each leveled book A through Z. And *independent reading level* is what the student can accurately decode and comprehend without instructional support from a teacher. An *instructional* reading level is what the student can accurately decode and comprehend with instructional support from a teacher therefore is within the student's ZDP. The *hard reading level* is a text that is too difficult for the student even with instructional support. Some publishers use the term "frustration level" (Leslie & Caldwell, 2017) rather than hard level (Clay, 2013; Fountas & Pinnell, 2008). The purpose of determining these reading levels is so the classroom teacher or intervention teacher can then evaluate the types of errors the student is making and plan instruction in the student's ZPD. Clay

(2013) emphasized that these three levels must be found in order for research results to be reliable.

TOWRE. The *Test of Word Reading Efficiency (TOWRE)* (Torgesen, Wagner, & Rashotte, 1999) is a nationally-normed assessment that can be used to monitor the growth of two kinds of word reading skills critical to overall reading ability; specifically the ability to accurately read familiar words as whole units or "sight words" and the ability to "sound out" words quickly. The *TOWRE* test was norm with 1,707 individuals. The reliability was established at 90% (Torgesen, Wagner, & Rashotte, 1999).

Quick phonics assessment. While the *TOWRE* is a nationally normed assessment of phonemic decoding skills, the *Quick Phonics Assessment (QPA)* is a screener that is designed to assess phonics knowledge from the beginning of the phonics scope and sequence. The assessment tasks begin with letter names and letter sounds and proceed through multisyllabic words. The *QPA* has an A task and a B task for most skills. Task 1a is a letter names assessment, and Task 1b is an initial letter sounds assessment. Beginning with 2a through 7a, the "A" task assesses nonsense words. The "B" task places the target phonemes in decodable sentences.

The purpose of using the *QPA* was to understand at what point on the scope and sequence the breakdown of phonemic knowledge was most profound. While the *TOWRE* gave insight into automaticity of consonant vowel decoding relationships, the *QPA* gives one the understanding of what patterns need to be retaught.

Lesson materials. A second type of document that I collected was lesson material from the reading intervention. Lesson materials included reading passages and artifacts of student learning such as word work. The purpose of collecting these documents was to understand how the participants responded to instruction and used strategies during daily lessons, and to determine evidence of learning.

Finally, I wrote some reflective memos. These memos contained (a) student interactions during the lesson, (b) evidence of learning, (c) questions, (d) insights, and (e) next steps for lesson planning. These documents were collected over the course of the study.

Interviews

A third method of data collection that is frequently used in qualitative studies is interviews. Interviews may be conducted (a) in person (Stake, 2010), (b) over the telephone, or (c) in focus groups (Creswell, 2014).

Two main types of interviews are in-depth and short. The in-depth interview involves (a) extended periods of time (b) possibly multiple sessions, and (c) open-ended questions seeking perspectives from the participants (Creswell, 2014). The short interview is designed to gather data in a shorter time period about an hour (Yin, 2014). The shorter interview is often semi-structured meaning that the questions are directed to elicit the information of interest to the researcher; however, having most of the questions structured does not preclude some open-ended questions being asked of the interviewer (Creswell, 2014; Yin, 2014).

For this multiple case study short interviews were conducted with the participants at the beginning of, middle, and at the end of the study. Interviews were conducted with the participants' respective classroom teacher at the beginning and end of the study. The purpose of the student interviews was to learn how students perceived their decoding abilities during the

study (Appendix G). It was critical to have the participants reflect on and talk about their own learning to fully inform this study. The purpose of the classroom teacher interviews was to determine if they saw students demonstrating an increase in phonics knowledge and applying strategies learned during the instructional intervention during read activities in the classroom (Appendix H).

The interviews were semi-structured and lasted about 15 to 20 minutes. There were two reasons for short interviews. First, as a researcher who is a full time teacher, I wanted to be respectful of classroom teachers' time commitments. Also Ms. Lee had three of the four participants, so the interviews would intrude more on her personal time. One of the conditions of conducting the study in this district was that teacher interviews had to be conducted outside of the official duty day. Second, the participants were intermediate elementary students meaning they were in grades three, four, or five. A longer interview would not be developmentally appropriate and did not seem necessary.

All information, written or audio/video recorded about any student or teacher is private and protected by law even when it was not part of a research study. Therefore, all documents used for data collection were treated with utmost care to ensure that student's privacy rights were upheld and to fully comply with the Internal Review Boards of the university and the school district.

Data Analysis

Qualitative data analysis is a complex process. One part of the process is to analyze the data by segmenting (Crewell, 2014) or taking it apart (Stake, 2010). Another part of the process is interpretation or giving raw data meaning through the lens of the research question, pertinent literature, and the researcher's understandings (Marshall & Rossman, 2011). A third part of the

process is synthesis or put together to make interpretations (Stake, 2010). One distinction of qualitative research is that data collection and data analysis are concurrent activities throughout the study allowing refinements to the methods (Creswell, 2014; Merriam, 2002).

The purpose of analyzing data was to understand what students were learning during the reading intervention and how teaching supports that learning. I anticipated that students would learn to use vowel patterns taught to decode words recorded previously as miscues on running records, or self-corrections during oral reading or words sorts. However, I also believed that by listening to audio recordings, I would notice more subtle student and teacher behaviors that student learning.

Creswell (2014) uses the analogy of the layers of an onion to describe this phase of research because there are multiple levels of analysis. Marshall and Rossman (2011) recommend a seven-phase process for rigorous data analysis. Yin (2014) argues that data analysis is the least defined component of case study research design. Using the phases identified by Marshall and Rossman (2011) seem prudent because I am a novice researcher.

Phase One: Organize

Phase One is to organize the data as it is collected (Marshall & Rossman, 2011). Coffey and Atkinson (1996) concur emphasizing the critical aspects of managing data so that the most critical data are easily retrievable. Yin (2014) highly recommends using computer software to organize datum. Marshall and Rossman (2011) recommend that researchers chose a system that may include using note cards, a researcher log with locations, times, and dates included, or using computer software to organize data sources.

I used an electronic word table to categorize and monitor data collection and transcription. An expert from my data log is shown in Table 2. I organized documents into 3-

ringed binders by participant beginning with the signed parental consent and student ascent a hand-written table recording by date the records of oral reading, assessment forms such as the *QPA* tasks and the *TOWRE* forms. I also kept separate 3 ringed binders for lesson plans and calendar pages for quick cross-reference of lesson dates and audio recording numbers. I did this because not all lessons were recorded. This was an efficient way to quickly locate data during other phases of data analysis.

Table 2

Data Log of Audio Recordings

Record ID	Type	Transcribed	Printed	File location	Date
DS300166	*TOWRE*	No	No	Aryianna	11-7-16
DS300167	*TOWRE*	No	No	Bryan	11-7-16
DS300168	*TOWRE*	No	No	Alex	11-7-16
DS300169	Interview	Yes	Yes	Ms. Lee	11-8-16
DS300170	Lesson	Yes	Yes	Transcripts	11-14-16
DS300171	Lesson	Yes	Yes	Transcripts	11-15-16
DS300172	Lesson	Yes	Yes	Transcripts	11-16-16

Phase Two: Immersion

Researchers indicate the necessity of extended time spent with data reading and rereading during this phase called immersion (Marshall & Rossman, 2011). Marshall and Rossman (2011) poetically recommend, "researchers should think of data as something to cuddle up with, embrace, and get to know better" (p. 210). Yin (2014) suggests, "a helpful starting point is to 'play' with your data" (p. 135). Coffey and Atkinson (1996) describe this phase as "thinking with the data" (p. 2). These authors are adamant that time spent reading and thinking in rather creative ways is essential in this phase.

In this study, part of the immersion process was (a) transcribing the recordings of lessons and participant interviews, (b) evaluating student work, and (c) in reading participant interviews

in light of documents collected from daily lessons.

While video taping can facilitate data collection while the researcher is in the role of teacher, Stake (2010) cautions novice researchers that effectively using video or audio recordings for data collection and analysis requires knowledge and experience both in the subject matter and in transcribing accurately. Marshall and Rossman (2011) further caution that the utmost care must be taken to transcribe accurately to include punctuation and include any body language or tone of voice in order to preserve the participants' meanings.

Although I am a novice researcher, I have had previous experiences with both audio and video recordings. Some of these experiences were requirements of graduate courses at the University of Kansas. Other experiences were job assignments while I worked for a research center at that same university. I have collected data through observation where I have not been a participant. I have also conducted face-to-face interviews and telephone interviews. I have transcribed those video or audio-recorded interviews. Additionally, I have transcribed video recordings and coded the data according. On some of these research projects, I was an active participant in the study and on others I functioned solely as a researcher or research assistant. On all of these projects I was involved with analysis and interpretation. Because of these experiences, I have taken the cautions of the authors previously mentioned seriously. I have observed some misinterpretations that researchers can make if one is too quick to assign meaning. Having many research experiences both as a student and a university employee has given me confidence to use video recording as a means of data collection; however, the classroom reality of video recording without a research assistant proved to be intrusive to instruction and distracting for the participants; therefore audio recordings were used instead.

Phase Three: Generating Categories and Themes

Once the researcher has been immersed in the data, generating categories, and themes is the next step in the analytic process. Creswell (2014) states that immersion is especially important in case study research because of the necessity to analyze data for themes and for detailed descriptions to use when reporting the study findings. During this "taking apart" of the data, Yin (2014 p. 135) instructs researchers to tentatively identify patterns, concepts, and emerging ideas. Giving data labels or tags is how Coffey and Atkinson (1996) describe the identification of possibilities during this phase of data analysis.

Also in this phase the reductive nature of data analysis begins. Creswell (2014, p. 194-195) uses the term "winnow" to describe aggregating data into themes. Marshall and Rossman (2011) suggest thinking about the data in relationship to the theoretical framework portion of the research proposal because there are likely themes that will emerge from the literature review. Merriam (2002) clarifies that this is an inductive process and is dependent upon the philosophical stance of the researcher.

For this study, I originally conceived beginning with the research questions and major concepts in the theoretical framework and literature review to identify broad themes using labels (Coffee & Atkinson, 1996) while remaining attune for unexpected themes and concepts that may emerge. In reality, I had to go back and forth between Phase Four Coding and Phase Three Generating Categories and Themes. First I began analyzing the data collected from documents for Bryan. Next, I transcribed a large number of transcripts after realizing that the documents confirmed that Bryan had learned, but did not demonstrate how he had learned which was the actual research question. This led to Phase Four Coding.

Phase Four: Coding

While coding sounds like a simple process, several researchers have indicated that it is

much more complex than the common usage of the word implies. Coding involves sorting and classifying (Stake, 2010), as well as generating concepts (Coffey & Atkinson, 1996). Merriam (2002) indicates that codes begin with a small unit of language such as a word or a phrase, and becomes a code as comparisons across data validate there is meaning related to the research question. Some ways to code are to (a) write on physical documents, (b) color code transcripts and documents, (c) write word or phrases on index cards, and (d) use computer software (Coffey & Atkinson, 1996). When the researcher codes the data, she must code all of it (Stake, 2010). Coffey and Atkinson warn not to be too predetermined with codes so as to miss phenomena that are emerging (1996). Although Coffey and Atkinson (1996) also warn that coding is not yet analysis, rather it is just labeling what the data is saying, other researchers view all of analysis as a back and forth process. Creswell (2014) and Merriam (2002) explain an iterative process with data collection and data analysis as concurrent activities throughout the study allowing refinements to be made.

Data from observations, documents including records of oral reading, student materials, research notes, and interviews were analyzed by tagging, and then by coding. Describing codes was an iterative process. I asked advice from a peer reviewer and my faculty adviser. Sending my codebook and transcripts. Both of them gave critical feedback to clarify confusions. After refining codes through numerous iterations, five categories related to the participants' behaviors and one category related to teacher-researcher support behaviors were identified.

- Participants' actions during direct instruction lessons.
- Participants accurately decoding.
- Participants inaccurately decoding.
- Participants' off-task behavior during lessons.

- Participant and classroom teacher perspectives from interviews.
- Teacher-researcher support of striving readers during lessons or records of oral reading.

Phase Five: Researcher Analytic Memos

While teacher-researcher reflections in the form of memos were part of the data collection process, those are distinct from memos I wrote for the purpose of bringing clarity to my thoughts about possible findings. Coffey and Atkinson (1996) advocate during analytic memos to think about, identify, and formulate ideas. Yin (2014, p. 135) also advises using analytic memos as a bridge to interpretation by writing about ideas that surface in the coding phase moving toward what he calls "a general analytic strategy." Yin (2014) further recommends that this strategy cycle back to the research questions repeatedly. Marshall and Rossman (2011) explain that through memo writing, the researcher uses language to surface new questions, identify gaps in understanding, link one part of code to another, and make connections to the theoretical framework and the literature review. I wrote memos throughout the seven phases of analysis so that I could track where ideas came from and where data was confusing. Researcher analytic memos became more informal than I anticipated when planning the study. Some notes were captured in the middle of transcripts in all capital letters both in the form of questions to be answered or possible codes. I kept some handwritten notes to keep track of my actual research process to be sure I was following these phases throughout data analysis. Keeping electronic revisions has been another way of keeping researcher analytic memos of refined thinking.

Phase Six: Alternative Understandings

The researcher is obligated to examine and disclose her understandings and biases in the research design in order to address alternative understandings. Doing so is part of a high quality

qualitative study the interpretation rendered by the researcher. Part of this process is continually going between the data and the literature review using the analytic memos to verify findings (Marshall & Rossman, 2011). Additionally, the ethical researcher looks with a critical lens for negative instances or contradictory evidence for the phenomena (Marshall & Rossman, 2011). Stake (2010) explains that data should be viewed as supporting or negating the research question as described through the philosophical underpinnings of the study. Coffey and Atkinson (1996) also stress the importance of analyzing for negative findings and including them in the final report.

Phase Seven: Report Writing

The purpose of educational research is to report study findings published as a dissertation, a journal article, reports to agencies, or books. Marshall and Rossman (2011) state that analysis and interpretation is an integral part of writing the final synthesis. One of the main characteristics of qualitative research is the report is rich in descriptions, word pictures, and quotes from the participants (Creswell, 2014; Marshall & Rossman, 2011; Merriam, 2002; Stake, 2006). Through analysis and interpretation, "the researcher brings meaning and insight to the words and acts of the participants in the study" (Marshall & Rossman, 2011, p. 210). The written findings should represent both the evidence that supports the research questions and the data that could refute the questions (Coffey & Atkins, 1996; Marshall & Rossman, 2011; Stake, 2010).

Cross-case Analysis

In addition to these steps recommended by Marshall and Rossman (2011), for a multiple case study is critical to study each case independently as if it were the only case (Stake, 2006;

Yin 2014) before analyzing the multiple cases to understand in aggregate the phenomena and the binding concepts (Stake, 2006) called cross-case analysis.

Trustworthiness

In order to conduct a strong qualitative research study, trustworthiness must be addressed. Various terms are used by qualitative researchers to describe the idea that the research is done with sufficient rigor to be considered ethical and sound. Some of the words used to describe this idea are trustworthiness, credibility, validity, or authenticity (Creswell, 2014; Merriam, 2002). Various other qualitative authors list these strategies for ensuring high quality is built into the research design. Creswell (2014) lists these seven strategies that researchers may use in various combinations to establish trustworthiness (a) triangulation, (b) member checking, (c) rich, thick description, (d) clarifying researcher bias, (e) reporting negative instances, (f) prolonged engagement, (g) peer reviewers, and (h) auditors.

For this study the trustworthiness strategies that are most useful include (a) triangulation, (b) rich description, (c) prolonged engagement and (e) peer debriefings.

Triangulation

Triangulation means that multiple instances of the same findings in the data are used to verify the research findings (Creswell, 2014; Maxwell, 2005; Merriam, 2002; Stake, 2010). It also means that other knowledgeable professionals would agree with what you are finding when analyzing the same data (Stake, 2010). Stake (2006) advises that each major finding should have three or more instances of verification as evidence. Stake (2006) further explains that data should be collected until only redundancies in themes and codes are found. Creswell (2014) describes good triangulation as convergence among sources culminating in a theme. Maxwell (2005) states that finding the same data from multiple sources establishes greater trustworthiness.

For this study triangulation was a major strategy for establishing trustworthiness. Since data were collected through observations, participant interviews, and documents, finding multiple instances of phenomena occurred.

Rich Description

One of unique characteristic to qualitative research is the ability to report the findings through words called rich description. The phrase rich description has been used by qualitative authors to describe detailed accounts of the findings so that the reader can see, hear, feel the activity of participants in their contexts (Creswell, 2014; Maxwell, 2005; Merriam, 2002; Stake, 2006). Stake (2006) stresses that the reader has a vicarious experience when reading rich description.

The research question for this study was written broadly so that rich description could be used to describe each case and the multiple case findings. Because reading is complex cognitive process and reading intervention is also complex, using rich description of the participants' learning contributed to the trustworthiness of this study.

Prolonged Engagement

Prolonged engagement is another way to develop trustworthiness in qualitative research. Prolonged engagement is simply spending a long period of time in the research setting with the participants (Creswell, 2014; Maxwell, 2005). Merriam (2002) writes about the purpose of qualitative research to understand the phenomena and context. In order to avoid misinterpretations, hasty judgments and other flawed interpretations, observing over a time allows the researcher to develop themes that are valid.

For this study, I was present with the participants daily as their reading intervention teacher. I observed and interacted with the participants, I had prolonged engagement needed to establish trustworthiness.

Peer Reviewers

Yet another way to establish credibility is use peer reviewers for the purpose of having knowledgeable colleagues who are not the study researcher(s) confirm or question coding, themes, and interpretations (Marshall & Rossman, 2011). Stake (2006) described the importance of this strategy in multiple case study naming this process critical friends. Creswell (2014) advises that one role of the peer reviewer is to ensure that the interpretations are clear to readers who are not researchers. Merriam (2002) indicates that dissertation committees serve this function for the doctoral candidate.

In addition to my dissertation committee, I recruited a peer reviewer knowledgeable in reading intervention and teaching striving readers to review the coding and analysis. The peer reviewer has a doctorate of education degree in curriculum and instruction. As the instructional coach at Kennedy Elementary, she also has an accurate understanding of tiered interventions within the school, years of interactions with the study participants, and the data that drove the intervention and data analysis of this study. I consulted my peer reviewer numerous times through participant selection, implementing intervention, and analyzing data especially during phases three and four. Having a peer reviewer knowledgeable in both research literature and the study setting was invaluable throughout data collection and analysis research processes.

CHAPTER 4 FINDINGS

This chapter presents findings for two of the four 4th grade striving readers during Tier 3 intervention. Specifically, I describe in depth how Alex and Bryan were learning how to read. The two other participants, Aryianna and Jordan, are included in lesson experts in these findings to accurately preserve class interactions.

Data collection and analysis were concurrent activities during this study. Stake (2010) explained that each time new data is collected there is an effect on the research questions. During analysis additional focus questions emerged:

- What supports the reading development of striving readers?
- What hinders the reading development of striving readers?
- What tools or strategies do striving reader need to help them read?

In order to answer the research question, "How do 4th grade striving readers demonstrate progress when participating in an intensive and explicit reading intervention?" the two cases are organized by (a) sharing insights from the initial interviews with each participant and the participant's classroom teachers; (b) discussing the need for grapheme-phoneme instruction; (c) practicing during instruction (d) participants' March interview (e) winter and spring instructional interactions; (f) presenting data from assessments with descriptions of oral reading accuracy and errors; (g) sharing insights from the final interviews with participants and their classroom teachers; and (h) case summary.

Alex

Interviews November 2016

Alex was interviewed on November 16, 2016, for five minutes using a modified Burke

The goals of the interview were to listen to Alex's ideas about a) good reading and self as a reader; b) knowledge of decoding strategies; c) reading goals and motivation; e) self-efficacy; and f) her learning preferences, Alex is a very soft-spoken student, and she often answered questions in one word or short phrase answers. Alex's responses below are direct quotes from the transcript of the audio recording for that interview.

Ideas about good reading and knowledge of self as a reader. Alex identified her classroom teacher Mr. James and her friend Tayah (pseudonym) as good readers.

LH: Who do know that is a good reader?

Alex: Mrs. James.

LH: What makes Mr. James a good reader?

Alex: He's a teacher.

LH: Do you know any kids who are good readers?

Alex: Tayah.

LH: What makes Tayah a good reader? What does she do that you think makes her good?

Alex: She practices her words.

LH: What's it like when she reads?

Alex: She doesn't get messed up.

LH: So pretend Tayah is reading and she comes to something she does not know, what do you think she's going to do about it?

Alex: Sounds it out.

LH: Are you a good reader?

Alex: Yeah.

LH: Okay, why are you a good reader?

Alex: Because I am smart. (Transcript 176 p. 1)

Alex perceived herself as intelligent and capable of learning to read well. These learner characteristics are how she defined a good reader.

Phonemes and strategy knowledge. Next, Alex described her ideas about decode words.

LH: When you are reading and you come to a word you don't remember or that you've never seen before, what do you do?

Alex: I sound it out.

LH: How do you do it?

Alex: Chunk it up.

LH: Do you ever do anything else?

Alex: No. (Transcript 176 p. 1-2)

Alex's responses caused me to wonder if she didn't know decoding strategies, or if she simply did not have words to describe strategies other than these phrases.

Goals and motivation. The school district administration required that classroom teachers set reading level goals with all students. I failed to ask Alex about her classroom reading level goal during the November interview; however, I asked about her motivation.

LH: Are there any kinds of books that you think are fun to read?

Alex: Cheerleader books.

LH: Anything else?

Alex: A book with a movie.

LH: Do you like books about girls, people, or animals?

Alex: Animals. (Transcript 176 p. 3)

In order to find out about Alex's motivation to read outside of school, I asked about reading at home. The school district administration and classroom teachers promote that all students read at least 20 minutes daily outside of school. At Kennedy Elementary, classroom teachers collect weekly reading logs for minutes read at home. The minutes are posted in a common area by class and grade level weekly.

LH: How often do you read at home?

Alex: Bad.

LH: Bad? What do you mean bad?

Alex: I can't figure the words out.

LH: You can't figure out the words, so you just don't read at home because it is too hard?"

Alex nodded her head back and forth in affirmation.

Although Alex wanted to read books about specific topics, she wasn't motivated to read outside of school because she cannot decode enough to read books that interest her.

Self-efficacy. Alex was candid about her lack of self-efficacy.

LH: When your teacher gives you something to read in class, how sure are you that you can read it? Are you pretty sure, not so sure?

Alex: Not so sure. (Transcript 176 p. 3)

LH: What kinds of books are easy for you to read?

Alex: I didn't know.

LH: What books are hard for you to read?

Alex: Chapter books.

LH: What would you like to do better as a reader?

Alex: Stay in school. (Transcript 176 p. 3)

LH: How sure are you that you will learn more about reading this year?

Alex: Staying in college.

After clarifying that I was asking about fourth grade, I rephrased the questions.

Alex: Yes, because I have two teachers helping me. (Transcript 176 p. 3)

Learning preferences. One goal of the interview was to learn how each participant learns best as described in his or her words.

LH: What do you want me to know about how you learn that would help me be a good reading teacher to you? How do you learn best?

Alex: When the teacher reads, and then we go over it. We read it again. (Transcript 176 p.2)

The information Alex told me during the initial interview was helpful as I planned instruction for her and the other participants. For example, I understood from her response above that she learned by listening to the teacher and possibly needed to hear instruction more than once. As I planned and delivered instruction, I kept this learner trait in mind.

Classroom Teacher Initial Interview

When I recruited Alex, Mr. James her classroom teacher very willingly agreed to become a study participant to give a classroom teacher perspective to Alex's reading development. I scheduled the initial interview with Mr. James at least four different times, but then he could not meet with me as planned. Mr. James gave schedule conflicts as the reason he could not be interviewed.

Need for Grapheme-Phoneme Instruction

Data collection began on November 7, 2016, when I administered assessments individually to participants. Data was collected for *Scantron Performance Series* and the Fountas and Pinnell *Benchmark Assessment System* 1, which were previously given in August of 2016. The first intervention lesson was given on November 8, 2017.

Fall 2016 Assessments

Four literacy assessments were administered to Alex to determine her need for participation in the intervention and to measure her progress. Table 3 presents three of the literacy assessments and Table 4 presents the fourth literacy assessment.

Table 3

Reading Assessment Scores for Alex

Assessment	Fall 2016	Winter 2017	Spring 2017
Scantron Performance Series for Reading	2nd percentile	1st percentile	1st percentile
Fountas and Pinnell *Benchmark Assessment System* (BAS)	Level F Instructional Proficient 2nd quarter of 1st grade	Level G Instructional Proficient 2nd quarter of 1st grade	Level I Instructional Proficient 3rd quarter of 1st grade
Test of One Word Reading Efficiency (*TOWRE*)	Raw score = 6 The *TOWRE* does not report a Standard Score or a percentile rank for a 4th grade student with a raw score this low		Raw score = 13 Standard Score = 57 < 1st percentile

***Scantron Performance Series* assessment.** On the *Scantron Performance Series* assessment, one of the two official district literacy measures, Alex's percentile rank, which compared her to fourth grade students in the United States, placed her lower than 98 percent of the 4th grade students who took that same assessment. Since the test adjusts for difficulty giving easier questions if a student answers incorrectly, scoring in the second percentile punctuates Alex's need for intensive reading intervention.

TOWRE. The Phonemic Decoding Efficiency portion of the *TOWRE* (1999) was administered in November 2016. Alex had a raw score of 6 in November. No standard score or percentile rank is provided by the administration manual for a 4th grade student receiving a score this low. While the *TOWRE* is a brief test of phonemic knowledge, Alex's performance confirms she needs instruction in phonics in order to decode accurately.

Fountas and Pinnell *Benchmark Assessment System 1(BAS1).* According to the Fountas & Pinnell (2008) *Benchmark Assessment System 1*, the second official district literacy measure, Alex's instructional reading level was F at the beginning of fourth grade. Typically, students are expected to enter fourth grade reading at level P and are assessed using the *Benchmark Assessment System 2*. Alex's classroom teacher, Mr. James, used the *Benchmark Assessment System 1* to assess Alex, because *Benchmark Assessment System 2* contains level L through level Z.

According to the Fountas and Pinnell (2015) "Instructional Level Expectations for Reading" chart, level F meets expectations for grade level during the second quarter of first grade.

Table 4

Quick Phonics Assessment (QPA) for Alex

Task Number and Description	Number of correct/ total items	
	Fall 2016	Spring 2017
1b Initial Letter Sounds	22/26	24/26
2a Decoding Nonsense Words in Isolation with VC & CVC Patterns	7/10	6/10
2b Decoding Words in Context with VC & CVC Patterns	17/20	19/20
3a Decoding Nonsense Words in Isolation with Consonant Digraphs	6/10	5/10
3b Decoding Words in Context with Consonant Digraphs	7/11	8/11
4a Decoding Nonsense Words in Isolation with CVCC & CCVC Patterns	Not given	7/10
4b Decoding Words in Context with CVCC & CCVC Patterns	6/10	8/10
5a Decoding Nonsense Words in Isolation with Silent e CVCe Patterns	0/10	2/10
5b Decoding Words in Context with Silent e CVCe Patterns	2/10	6/10
6a Decoding Nonsense Words in Isolation with R-Controlled Vowels	2/10	5/10
6b Decoding Words in Isolation with R-Controlled Vowels	6/10	7/10
7a Decoding Nonsense Words in Isolation with Advanced Consonants	2/10	3/10
7b Decoding Words in Context with Advanced Consonants	2/10	3/10
8 Decoding Nonsense and Regular Vowel Team Words	Not given	9/30
9a Decoding Multisyllable Words – 2 Syllables	Not given	2/10
9b Decoding Multisyllable Words – 3 Syllables	Not given	Not given
9c Decoding Multisyllable Words – 4 Syllables	Not given	Not given
10 Decoding Words with Prefixes and Suffixes	Not given	Not given

Quick phonics assessment (QPA). The *QPA* was administered to learn Alex's specific strengths and weaknesses in decoding. The results showed that prior to the intervention, Alex was still unable to identify four letter sounds with the printed symbols. Alex said /j/ for the letter *g*, /y/ for the letter u, /w/ for the letter *y*, and /p/ for the letter *q*. Alex decoded short vowel pattern words (e.g., CVC, CCVC, CVCC) with some accuracy for both nonsense words in isolation and in context of sentences. Alex scored poorly on both decoding tasks for the long vowel words with the pattern CVCe. The *QPA* manual instructs administrators to discontinue the assessment tasks when successive task scores are very low. The phonics skills assessed by *QPA* Tasks one through eight are first grade curriculum at Kennedy Elementary.

Interpretation of Fall 2016 Assessments

While the *Scantron Performance Assessment* and the *TOWRE* scores verified that Alex had a need for intensive reading instruction, those percentile scores did not give enough specifics for instructional planning. The Fountas and Pinnell *Benchmark Assessment System 1 (BAS1)* and the *QPA* scores provided starting points for instructional planning. A reasonable conclusion was that Alex was still reading mainly in the partial alphabetic phase of reading development because she has incomplete letter sounds knowledge, and she could use some grapheme-phoneme relationships to read words, but that knowledge was incomplete especially for vowels (Ehri & McCormick, 2013).

Further evidence that Alex needed explicit instruction about which phonemes to say for various letter combinations is found in a) beginning lesson interactions, b) fall records of oral reading, and c) Alex's answers during her November interview.

Grapheme-phoneme errors during beginning lesson interactions. Alex had difficulty connecting example words with a specific phoneme being discussed during some the beginning intervention lessons. During the lesson on November 16, 2016, the task was to recall what participants had learned about the letter *g* before looking back at their notes from previous lessons. Alex offered that the *g* in frog was an example of silent *g*. This problem may have been a matter of getting used to the lesson routines I followed during instruction because during later lessons, Alex was able to better match examples with the phoneme being discussed.

Bryan: It can be gn.

LH: Gn what, what sound?

Bryan: I don't think it really has a sound.

LH: Ah! If g is before n, it is silent. It doesn't have a sound. Good! Alex, what did you find out about the letter g? (wait time 15 seconds) What did you find out about the letter g? I'll come back to you if you need me to.

Jordan: Can I go back and look?

LH: No, I want you to tell me first what you can remember. Then we'll look.

Aryianna: I know.

LH: Aryianna, what did you find out?

Aryianna: Sometimes at the end it's silent.

LH: With what letter?

Aryianna: G and h.

LH: G and h. Okay. Think of the other sounds. What are the other sounds for g?

Bryan: J.

LH: It has the j sound.

Jordan: Og, like an o and a g.

LH: What about them?

Alex: They are silent like in frog.

LH: In fro /g/ [emphasized g sound]. Is it silent?

Alex: Frog.

LH: Now open your book and find something that you learned that was news to you.

(Transcript 172 p. 1,2)

Later in that same lesson we reviewed words from left to right across the columns of the chart "Sounds for the Letter G g", we were discussing that a silent *g* precedes the letter *n* (e.g., *gnaw, gnome)*. Alex decoded the word "gnome" as "now." She was able to recognize the "g" was silent but still misread the word by substituting the vowel and end sounds to pronounce "now".

Another instance of Alex having difficulty with phonemes was when we were discussing that in a few words the letters "ch" are pronounced /sh/ sound such as *Cheyenne, machine* and *charade*.

Alex: "What about she?"

LH: Well *she* is spelled with "sh".

I restated that we were talking about words that were spelled "*ch*" but had the /sh/ sound, so that if she said /ch/ sound. I advised the students when reading if they pronounced the word with /ch/ and the word was unrecognizable, to try the /sh/ sound instead to see if that phoneme produced a recognizable word. (Transcript 182 p. 7, November 29, 2016)

Grapheme-phoneme errors during fall records of oral reading. Early running records show an error pattern that Alex omits words she does not recognize or substitutes based mainly on beginning letter sounds in words. On September 1, 2016, Mr. James administered the *BAS1* nonfiction passage Level F. Alex omitted the name "Mother" twelve times; however, proper names are only counted as errors one time according to the *BAS1* administration manual. Since Mother was a name, the error counted once, but without reading that word, the passage likely made little sense. Other omitted words were *why, keep, does, feeds*, and *chirp*. Alex made substitution errors including reading "what" for "why," "went" for "want," "when" for "why," and "fleas" for "fly."

On November 16, 2016 Alex read a level E book. Alex substituted 14 words, but made no omissions on this nonfiction passage. Substitutions included "roots" for "Ron's," "what" for "with", "for" instead of "fur", as well as "and" for "any." Alex also tried both "her" and "hair" for "heart," "tip" for "thump," "hurt" for "heart," "store" for "strong," "starts" for "sits," "vet" for "very," and "still" for "stop." Alex made three self-corrections changing "at" to "in," "the" to "they," and "the" to "that." Again these one- syllable word errors underscore Alex's need for intensive, explicit instruction in decoding, and self-monitoring for comprehension.

Considering Alex's answers to the self-efficacy questions, and the fall assessments, Alex understood that because the act of reading grade level text in the classroom was too difficult, she learns best when the text is read aloud followed by discussion about the text, and then rereading. This level of support makes sense for Alex because at the beginning of the intervention, in November 2016, she was reading three grade levels behind her peers who were reading at grade level; therefore she may learn

content in the classroom through listening, yet Alex is hopeful that she will learn more during the school year, "because I have two teachers helping me" (Transcript 176 p. 3).

The findings of fall assessments, beginning intervention lessons, and Alex November interview, verify that Alex needed to be taught explicitly and intensively various letter combinations and the corresponding phonemes in order to accurately decode words. While the finding itself was expected given that cases were chosen as a sample of convenience, intensity, and criterion, what was unexpected was the severity and urgency of Alex 's need for instructional support for decoding.

Practicing during Instruction

In order for these fourth grade striving readers to learn that various letter combinations have unique sounds in English they need to see those letter combinations comparatively, and then practice saying the different phonemes in isolation, in words, and finally in reading passages. In order for Alex to learn more about decoding, she needed to participate in all the practice activities including note taking combined with saying phonemes aloud, decoding aloud, giving example words, discussing word meanings, practicing grapheme-phoneme relationships within words in isolation from text, and using new grapheme-phoneme knowledge and new strategies while reading passages.

Because I encouraged the striving readers to talk about their learning, I did not require students to raise hands the during intervention class, unless they were all trying to talk at the same time, which was chaotic. When that happened I asked students to raise their hands, or I used the Kagan (2009) Round Robin structure. Each student took a turn moving clockwise around the table. Each student knew when his or her turn would be. That would ensure equal participation. At times if a student had not offered any answers for some time, then I called on

him or her. Early in the intervention, Alex was very reluctant to give answers when I called on her.

Each time a new letter or syllable type was explored, the first day participants made hand written notes in their wordbooks. After hand written notes were complete, I provided a chart with that same information presented in columns for side-by-side comparisons, and with pictures to remind participants of sounds for each phoneme on the chart (Appendix I). The purpose was for students to rehearse the letter sounds many times building from simple isolation to complex in text contexts. The chart provided a reference tool that was easy to use. During the November 16th lesson, we reviewed all the letter sounds for the letter *g*. I asked students what they had learned. Alex did not volunteer, so I asked her directly.

LH: Alex, what did you find out about the letter g? (I waited time 15 seconds). What did you find out about the letter g? I'll come back to you if you need me to do that. (Transcript 172 p. 1)

Two minutes later, I again asked Alex for an example word.

LH: Alex did you find anything? No! (Transcript 172 p. 2)

At almost ten minutes into the lesson, Alex does say the current target phoneme during a round robin.

LH: Okay, look at your chart where the bridge is.

Bryan: /j/ /j/ /j/.

I directed other student's attention by repeating the instructions.

LH: Look at your chart where the bridge is. What sound are you going to say Bryan?

Bryan: /j/

LH: /j/ What sound?

Alex: /j/

LH: What sound?

Aryianna: /j/

LH: You are not going to say /d/ /g/ because it won't make any sense. (Transcript 172 p. 7)

Word finds were used to help participants locate example words with the target letter or syllable type found in books. Each participant recorded any words found in their wordbook. On November 17, 2016, the second part of the word finding activity was underway. The prompt I gave was to say a word that had the /g/ sound at the beginning, middle or end. Alex contributed *frog, sleeping*, and *wagon* (Transcript 177 p. 2). *Sleeping* did not fit the target phoneme, but participants recorded Alex's correct examples. Later in that lesson, I directly asked Alex for a more complicated grapheme-phoneme combination.

LH: Alex, did you find a word that has *g-h* somewhere in the middle or the end?

Alex: Light?

Although uncertain, Alex was correct. I could also see that Alex had the word thought in her wordbook. I wanted the class to discuss this word.

LH: Here, right here. Can you spell it for us? Alex, tell us what to write.

Alex: S.

LH: No, T. This one right here. T.

Alex: H

LH: Then what? Alex, just spell it for us, then I will let you write it. T-h

Alex: O-u-g-h-t.

I repeated each letter and wrote it on the white board as Alex spelled. I explained this is a difficult word because it only has three phonemes. *Thought* is a 1st grade sight word that was part of the curriculum at the time these students were in 1st grade. All the participants would have

had many, many exposures to this word previously, yet they didn't seem to know how to pronounce until I segmented and blended each phoneme.

On November 29, I introduced phonemes for the letter *C*. Alex processed aloud the fact that a word may have more letters than sounds. I was teaching the spelling –tch for /ch/ with various words. The word *sketch* was being discussed.

LH: So how many sounds? /s/ /k/ /e/ /ch/? Three sounds, six letters.

Jordan: Yup! /sk/ /e/ /ch/

Alex: One two three four five six. (Transcript 182, p. 3)

Alex decoded "charisma" with me during that same lesson while discussing the grapheme *ch* with the phoneme /k/. After Alex and I segmented the sounds in "charisma" and blended them together, I asked the class what the word meant and students named President and Michelle Obama as people with charisma. I asked students to elaborate and Alex spontaneously offered, "She is kind." (Transcript 182, p. 9-10)

On November 15, 2016 when I was teaching that *-gn* in the middle or end of words is silent, we were looking at the grapheme-phoneme relationships in the word "sign." When I asked what it meant, Alex offered, "Like I had to sign something." She was referring to the assent document that I read to participants, and then asked them to write their first name if they agreed to let me learn about how they learn to read better. (Transcript 171, p. 5)

On November 18, 2016 participants practiced their new knowledge of letter *g* grapheme-phoneme relationships while reading *The Lion and the Mouse* level J (Fountas & Pinnell, 2009). Alex had told me during her interview that she read best "when the teacher reads and then we go over it. We read it again" (Transcript 176, p. 2, November 16, 2016). Customarily, I have reading groups choral read a new book, but not always depending on the learning purpose. To

support Alex's learning preference, we choral read the play together once before I assigned parts. After the choral reading, I assign roles for the play printed in the second half of that book. After each reading, roles were rotated assuring that each student reads each part aloud and all the other parts silently many times. This is one way I have found to increase striving reader engagement.

After the choral reading, Alex was able to read at the same speed and decode well enough to provide corrections to Jordan when she made errors.

Aryianna as the Narrator: One day a lion was taking a nap. Soon a little mouse came running by. The mouse did not see the lion, so he ran right over the lion's nose.

Alex as the Lion: You woke me up. I'm going to eat you.

Jordan as the Mouse: Dear Lion please do not eat me. Don't (self-correction) I didn't mean to – wait. (reread) Dear lion please do not eat me. I didn't

Alex: I did not.

Jordan: I did not mean to wake you up. Please, please let me go. If you do, maybe one day I will help you. (Transcript 178 p. 5 at 16:00)

Alex assisted Jordan again a few minutes later in the lesson.

Aryianna as the mouse: I will help you dear lion.

Jordan as the Lion: Do -Do not be silly little mouse. What can you – What can you do?

Alex: Do.

Jordan: No one can help me now.

Aryianna: I can help you. (Transcript 178 p. 9 at 22:00)

When Alex was reading her parts during that play, she engaged in self-correction. The choral read gave Alex the support to read and fix errors when she read the various roles. Alex also had the confidence to offer help to Jordan when she was having difficulty decoding. The

fact that Alex could decode this book along with her peers was surprising because her instructional reading level at that time was F according to records of oral reading.

Alex was very soft spoken, and offered fewer answers and examples than some of her more talkative peers, but after initial reticence consistently offering answers, examples, decoding in isolation and reading passages.

Alex Interview March 2017

The goal of the March interview was to learn if Alex was able to discuss her reading in ways different from the November interview responses. I interviewed Alex on March 9, 2017 for nine minutes using a modified Burke Interview protocol (Appendix G). I departed from the initial interview protocol to make this interview more conversational because of Alex's propensity for short answers. Alex's responses below are direct quotes from the interview.

Classroom reading. During this interview, I asked Alex about reading in her classroom because I did not want to inadvertently shape her responses by first asking questions about learning in intervention class. I was hoping she had transferred knowledge and strategies to classroom reading. I am not sure why I started with a negative question rather than a positive one.

LH: In Mr. James' class, what types of books are difficult for you?

Alex: We don't read that much.

LH: You don't read that much?

Alex: We do lots of math. (I waited 10 seconds). Oh, when he gives us a reading paper we have to read it.

LH: When you're in a group when you're with Mr. James when he teaches reading groups, what kind of things does he tell you to do?

Alex: Read the book.

LH: Does he do anything else? Does he ask questions?

Alex: No.

LH: No?

Alex: Well, yeah. We have to answer questions. We have to write the answers on our Chromebooks on our document.

T: I see. Are there some types of papers that he gives you that are easier than others?

Alex: Uhm. (affirmative)

T: What kinds are easier?

Alex: The reading ones. (Transcript 219 p. 1)

Ideas about good reading and knowledge of self as a reader. Next, I wanted to know if Alex thought she had learned more about decoding during intervention.

LH: Since you've been in my class this year, can you tell me anything that you've learned about good reading?

Alex: I know how to read the big books now.

LH: By big books, do you mean harder levels? Is that what you mean or fatter?

Alex: Fatter.

LH: Fatter. Oh! You can read harder books and fatter books. Longer books right?

Alex's answer helped me understand that to her good reading was the ability to read longer books. (Transcript 219 p. 1)

Self-efficacy. Alex's self-efficacy had not changed since November in relationship to confidence in the classroom. This was somewhat confusing because she had just told me she could read "fatter" books. Alex answered again that she was not so sure she could read anything her classroom teacher assigned.

LH: Right now, how sure are you that you can read just anything that your teacher gives you? Pretty sure? Not so sure?

Alex: Not so sure.

LH: Not so sure. Is it better than it was at the beginning of the year?

Alex: No.

LH: It's not? You haven't gotten any better at reading?

Alex: Oh yeah!

LH: Oh yeah! You didn't know what I was asking you. Is it feeling a lot less hard?

Alex: Better.

LH: A lot better. I see in you a huge improvement. (Transcript 219, p. 2)

Alex has told me that stories are easier for her, but chapter books are still hard. I should have delineated between classroom reading and intervention reading, so Alex could have spoken to both settings.

Goals and motivation. Alex did not have a reading goal set with Mr. James her classroom teacher; however, she articulated her own general reading goal.

LH: Do you have a goal with Mr. James for your reading? Did you set a goal with him for levels?

Alex: No.

T: No? So you don't know what your goal is?

Alex: No.

LH: What would you like to do better right now as a reader? What are your reading goals? What would you like to do better?

Alex: Read anything.

LH: Read anything. Oh, that's a good goal.

Alex gave two different types of responses to my questions about motivation. She said she would chose to do something else other than read, but she named books she wanted to read or had read. In another point in the interview, she said she reads to her little sister. (Transcript 219 p. 3)

LH: So when you have free time, do you choose to read? Or would you choose to do something else?

Alex: Do something else.

LH: Do something else? If you were going to read in your free time, what kind of book would you read? What kind of books do you like?

Alex: A mermaid book.

LH: A mermaid book. Ummm. Any other thing?

Alex: A middle school book.

LH: A middle school book. What would be in a middle school book?

Alex: It's where he goes to a school, and then he gets umbarrassed.

LH: He gets embarrassed?

Alex: Because his pants fell off.

LH: Oh no! That would be pretty – so a humorous book? You know I've had nightmares like that. But it never happened to me for real. (Transcript 219 p. 3)

LH: Tell me about the longest thing you have ever read. How long is the longest thing you have ever read?

Alex: The middle school book.

T: Oh you read a middle school – You already read that book?

Alex: Yeah!

T: What was the name of it?

Alex: I think Middle School.

T: Middle School?

Alex: Or high school probably.

T: Was that a book you got out of the library or something Mr. James had?

Alex: Mr. James.

T: Mr. James had you read it?

Alex: No. I picked it out.

T: From the class library?

Alex: Yeah!

T: So you want to read more books like that?

Alex: Yeah. (Transcript 219 p. 4)

Application of new phonemes and strategies. When I planned the interview questions, I worded this question so that it was open-ended. Alex was able to explain more about her reading than in the November interview.

LH: When you come to something you don't know, a word you don't know, what do you do now?

Alex: I stop and I chunk it up and I try to read it.

LH: Okay. Is there anything else that you do if that doesn't work?

Alex: I go back. I read. I just read the sentence, and I see if it makes sense, and then if it doesn't, I reread it. And then I try again.

LH: That is what we have all been talking about in here isn't it? So is there anything that you have learned about letters? The sounds of letters since we've started class?

Alex: Yeah!

LH: What have you learned?

Alex: ch, g, gh

LH: What did you learn about g?

Alex: To say all kinds of the g words. (Transcript 219 p. 2)

Learning preference. I again asked Alex to explain what she knew about her learning needs.

LH: What do you want me to know about you as a learner that will help me teach you better? How do you learn in reading? What can you tell me?

Alex: Read to myself.

LH: You need to read to yourself? What happens when you read to yourself?

Alex: At home, I will read to my little sister.

LH: But at school when you read to yourself, why is that best for you? Reading silently or reading aloud to yourself, which is better?

Alex: Reading silently.

LH: Reading silently. Then do you understand what you are reading?

Alex: (must have nodded.)

LH: Sometimes I have to have you read to me so I can check up and see if you can do harder things. Right? Is that harder for you than reading silently?

Alex: Kind of.

LH: Okay. When I let you practice that book for two days before you read to me, was that better?

Alex: Yeah!

T: Okay. That helps me know a lot about you as a reader. (Transcript 219 p. 3-4)

Participant Relationships

Poor participant relationships hindered learning to some degree during intervention class. In November, Alex came to me outside of class time and told me that Jordan, another participant, was bullying her, so she didn't want to work with her. Alex said Jordan was making fun of her when she made mistakes during class.

Around that same time in November, Jordan had come to me privately to report that Alex had been bullying her. Jordan did not give any specifics. She just indicated that she did not want to work with Alex because of the bullying.

A third participant, Aryianna had confided to me on November 8, 2016 when I administered the *QPA*, that Jordan had been bullying her in the Ms. Lee's classroom. Aryianna reported that her mother had come to school and talked with both Ms. Lee and the principal in an effort to get the bullying stopped.

I discussed the bullying matters with Ms. Lee, Jordan's and Aryianna's classroom teacher. I also talked with Mr. James, Alex's classroom teacher. The problems between the girls seemed largely outside of my class time, but I took the girls' poor relationships seriously.

Respect is one of my personal core values. I teach and model respect, so learning of the bullying between study participants was quite troubling.

To improve participant relationships, I implemented teambuilding activities. The rationale for teambuilding is that when students and teacher have fun together, they are more likely to have positive working relationships (Kagan, 2009). A state that includes mental, physical, emotional, spiritual, and psychological readiness to learning referred to as "learn mode" is now considered the prime state for learning (Souers & Hall, 2016, p. 27). Teambuilding is one way to bring students to the relaxed alert state of mind. According to my intervention lesson plans, we had teambuilding activities in lieu of academic lessons on November 9, 2016, January 4 and 30, February 9, March 27, and April 3 of 2017. There were less formal team building times when students shared personal things during class and one day even had a spontaneous group hug. There were incidences of light-hearted laughter.

While I did not observe Jordan laughing at Alex, Jordan was impatient with Alex during two lessons. Conflict surfaced during class on November 21, 2016. The assignment was to take turns using the Rally Robin structure (Kagan, 2009). The structure requires pairs of students to simply take turns back and forth until the teacher stops the activity. I gave Alex and Jordan an iPad open to the *Phonics Genius* app. I assigned each pair a different grapheme-phoneme relationship to practice so that students would not echo read words. Early in the activity, I heard Alex complain. Jordan's voice sounded irritated.

Alex: I said it.

LH: Okay then.

Jordan: I didn't hear you.

LH: Say it loud enough for…

Alex: (Alex spoke too quietly to be recorded.)

LH: Grave. Okay, then click it so it's her turn.

Jordan: / br/ / i/ /j/ (segmented)

LH: Yes, *bridge*. Do the next one.

About 12 minutes later, I heard Jordan using an impatient tone of voice with Alex.

Jordan: You are going to have to say the words instead of just tapping it.

At that moment I understood that Alex was just tapping the touch screen, jut not saying the word loudly enough for Jordan to confirm the correct decoding. I decided to have Jordan read every word and for Alex to repeat the word. I wanted to make sure that Alex was practicing accurately rather than trying to avoid making a mistake with Jordan next to her. After that I did hear Alex repeating words. Jordan was not very cooperative with this plan, so I had to repeat those instructions again later in that same lesson. Having time to reflect during transcription and coding, it now seems to me that Jordan wanted Alex to be accountable for the work in the same way she was; however, I was differentiating knowing that Jordan had better decoding skills then Alex did at that time. I had assigned them as partners because I knew Jordan was capable of more accurate decoding.

On November 29, 2016, I tried partner work again. Bryan often annoyed Jordan, but the nonparticipant student worked very will with him, so I usually paired them during partner work. I did not pair Aryianna and Alex because they were unlikely to catch each other's errors. Jordan was a stronger decoder, so I decided to try pairing her with Alex again.

LH: Jordan would you sit next to Alex, so that you could do this together?

Jordan: I want to do it by myself.

LH: Please slide over by Alex.

Jordan: She is just going to cry about it. (Transcript 182 p. 11)

Alex has never cried in my class. In fact I have rarely seen her express emotion of any type. Within one minute the negative interactions grew worse.

Jordan: It's your turn to say a word. Alex, turn around and pay attention. (Jordan used a very impatient tone of voice.)

Alex: I did.

Jordan: What does it say? (Jordan again used a very impatient tone.) What is the word Alex? I said mine and I told you to say yours.

LH: Alex?

Bryan: Jordan called Alex stupid.

LH: What?

Bryan: Jordan called Alex stupid.

LH: Oh no, that is not happening in here.

Jordan: I didn't call her stupid, so worry about yourself.

Bryan: Actually I was.

Jordan: You should be reading words, not worrying about me.

Bryan: I can't.

LH: Alex, let's just stop.

Bryan: This is fun for me and my partner. Can we just do it? What were we doing?

LH: We are going to write about how you want to be treated when you don't know something in this class. So write, Dear Mrs. Holmgren, this is how I want you to treat me, and this is how I want the kids in my class to treat me. (Transcript 182 p. 12)

I used these letters during the next class to reestablish a culture of respect. After the lesson where we directly discussed respect and how to treat each participant with dignity and respect, these types of problems did not recur until February 2017.

During the lesson on February 15, 2017, Jordan was reading aloud to me. She was trying to decode, and struggling. I was prompting her.

Jordan: Bend in the road, they saw a grent (miscue for giant) wall of fames, flames, of flames.

LH: A what? A? Remember that word? What do we do with that g?

Jordan: Grent?

LH: Does grent make sense? So try another sound.

Jordan: Grint?

LH: What other sound can you say for g besides /g/?

Jordan: /j/?

LH: /j/

Jordan: Jent?

LH: What would make sense? If you were going to describe this wall

Jordan: She's laughing at me.

LH: What?

Jordan: She's laughing at me.

LH: You know Alex that is really rude. We don't laugh at you when are having trouble.

LH: Okay. Can you say this sound? /g/ /I long sound/.

LH & J: /gi/ ant

Jordan: Giant?

LH: Oh would that make sense? A giant? Okay.

Jordan: A giant wall of flames. Fire blocked the road.

Because of the negative interactions between Alex and Jordan, I inquired if the team building activities had made a difference for Alex.

LH: So tell me about your relationships with people in the class. Since we have been doing some team builders, is that getting better?

Alex: No.

LH: No? Is that because of in-class or outside of this class?

Alex: In class.

LH: What's bad about in this class?

Alex: Jordan.

LH: What about her?

Alex: Like when somebody messes up on a word, she laughs.

LH: Okay. I will keep working on that for us. Okay, because it really has to be okay to make mistakes because otherwise what?

Alex: We won't get better.

LH: We won't get better. Because if we keep the mistake a secret, and we don't work out the problems, and feel relaxed about it, then our brain will always kind of freeze up and make that same mistake. And what I see happening to you is, you're making – you're fixed a lot of those things already. So that's pretty exciting. (Transcript 219 p. 5)

From Alex's perception of Jordan laughing at her mistakes, I realized that striving readers are especially sensitive to nonverbal communication or may feel laughed at based on previous poor interactions and possibly just feel badly about poor decoding. Because of the conflicts between the three girls in my class, and the negative interactions, I changed my approach to more

whole group practice rather than partner practice as I had intended at the inception of the research study. I changed class activities to increase the emotional safety. Students must feel respected by peers in order to process and retain learning (Kagan, 2009); therefore, striving readers cannot learn unless there is a high degree of emotional safety (Souers & Hall, 2016). Striving must feel free to take risks, to make errors, and get feedback from the reading teacher to improve decoding.

Winter and Spring Instructional Interactions

Based on cognitive flexibility theory, to learn how to read, readers need to develop knowledge of grapheme-phonemes and how and when to flexibly use them. Each striving reader needed to develop greater cognitive flexibility in order to implement decoding strategies. To accomplish is, I modeled for participants how to be flexible when reading. Then I had them practice decoding by trying a sound, and if they read a word that was not recognizable or meaningful, then I asked them to try a different sound. For example, to decode *germs*, try the hard sound for *g*. When that does not produce a recognizable word, then try the soft sound of *g* /j/. A common error striving readers make is decoding the word "staring" incorrectly as "starting by adding the letter *t* and changing the vowel sound." I understand the problem is removing the final silent e before adding –ing (e.g., star = starring vs. stare = staring); however, striving readers have difficulty seeing that during reading. Another way is to teach two alternate phonemes to try for "ar." If /ar/ as in *car* does not produce a recognizable word, try /air/ as in *care*. I began teaching this strategy as early as November 21, 29 and 30, 2016.

On November 21, 2016 when students were practicing words with specific phonemes, I heard Alex struggling to decode.

LH: Chunk. So you are going to say /gr/ right?

Alex: /gr/ /a/ (long a sound)

LH: Two vowels.

Alex: /a/ (short a)

LH: Two vowels we say a like *ape*.

Alex: Grapes.

LH: Grapes

LH: Okay, Alex look at the iPad. Try this one.

Alex: /gr/

LH: Because it has an "a," so I'm not going to say /j/. No, say /g/.

Alex: /g/ /a/ (short a)

LH: "ga"

LH: And then when it's with an e, you are going to say the other /j / the /j/.

Alex and students together: Ga-dget.

LH: Gadget. What is a gadget?

Aryianna: Like a screwdriver.

LH: Yes, a gadget is a tool.

By the April 7, 2017 lesson, we were looking at examples of two syllable words when the first syllable is open, which means the first letter or letters are consonants and the second letter is a long vowel such as ta-ble, or la-bor as opposed to cab-in. Alex was better able to switch phonemes quickly.

LH: Okay, so what I was trying to tell you was, they are all nonsense words until you figure them out. Right? Let's see if you can figure out this one. So, Alex you've been really quiet today. So if we're going to say the long sound we're going to say what?

Aryianna: Re

Jordan: Re

LH: It's her turn.

Alex: Re (long e) /s/ /s/

LH: Re – this has the z sound. Re-zi (short i)

Alex: Resist /d/

LH: Resist. Resist. What does it mean to resist? Bryan.

Bryan: Like if I'm resisting an officer. I keep like trying to push him off.

LH: That's one way to use the word. If I resist chocolate because I'm trying to lose more weight?

Bryan: I say no.

LH: I say no to it.

Jordan: That's what I thought it meant, but I don't really know

This example also shows how I incidentally taught vocabulary in the midst of decoding instruction.

In addition to teaching specific grapheme-phoneme and the strategy to try two different, I explicitly taught my participants five basic decoding strategies. In order to motivate fourth grade striving readers who had likely heard these words many times, I created a power point presentation titled, "Reading Is Like Driving." Each slide had a dramatic photograph of a potentially dangerous situation for the driver of a car or bicycle. Each slide also had a question for the caption such as "What should this driver do next?" The pictures and questions elicited the answers "slow down, stop, look both ways, chunk one step at a time, back up – try again."

The class made an anchor chart so that the participants could read like drivers. The participants and I began using this terminology and the driving analogy to talk about decoding.

On February 15, 2017 Alex was preparing to read to me. Before reading, I rehearsed with her what she could do to decode words.

LH: Now remember. Okay, so what are the things that we have been talking about that you learned?

Alex: Slowing Down.

LH: Slowing Down. And you know there are different sounds of g. Different sounds for c. Look both ways through the words.

Alex: One day a mother duck fell (self-correction feel her eggs (too quiet to hear) to (too quiet to hear). One by one the eggs cracked open (reread) cracked open. (Can't understand first word) Eggsly yellow.

LH: Wait a minute. I'm sorry. Where are you?

Alex: Yellow ducklings.

LH: Okay, what's this word?

Alex: Eight.

LH: Okay, yellow ducklings. (Transcript 208 p. 1)

A few pages later, Alex needed a reminder to use those strategies.

T: Wait a minute. Read this.

Alex: "You are an ugly duckling." Then he tried to (omitted a word). Will you play with me?" he asked. "No, no." said the horses. "You are too ugly." "No," said the pigs, and they larned art, at.

T: No, slow down. Look at that word.

Alex: Look

LH: What would…

Alex: Laughed.

LH: Yeah! Laughed.

Alex: Laughed at him. The sad ugly duckling went back to the farm pond.

Another way I taught participants to decode was to stop and write down the word, then referred them to the charts (Appendices A, I, J, and K) we had used when introducing new sounds or syllable types.

On March 7, 2017 the assignment was for each participant to select a page to read to me that he or she had already read silently the previous day. Alex was prepared with a short poem. While short, the words in the poem *The Lion* were not common for elementary students. After Alex read making several errors, I talked her through how to write down a word to decode.

LH: Okay. So are there some words in there that are kind of hard for you? Point to one that is hard.

Alex: This one.

LH: Right! So what I want you to do is then is open up your book, your wordbook. Open up to right here, and then you write down that word. Then you can look in your sound-symbol chart for the letters. So if there is one vowel, you are going to say what? What's the picture?

Alex: (big yawn) Elephant (pronounced during the big yawn).

LH: Can you say the first sound in elephant?

Alex: /e/

LH: /e/. So you will write down d-w-e-l-l-s. What are you going to say for those first ones?

Alex: /d/

Alex & T: /w/

Alex: ells

T: ells. Dwells. Do you know that word? I didn't think you would. It's an old-fashioned word it means to live. Dwells. So a dwelling, if you are reading an old time book. A book set in the olden times, it will say, she entered the dwelling. That means the house where people live. I want you to find some other words you don't know, figure them out, and then pronounce them for me. Okay. Would you do that? Just in that little poem. (Transcript 218 p. 3)

On April 10, 2017, the learning activity was to use highlighter tape to cover the first syllable of the word on one index card, and then cover the second syllable of that same word on a duplicate card with the highlighter tape. Alex passed during the first round robin to show how words were divided. After she watched the other students, she was confident and highlighted many words. By the end of the lesson, Alex had finished her stack of words and asked for more. During these lessons Alex demonstrated her learning by practicing correctly and demonstrating her understand throughout the winter and spring lesson activities.

Assessments and Records of Oral Reading Alex

Tables 5, 6 and 7 provide a detailed analysis of Alex's oral reading behaviors before the study began through the end of data collection. While records of oral reading account for important reading behaviors, these records do not capture the thinking behind those behaviors, yet these behaviors are a window into the cognitive processes a student used to read passages aloud.

For this intervention, I mainly used the Fountas and Pinnell LLI books from the green, blue, and red systems for most of the fiction and nonfiction reading. As discussed in Chapter 3, LLI books are leveled by a gradient system so that each successive level has slight, but

significant increases in levels of difficulty such as sentence length, sentence structure, vocabulary, and the length of the passages. When I used materials from other sources that were not leveled, the participants struggled more with decoding, which is logical since they are not carefully graduated for striving readers.

Table 5

Records of Oral Reading Analysis for Alex

	Passage Type	Total Errors	Correct Words	Words Read	Accuracy Percentage	Reading Level
Fall 2016	BAS1 Nonfiction Level F	11	154	165	93%	Instructional Level
	Dolch 220 Words	145	515	675	79%	Hard Level
	Nonfiction Level E	14	127	141	91%	Instructional Level
Winter 2017	Nonfiction Level G	7	207	200	97%	Independent Level
	Fiction Level H	13	341	355	96%	Independent Level
	Nonfiction Level I	4	82	86	95%	Independent Level
	Fiction Level J	12	279	291	96%	Independent Level
Spring ss34342017	Fiction Level M	11	134	145	92%	Hard Level
	Fiction Level L	25	241	266	91%	Hard Level
	Fiction Level L	48	322	370	87%	Hard Level
	BAS1 Nonfiction Level J	15	252	267	94%	Hard Level
	Dolch 220 Words	73	602	675	89%	Hard Level
	BAS 2 Fiction Level M	9	201	210	96%	Instructional Level

Alex began fourth grade reading at a beginning first grade level equivalent. The first passage that Alex read during the intervention was level E on November 16, 2016. The instructional level range is from 90% to 95% accuracy with good comprehension for level E according to Fountas and *Pinnell Leveled Literacy Intervention (LLI), Green System Lesson Guide* (Fountas & Pinnell, 2008).

As intervention progressed, Alex was able to read more advanced leveled passages. The level E nonfiction book Alex read at the instructional level on November 16, 2016 had 141 total words. The level H fiction book she read on January 20, 2017 at the independent level had 355 total words. While Alex still made errors, her ability to decode improved also resulting in the ability to sustain comprehension on a passage more than twice the length of that level E book.

Alex read a level J book at the independent level on February 15, 2017 with 291 total words, which is again twice the length of the E book in November.

Table 6

Accurate Decoding Alex

	Passage Type	Self-Correction	Correction with Prompt	Slow Down or Stop	Sound It Out	Reread	Words Read Automatically
Fall 2016	BAS2 Nonfiction Level F	2	0	0	0	0	152
	Fiction Dolch 220 Words	9	0	0	5	1	154
	Nonfiction Level E	3	0	0	0	0	124
Winter 2017	Nonfiction Level G 1-20-17	5	0	0	0	4	191
	Fiction Level H 1-20-17	0	0	0	0	0	341
	Nonfiction Level I 1-20-17	1	0	0	0	0	81
	Fiction Level J 1-20-17	4	1	0	1	2	271
Spring 2017	Fiction Level M	1	5	0	0	0	128
	Fiction Level L	3	9	0		0	229
	Fiction Level L	4	2	1	3	5	312
	Nonfiction Level J	2	0	0	0	0	250
	Fiction Dolch 220 Words	4	0	2	0	6	182
	Fiction Level M	1	0	0	0	0	200

Accurate Decoding

Given that Alex was reading leveled text at her independent and instructional levels, she was able to decode words accurately during intervention. As shown in Table 6, Alex engaged in self-corrects and correcting behaviors with a teacher prompt, and Alex incorporated the strategies taught during reading intervention class such as slow down, or stop to decode. However, Alex continued to decode unknown words by sounding them out letter-by-letter. She did not demonstrate the ability to divide words into syllables to pronounce them when reading passages aloud.

One of the most difficult readings for Alex in the November 2016 and again in May 2017 was an unleveled fiction passage that included 220 Dolch sight words (author unknown). The passage titled *The Best Thing in the World* is 675 words long; therefore many of the sight words are repeated several times throughout the story. In November, Alex read with 79% word reading accuracy and she was not able to retell any details after reading. Most of the sight words in the book were sight words taught in kindergarten through second grade at Kennedy Elementary through direct instruction. Alex would have had daily practice with these words in isolation and in reading passages especially during first and second grade since sight words was a category on the primary report card.

On May 22, 2017, Alex again read that same unleveled Dolch sight word passage with 89% word reading accuracy. Although Alex reduced errors from 147 to 73, less than half as many, the text was still considered to be at a "hard" level. She was able to give an accurate retelling, except at the very end of the passage because she had misread a key word (i.e., *what was the key word?)* that was critical to comprehending the conclusion. When I read the sentence containing the key word to Alex, she was able to tell me the end of the story. I asked Alex to

read the Dolch passage immediately following her final interview on May 22. That was the day that Alex was very sleepy yawing repeatedly and seemingly too tired to talk. I had to assess Alex on that day because of end of the year whole school events that interfered with any further academic classes. How Alex would have read the Dolch passage had she been well rested will remain an unfortunate unknown.

Table 7

Error Decoding Alex

	Passage Type	Insertions	Omissions	Substitutions	Told	Total Errors
Fall 2016	BAS1 Nonfiction Level F	0	7	4	0	11
	Fiction Dolch 220 Words	0	2	35	4	41
	Nonfiction Level E	0	0	14	0	14
Winter 2017	Nonfiction Level G	0	0	7	0	7
	Fiction Level H	0	0	13	1	14
	Nonfiction Level I	0	0	2	1	4
	Fiction Level J	0	2	10	0	12
Spring 2017	Fiction Level M	0	0	7	4	11
	Fiction Level L	0	2	22	1	25
	Fiction Level L	0	4	40	4	48
	BAS1 Nonfiction Level J	0	3	11	0	15
	Fiction Dolch 220 Words	0	2	14	2	18
	BAS2 Fiction Level M	0	0	7	2	9

Decoding Errors

The majority of errors Alex made in fall 2016 were substitutions of one word for another word and omissions of words, and this pattern continued to spring 2017. When making substitutions, Alex using some letter sounds rather than using all the letters in a word to read it. For example on February 15, she read “chicken” for “cracked” and “family” for “finally

(transcript 208) therefore, she needs more direct instruction during reading intervention to stop and decode words in their entirety.

End of Year Assessments

Alex was assessed by her classroom teach using the *Scantron Performance Assessment* and the Fountas and Pinnell *Benchmark Assessment System* as mandated. I assessed Alex end of intervention decoding using the *TOWRE* and the *QPA*. Alex national percentile rank decreased on the winter administration of the *Scantron Performance Assessment* and remained at that score in the spring. Alex improved very slightly on the *TOWRE*; however, that score was still less than the first percentile.

According to the Fountas and Pinnell *Benchmark Assessment System (BAS)*, Alex made progress during the 2016-2017 school year. The school district recorded the BAS score administered by her classroom teacher. Mr. James asked me to review Alex's record of oral reading for the level J BAS passage. After that review, I consulted the instructional coach, who administered the level M passage for the BAS. While Alex decoded a level J at the "Hard" level in the classroom with Mr. James, Alex decoded a level M when reading in a quiet setting with the literacy coach. Again this causes me to wonder if Alex reads differently in the classroom with the large group of peers than she does in intervention settings.

According to the official district Fountas and Pinnell *BAS* fall and spring scores, Alex learned to decode enough to move from second quarter of first grade to the end of first grade making about one year of reading growth. If the level M passage more accurately reflects Alex's decoding, then she ended fourth grade reading at the expected level for beginning of third grade according to the "Instructional Level Expectations for Reading" table (Fountas & Pinnell, 2015).

Whichever *BAS* score is most accurate, Alex is still in need of continued intensive, explicit instructional support in order to continue making progress in decoding.

Alex Interviews May

During final data collection, I interviewed both Alex and Mr. James her classroom teacher. At the final interview on May 22, 2017, I interviewed Alex for about five minutes. I interviewed Mr. James on May 16, 2017 for about ten minutes.

Alex Final Interview

Alex presented as very tired on May 22. She yawned several times. Sometimes Alex did not answer questions. This interview was abbreviated because Alex was having such difficulty answering questions.

LH: Are there books that are easy or hard for you?

Alex: (Big yawn).

LH: Are you sleepy? Did you get enough sleep last night, because you seem very down today? I'm kind of worried about you. Alex did not respond (Transcript 254 p. 2 at 2:20). Alex also had very big yawns at 3:00 and 4:00 minutes on the audio recording.

Ideas about good reading and knowledge of self as a reader. LH: Do you think you are a good reader?

Alex: Yes.

LH: Why?

Alex: Because I'm learning.

LH: Because what?

Alex: Because I'm learning. (Transcript 254 p. 1)

I agreed that Alex had been learning during the intervention as evidenced by data from records of oral reading and her in class participation.

Self-efficacy. LH: How sure are you that you can read anything that your teacher gives you? Kind of sure, not so sure?

Alex: Not so sure.

LH: Not so sure. So things that are at fourth grade level are still pretty hard?

Alex: Yeah.

Although Alex could say she was a good reader because she was learning, she recognized that grade level reading was still too difficult for her to decode. During the November interview Alex explained she learned best "when the teacher reads, and then we go over it. We read it again. (Transcript 176 p. 2)

Goals and motivation. By March and again in May 2017, Alex answers to questions about reading at home changed from the November 2016 interview when Alex shared that she did not read at home.

LH: How often do you read at home Alex?

Alex: Bad.

LH: Bad? What do you mean bad?

Alex: I can't figure the words out.

LH: you can't figure out the words, so you just don't read at home because it is too hard?

Alex nodded her head back and forth in affirmation. (November 16, 2016, Transcript 176 p. 3)

In March Alex stated that she did not read in the classroom when given a choice of activities, By March 2017, Alex offered that she was reading to her little sister at home. Alex answered similarly on May 22, 2017.

LH: When you have free time in the classroom, do you read books?

Alex: No.

LH: No. Do you ever read for fun?

Alex: Yeah, at home I do.

LH: At home. What kind of things do you read at home for fun?

Alex: Dog books.

LH: Dog books. That's cool. You like dog books.

While analyzing Alex's answers to these questions, I wondered why she would read at home, but not in the classroom. I wondered if other striving readers chose not to read when in the classroom with their peers, but did read at home. I thought further about how I phrased that question, "Do you ever read for fun?" Alex answered, "Yeah, at home I do." So reading could be fun at home while at the same time reading during choice time was not something Alex did. This finding was unexpected.

Application of phonemes and strategy knowledge. I asked Alex about her learning by asking about letters and syllables.

LH: Alex, tell me some things that you have learned about letters of the alphabet and syllables this year in my reading group.

Alex: Sounds.

LH: What kind of sounds?

Alex: Letter sounds.

LH: Letter sounds. So like for the letter *g*, what did you learn about the letter *g*?

Alex: The /g/.

LH: Anything else? Does it ever say anything else in words? You don't know? Are you having a hard time remembering? Okay.

During the interview I thought maybe Alex said /g/ because that is the most common sound for the letter *g*; however, after reviewing the *Quick Phonics Assessment* (*QPA*) task 1b. Initial Letter sounds, Alex had said /j/ for the letter g on November 16, 2016. Apparently Alex did learn that /g/ was a sound for the letter g because she gave that response for the letter g on April 27, 2017 during the *QPA* posttest.

I wanted to know if Alex could describe her strategy use, so I asked with this open-ended question.

LH: So what did you learn about ways you can change your reading like when you come – like when you're reading along, what can you do?

Alex: If you get a word wrong, you reread it.

LH: So if you get stuck on a word, you can reread it. Yeah? You can back up and do it again. When you are reading and you come to a word you don't know, what are the things that you do?

Alex: Stop and figure it out.

LH: Stop and figure it out. So is there anything else you do?

Alex: Well reread it.

LH: Reread it. Very good.

I wanted to know if Alex could tell me more about how she learned during intervention class. I asked directly.

LH: Did this class help you?

Alex: Yes.

LH: Do you know more about syllables or how to look at those chunks or mostly the letters?

Alex: Yes.

LH: Tell me more. Can you explain?

Alex: No.

LH: You look really tired. Is there anything else you want me to know about your reading?

Alex. No. (Transcript 254 p. 3)

At this point, I discontinued the interview.

Interview Classroom Teacher Mr. James Talks about Alex

During the interview with Mr. James on May 16, 2017, I asked him to describe Alex's reading. Since I was not able to interview Mr. James in November when intervention began, I asked him to include observations from early in the school year.

General observations of reading. LH: Please describe what you have observed about Alex's reading from when the school year started until now.

Mr. James: Alex's reading has become more fluid. I think she is reading with confidence. I think that has to do with the one-on-one time she has received from multiple interventionists. Her writing unfortunately has not caught up with her reading level. It is still, I would say phonetically written everything. I have shared different writing passages with you in the past, and from that point to this point, which has probably been a couple of months, it still hasn't improved. (Transcript 248 p. 1)

Application of phonemes and strategy knowledge. LH: When Alex is reading, and she comes to a word she doesn't remember or that she has never seen before, what do you see her doing?

Mr. James: Skip it. It's like her first inclination is not even to sound it out. It is to simply just skip the word. It is almost with perfect fluidity that she will come across a word, skip it and go on. There is barely any pause. It's like it is a learned ability.

I followed up asking more specifically about strategies.

LH: So have you seen evidence of Alex incorporating new knowledge and strategies into her reading?

Mr. James: Um, yeah. It seems. It almost seems like she is reading at a slower pace. It's like she's not rushing through it. She's reading a slower pace, but she's missing very few words except for the words she's never seen. I know.

LH: That's one of the strategies I taught was to slow down or stop.

Mr. James: And that's what she's done. The whole thing that bothers me still in her reading is the whole is just perfect fluidity and if she comes across a word that she doesn't know, she doesn't even try. She doesn't sound it out. Nothing. It's just skipped.

I found Mr. James description of Alex making omissions unexpected because during oral reading in intervention, she was making mostly substitution errors. Mr. James did confirm that Alex had slowed down. He also reported she was making fewer errors. Later I asked more open-ended about Alex's reading.

LH: What else do you think is important for me to know Alex and her reading performance?

Mr. James: I think a lot of the information you probably already know, but some of the information I've learned over the school year. I guess it was her first year that she missed the

better part of almost a quarter and a half of school, and I mean those are when they're learning sight words and all that, so I totally get that there are some of those words that are sight words. I'd be willing to bet that she doesn't know – doesn't sound out. Skips right over. You know. So like when I'm scoring on a Fountas and Pinnell, the skip is still, it's not a self-correction. It's not even an error. It's just simply didn't do it.

LH: Well that is an error if they omit it. If they omit a word.

Mr. James: What I meant was it's not like she tried.

T: Right.

Mr. James: So it's like if you sound out and it's wrong, at least you attempted.

T: So tell me about her comprehension when you're

Mr. James: Her comprehension is good.

T: So even skipping all those words?

Mr. James: Because the level she's at, there's a lot of pictures. And she can pull from that. Okay, like the one reading we did with the where they're talking about the dogs that are in the kennels and stuff like that. There were some words she skipped. It was about therapy dogs and she just skipped it. She just assumed that these were dogs that were at the kennel. And you know so, it's not like the word therapy, didn't even try just glossed right over it or whatever you want to call it just flew on by. Never once did the word therapy. And it was I think it was in that little passage that little paragraph like four or five times. Right there that's five errors. But you know really it's just one word.

Mr. James was referring to the BAS1 passage level J that Alex read to him for the final district assessment of literacy on May 10, 2017 when he described her omitting the same word repeatedly.

Goal and motivation. Alex had discussed her reading goals with me, so I wanted Mr. James perspective on classroom reading goals.

LH: Have you set reading goals with her this year?

Mr. James: Absolutely! When we first started, she was at an F. I said let's shoot for two grade levels, which she's done. I feel like her reading has improved so much that I think my excitement about it, I'm afraid to push her too far because I don't want her to get frustrated because she is really, really positive right now with her reading. So I'm just afraid if I push it too far, that she's going to come across something, get frustrated, and then shut back down and we'll loose, like they say, loose that grade level, or that level of reading. I'm afraid that we'd go back several levels.

LH: How did she decide on this goal?

Mr. James: We talked about it. We had a discussion, and I said, "Let's set a goal. Her initial goal was four. Then I thought levels.

LH: Four Fountas and Pinnell levels?

Mr. James: Four F & P levels.

LH: Because earlier you said, two years.

Mr. James: Right.

LH: Okay.

Mr. James: So I thought

LH: Initially four levels?

Mr. James: I thought four levels were too much, but I didn't discourage her. I just said, "Do you think that is too lofty of a goal, and she took that as well let's cut it in half. Let's just do two.

And so she's met her goal. I feel happy about it. I feel like she's a much more confidant reader then she was at the beginning of the year.

I was still confused about the reading goal that Mr. James set with Alex after trying to clarify during his interview. When I interviewed Alex in November, I missed the question about reading goals, but on March 9, 2016, I did ask about her classroom reading goal.

LH: Do you have a goal with Mr. James for your reading? Did you set a goal for him for levels?

Alex: No.

LH: No? So you don't know what your goal is?

Alex: No.

LH: Okay. (Transcript 219 p. 5)

Although Alex was unclear about her reading goal as measured in Fountas and Pinnell levels, she had her own goal to "read anything" (Transcript 219 p. 2).

Mr. James confirmed that Alex never reads in class during choice activities. He was very emphatic that Alex would not ever chose to read if given the option to do something else (Transcript 248 p. 2). This confirms Alex's answers to that same question.

Learning preference. Mr. James said that Alex prefers to check out picture books from the library. He has a class requirement that each student check out one chapter book. He elaborated that it was very difficult to give reading assignments based on picture books.

Thoughts about information gathered during the interview with Mr. James. I have wondered if Alex felt safer in the small group reading intervention to try to decode words than in the whole class setting with peers read close to, at, and above grade level. Data collected from records of oral reading for Alex showed that in the intervention setting, she substituted one word for another frequently (Table 7). She omits fewer words when reading in intervention class;

therefore I was surprised that Mr. James had observed mostly omissions during small group reading in his classroom.

Alex Case Summary

During the intervention study Alex did learn to decode more accurately, as assessments before and at the end of intervention confirmed. Alex had incomplete letter sound knowledge and weak understanding of consonant and vowel patterns typically taught in the first grade. These problems were identified in the beginning of the study assessments. Alex participated in grapheme-phonemes instruction. Alex practiced new relationships in isolation in order to replace incomplete grapheme-phoneme knowledge. Alex also needed explicit instruction in decoding strategies and practiced to increase cognitive flexibility with grapheme-phoneme relationships. Alex needed teacher support to segment and blend or chunk syllables during lessons.

Alex needed to feel respected by her class peers in order to risk making and correcting errors in class. Finally, as end of the intervention study and district assessments shown, Alex will need future intensive, explicit instruction to retain and progress in her ability to successful decode.

Bryan

Interviews November 2016

Bryan was interviewed on November 16, 2016, for eight minutes using a modified Burke Interview protocol. The protocol questions can be found in Appendix G.

The goals of the interview were to hear Bryan's ideas about a) good reading and self as a reader; b) knowledge of decoding strategies; c) reading goals and motivation; e) self-efficacy; and f) his learning preferences. Bryan is outgoing and enjoys talking to teachers and peer, so the

interview was a way to hear his thoughts about reading. Bryan's answers to questions are direct quotes from the transcript of the audio recording for his interview.

Ideas about good reading and knowledge of self as a reader. Bryan was vague about good reading during the November interview. When asked who he knew that was a good reader, he named students in the reading intervention class who are striving readers.

LH: What makes someone a good reader?

Bryan: By how they read.

LH: So when they read, what does a good reader do?

Bryan: They listen to what other people say.

Bryan may have been talking about listening in class, but I was confused by his answer.

LH: Do you think you are a good reader?

B: Yes.

LH: Why?

B: I don't know.

LH: Just think about it. If you think you are, tell me

B: I just think I am. (Transcript 173 p. 2)

Although Bryan said he was a good reader, he couldn't explain why.

Phonemes and strategy knowledge. LH: So pretend that Justin (pseudonym) is reading and he comes to something he doesn't know. What do you think he does?

B: He stops, goes back and rereads. And he tries to figure out that word.

LH: Anything else?

B: No.

By saying Justin "tries to figure out that word," Bryan implied he tries to decode. Bryan also knew that good readers reread. I followed up by asking Bryan what he does when he comes to a word he doesn't know.

Bryan: I try to think and say it out in my brain and try to put *a* and *g* and stuff into and see what it sounds like. If it starts with a *g*, try the *g* and the *j*.

LH: Okay, is there anything else you do?

B: No. (Transcript 173 p. 3)

We had started studying the letter *g* on two days earlier. Bryan was already able to explain the application from those lessons.

LH: What kinds of books are easy for you?

B: The *Three Little Pigs* is a little easy and a little hard.

LH: Okay. What kinds of books are hard for you?

B: *Diary of a Wimpy kid*. Some parts I can read. Sometimes I just look at the pictures.

LH: Because the words are too hard?

B: Yes. And then I read the captions that come out of his mouth if I can get them. (Transcript 173 p. 3)

Although Bryan thought that he was a good reader, he was also realistic about his reading weaknesses.

Goals and motivation. LH: What are your goals for being a better reader?

Bryan: I don't have one.

LH: None in the classroom with Ms. Lee? Would you like to set a goal?

Bryan: What reading level am I at?

LH: I will find that out, and then you and I will make a goal. Okay? And then we will talk about ways to get to it.

Bryan: Because if I'm not past K, then I will do K. (Transcript 173 p. 3)

Bryan was motivated to set a goal. In order to learn about student motivation outside of school settings, I asked Bryan how often he read at home. He was candid and I learned much from his response.

Bryan: Sometimes when we, no days actually. I try though, but no days.

LH: So what happens that you don't get to read at home?

Bryan: When we get home like tonight I would, but I'll have to go somewhere else and then I have to get up at 2:00 in the morning and go to my house.

I was confused, so I followed up.

LH: Why do you have to get up at 2:00 in the morning?

Bryan: Oh because my mom works a night shift and I stay at a babysitter. And then after that then I get picked up and then she takes me to our apartment. (Transcript 173 p.5)

He explained that his mom works two jobs one during the day and another at night. Bryan also explained that because of the bed he slept in he had a hard time getting enough sleep.

LH: So you have a hard time even getting enough sleep? Do you think that will get better when you get to your new house?

Bryan: Yeah.

LH: When do you read for fun?

Bryan: Never. (Transcript 173 p. 5)

Bryan talked about reading *Diary of a Wimpy Kid*, but did not consider it fun.

Self-efficacy. LH: How sure are you that you can read anything your teacher gives you to read as an assignment?

Bryan: A C.

LH: A C, what do you mean? Oops! Don't fall off that chair please. That would wreck our day. A C? What do you mean by A C?

Bryan: I mean I can't.

LH: So you can't sometimes. Are you frustrated, or are you okay with that?

Bryan: I'm frustrated sometimes.

LH: Are you frustrated in small group?

Bryan: Just sometimes.

LH: In the classroom sometimes?

Bryan: Yeah!

LH: But not all the time?

Bryan: Yup! (Transcript 173 p. 4)

At Kennedy Elementary, Tier 1 intervention was implemented for 30 minutes a day and every student received small group reading instruction focused on the state language arts standards taught within their zone of proximal development (Vygotsky, 1986). These groups were formed based on common formative assessments, meaning all students in the grade took the same assessment. Groups were fluid and regrouping occurred every four to five weeks. Bryan attended the group I taught and he could master the standard when reading at his instructional reading level; however, he could not decode well enough to comprehend at grade level, so he scored poorly on the common formative assessments.

LH: How sure are you that you will learn more about reading this year?

Bryan: Really sure. (Transcript 173 p. 4)

Although reading has been hard for Bryan, he was very emphatic that he would learn more in fourth grade.

Learning preferences. LH: What do you want me to know about how you learn that might help me teach you to read better? How do you learn? Tell me about that.

Bryan: I just listen to what she says and do it?

LH: Who is she?

Bryan: Ms. Lee.

LH: What about when you are in my class?

Bryan: I listen to what you say. (Transcript p. 2-3)

This answer explains more about Bryan's first answer that good readers listen.

Interview Classroom Teacher Ms. Lee Talks about Bryan

Bryan was in Ms. Lee's fourth grade classroom with two of the other study participants and the nonparticipant member of our reading intervention class. Ms. Lee described Bryan's reading on November 8, 2016. Ms. Lee's answers are direct quotations from the transcript from the audio recording of her interview.

General observations of reading. LH: Please describe what you have observed about Bryan's reading.

Ms. Lee: Bryan is very inconsistent depending on the day with his reading. Some days he will breeze through a passage. And the next day, same passage, he is stopping at every other word trying to figure out what it is. And he lacks the motivation to actually try.

Application of phonemes and strategy knowledge. LH: When Bryan is reading and he comes to a word he doesn't know, what does he do?

Ms. Lee: He will either make up a word and move on or he will look at me and smile and wait. And I have to tell him, use a strategy you know sound it out and go through it?

LH: So what strategies do you prompt them to use?

Ms. Lee: I usually tell them to chunk it out. If we need to we will even cover up the chunks of the words for them so they look at it chunk-by-chunk.

LH: Does that help him?

Ms. Lee: Sometimes.

Goal and motivation. LH: Have you set a reading goal with Bryan?

Ms. Lee: Yes, He is at J right now, so I believe it's an L.

LH: When students have a choice of activities does she choose to read?

Teacher: Sometimes. If I can get him to get the book out, then he'll read. But usually I have to remind him that at reading station, you have to get your book out and read.

Learning preference. LH: What kinds of books are difficult for him fiction, nonfiction? Have you noticed a pattern of difficulty?

Ms. Lee: He struggles with most of them unless he is interested in topic because with him it seems to be the first step is getting him motivated to read it. Usually if he's interested, he does a little bit better than when he doesn't care what it's saying.

LH: What kinds of books are easy for him?

Teacher: None.

LH: What else would be helpful for me to know about Bryan's reading performance in your class?

Teacher: His consistency is really lacking just depending on the day and his focus and medication.

Need for Grapheme-Phoneme Instruction

Data collection for this intervention study began on November 7, 2016, when I administered assessments individually to participants. I included data for *Scantron Performance Series* and the Fountas and Pinnell *Benchmark Assessment System* 1, which were previously administered by Ms. Lee in August or September 2016. The first intervention lesson was given on November 8, 2017.

Fall 2016 Assessments

Four literacy assessments were administered to determine if Bryan need to participate in the intervention and to measure his progress. Table 8 presents three of the literacy assessments and Table 9 presents the fourth literacy assessment.

Table 8

Reading Assessment Scores for Bryan

Assessment	Fall 2016	Winter 2017	Spring 2017
Scantron Performance Series for Reading	6th percentile	1st percentile	2nd percentile
Test of One Word Reading Efficiency (*TOWRE*)	Raw score = 15 Standard Score = 59 < 1st percentile		Raw score = 15 Standard Score = 59 < 1st percentile
Fountas and Pinnell *Benchmark Assessment System* (*BAS*)	Level J Instructional Proficient 1st quarter of 2nd grade	Level K Instructional Proficient 2nd quarter of 2nd grade	Level M Instructional Proficient 1st quarter of 3rd grade

***Scantron Performance Series* assessment.** On the *Scantron Performance Series* assessment, one of the two official district literacy measures, Bryan's percentile rank, which compared him to fourth grade students in the United States, placed him lower than 94 percent of the 4th grade students who took that same assessment. Scoring in the sixth percentile highlights Bryan's need of intensive reading intervention because the Scantron Performance Assessment adjusts difficulty giving easier questions if a student answers incorrectly and conversely more challenging questions as students score well. The school district placed him in the "beginning" category in September 2016, which is the lowest descriptor for achievement. A reasonable deduction was that Bryan was still reading mainly in the partial alphabetic phase of reading development because he has incomplete letter sounds knowledge, and he could use some grapheme-phoneme relationships to read words, but that knowledge was incomplete especially for vowel patterns (Ehri & McCormick, 2013).

Fountas and Pinnell *Benchmark Assessment System 1*. Bryan's instructional reading level was J at the beginning of his fourth grade year according to the official district measure using the *Benchmark Assessment System 1*. His classroom teacher would have used the *Benchmark Assessment System 1* to assess Bryan, because *Benchmark Assessment System 2* includes levels L through Z.

TOWRE. The *Phonemic Decoding Efficiency* portion of the *TOWRE* (1999) was administered in November 2016. Bryan had a raw score of 15 in November. The administration manual categorized Bryan in the less than first percentile rank for a 4th grade student receiving a standard score of 59. While the *TOWRE* is a brief test of phonemic knowledge, Bryan's performance confirms he needed for intensive and explicit phonics instruction.

Table 9

Quick Phonics Assessment (QPA) for Bryan

Task Number and Description	Number of correct/ total items	
	Fall 2016	Spring 2017
1b Initial Letter Sounds	21/26	25/26
2a Decoding Nonsense Words in Isolation with VC & CVC Patterns	6/10	10/10
2b Decoding Words in Context with VC & CVC Patterns	20/20	20/20
3a Decoding Nonsense Words in Isolation with Consonant Digraphs	7/10	9/10
3b Decoding Words in Context with Consonant Digraphs	10/11	11/11
4a Decoding Nonsense Words in Isolation with CVCC & CCVC Patterns	5/10	9/10
4b Decoding Words in Context with CVCC & CCVC Patterns	8/10	9/10
5a Decoding Nonsense Words in Isolation with Silent e CVCe Patterns	5/10	1/10
5b Decoding Words in Context with Silent e CVCe Patterns	7/10	7/10
6a Decoding Nonsense Words in Isolation with R-Controlled Vowels	4/10	7/10
6b Decoding Words in Isolation with R-Controlled Vowels	5/10	8/10
7a Decoding Nonsense Words in Isolation with Advanced Consonants	1/10	7/10
7b Decoding Words in Context with Advanced Consonants	3/10	8/10
8 Decoding Nonsense and Regular Vowel Team Words	12/30	21/30
9a Decoding Multisyllable Words – 2 Syllables	6/10	10/10
9b Decoding Multisyllable Words – 3 Syllables	0/10	7/10
9c Decoding Multisyllable Words – 4 Syllables	3/10	4/10
10 Decoding Words with Prefixes and Suffixes	Not given	16/30

Quick phonics assessment (QPA). The *QPA* is an assessment intervention teachers use to identify specific strengths and weaknesses in decoding according to traditional instructional sequence. The phonics skills assessed by *QPA* Tasks one through eight are first grade curriculum at Kennedy Elementary.

The November administration results on Task 1b Letter Sounds, Bryan had five letter sounds incorrect. He said /g/ for the letter *j*, schwa for the letters *e, w, y,* and /p/ for the letter *q*. Bryan's scores for *QPA* nonsense word tasks were poor. The *QPA* is not a timed assessment, so a striving reading can score better than on the *TOWRE*, which is has a 45 second time limit.

Because there was no limit on cognitive processing to segment and blend words on the *QPA*, a striving reading might score better. While Bryan read words in context better on some tasks, the fall 2016 *QPA* scores reveal weaknesses in grapheme-phoneme relationships.

Interpretation of Fall 2016 Assessments

The *Scantron Performance Assessment* measure verified Bryan's overall need for intensive instruction language arts. The *TOWRE* scores verified Bryan had a need for intensive phonics instruction, while the Scantron provides teachers with general suggestions for instructional planning, more details were needed in order to plan explicit intervention. The Fountas and Pinnell *Benchmark Assessment System 1 (BAS1)* and the *QPA* scores provided starting points for intervention. A reasonable conclusion was that Bryan was still reading mainly in the partial alphabetic phase of reading development because he has incomplete letter sounds knowledge, and he could use some grapheme-phoneme relationships to read words, but that knowledge was incomplete (Ehri & McCormick, 2013).

Detailed evidence that Bryan needed explicit systematic instruction about grapheme-phoneme relationships and decoding strategies was found in a) beginning lesson interactions, b) fall records of oral reading, and c) Bryan's answers during the November interview.

Grapheme-phoneme errors during beginning lesson interactions. During the early lessons of intervention, when Bryan made grapheme-phoneme errors they demonstrated cognitive inflexibility. The learning target for the first lessons was "I can say, find, and read all the different sounds for g." Bryan got stuck on a phoneme or rime *og*, repeating *frog, log, eggnog, eggnog*. He had difficulty switching to the next example.

LH: So now we are going to write some words with g at the end. Yes, just right down here. Frog.

A: Can I use another line to write this?

LH: You can. So frog has the same sound just at the end, right? Something that rhymes with frog? -og?

Bryan: Log?

LH: Log.

Jordan: L-o-g, log, nog

Alex: Fog

LH: Do they all have to be o words? No! Could you do –ig? What could go before the i?

Bryan: Nig?

LH: No, that's not a word.

Alex: Frog, log, nog

Bryan: Egg nog egg nog?

LH: -ig? -ig? -ig? -ig? –ig? What can you put in front of –ig? What letter to make a real word? (I wrote on board).

A: t

Bryan: Big

LH: Big. And she is right there is a tw- twig. What? (I could not hear student response on audio recording). You were making up stuff. Let's stick to real words for now. A twig is a little branch from a tree. Oh, you wrote wig. Cool! Tw-ig. Wig, wig works.

Bryan: Keep wig and twig?

LH: you can write twig or wig. Okay!

Bryan: Can we write both of them? I'm going to go down.

LH: You can write both of them. You can write wig too. Would you not bang that please? I'm going to erase mine (white board) and then we are going to write a new sound for g.

Bryan: Wig, wig

LH: Wait! If we talk just about this one sound, you won't learn the other sounds and that is what reading in our language hard, is we have the same letter, but more than one sound.

Bryan: Frog, gog, God?

LH: Now we are going to get rid of /g/ because we have a new sound. (Transcript 170 p. 304)

Later in that same lesson Bryan had trouble discriminating phonemes.

LH: Right now we are going to do the word gem.

Bryan: Gem.

LH: G-e-m.

Student: [Letter] g? It sound like j.

LH: It does. That g, we say /j/.

Bryan: /j/ /j/ /j/-em not /g/ -em. Do you know what a gem is?

Student: Peanut butter and jelly.

LH: Nope. That's jam.

Students laugh.

Bryan: J-a-m.

LH: A gem is…

Bryan: Gym.

LH: No, no that is a different word. A gem is precious stone an expensive rock. (I showed the students my ring). These are real rocks out of the earth rubies and diamonds. They are called

gemstones because they are valuable. Here is another word. Bryan said it, gym g-y-m. (Transcript 170 p. 6-7)

During lessons on November 15, 2016 and November 15, 2016, Bryan also had trouble discriminating phonemes.

LH: How may sounds are in light?

Bryan: night – ight.

LH: Listen. /n/ /i/ /t/.

Jordan: Fight.

Bryan: Three. (Transcript 171 p 7)

After segmenting *night* for him, Bryan could say the number of phonemes in the word. A few minutes later, the class had discussed and written down words with –dge or –ge with the phoneme /j/. Participants had recorded *bridge, fudge,* and *foliage*, I gave instructions to focus on a new phoneme /gl/.

LH: So we are going to do *gl* like *glass* and *gleam*

Bryan: Age.

LH: So get writing *gl*. Am I going too fast?

Bryan: Yeah!

LH: Okay. (I paused for Bryan to catch up.) Here we go with *gl.*

The next day, November 16, 2016, while reviewing the phoneme /j/ for the spelling -dge, Bryan decoded incorrectly, so I segmented the word with him.

LH: Watch! (I wrote on *bridge* on the whiteboard and underlined dge).

Alex: B-r-i-d-e

LH: And all that is that sound /j/.

Bryan: Bird.

LH & Bryan: /b/ /r/ /i/ /j/.

T: Well it's /br/ /i/ /j/.

Bryan: /br/ /i/ /j/.

This was the third day of instruction taking notes, looking at the notes and the "Sounds for the Letter G" chart and discussing example words. This demonstrates just how difficult acquiring new sound knowledge is for Bryan, and his need for continued explicit instruction for decoding.

Bryan struggled to stay focused on instruction. Data analysis showed that he had many examples of off-task behavior during lessons. The term off-task means any behavior that is outside of the lesson activity instructions. Examples of Bryan being off task in the early lessons of intervention include making noises such as "blaaaah," repeating phrases over and over such as "eggnog," "eggnog", or "crock pot, crock pot, crock potting, crock pot" interjecting these words between questions and answers by other students. Bryan often tapped on and on, hummed, blurted out the time remaining in class, and meowed like a cat (Transcripts 170, 171, 172, 177). Sometimes he would give himself a time out by sitting on rugs I had in the classroom for students who needed to calm down for any reason. A student could take himself or herself there, or I asked them to go if they were interfering with learning. Bryan frequently used this method to recover from causing disruption.

Grapheme-phoneme errors during fall records of oral reading. On September 9, 2016 Bryan read two *BAS*1 passages. The first passage was a level K. Bryan made so many errors that by the time he had read 148 words on page six; he already had 81% word reading accuracy. Scoring below 90% on a level K is considered the "Hard" level meaning the text is too complicated even with instructional support. In the *BAS*1 and 2 kits, the recording sheet for each book has instructions printed at the top. "Place the book in front of the student. Read the title and introduction. Introduction: Animals and people have five senses. But animal senses do not always work like people's sense work. Read to find out how some animals see, touch, taste, smell, and hear" (Fountas & Pinnell, 2008). Even with the word senses used once in the title and three times in the introduction, Bryan decoded "senses" as "signs, seen, seen, seens," and finally correctly as "senses" while reading page 2 of the book. On page 4, he read *senses* correctly, but on page 6, he misread *senses* as "signs" again. In that same book, Bryan had difficulty decoding "know, how," and "who." On page two, Bryan read, "*know"* as "how," how as "the" and "how" correctly once. On page 4, he read who as "*how*," omitted *who* once, and read *how* correctly. On page 6 Bryan omitted *"*how*"* then he self-corrected the error. As you can see from these types of errors, Bryan has does not consistently decode words in context, and he was not monitoring for comprehension.

Again on another *BAS*1 passage, the word the "therapy" is used in the introduction that the administrator reads. Bryan did not decode "therapy*"* the three times it was in the book even though he had just heard it in the introduction.

Bryan talks about decoding and classroom reading during the November interview. When Bryan talked about reading, he described his attempts at decoding as in his brain.

LH: When you are reading and you come to a word you don't remember or you have never seen before, what do you do?

Bryan: I try to think and say it out in my brain and try to put *a* and *g* and stuff into and see what it sounds like. If it starts with a *g*, try the *g* and the *j*.

LH: Okay, is there anything else you do?

Bryan: No. (Transcript 173 p. 3)

This told me that Bryan uses some metacognition to decode. Bryan was articulate about his strategies for coping with books that are difficult for him.

LH: What kinds of books are hard for you?

B: *Diary of a Wimpy Kid*. Some parts I can read. Sometimes I just look at the pictures.

LH: Because the words are too hard?

B: Yes, and then I read the captions that come out of his mouth if I can get them.

Ms. Lee elaborated by sharing that Bryan was very inconsistent day to day. Some days decoding was easier for him and some days it was very difficulty for him.

The findings of fall assessments, beginning intervention lessons, and November interview with Bryan and Ms. Lee, confirmed that Bryan needed explicit decoding instruction. Bryan was selected as part of a sample of convenience, intensity, and criterion; however, Bryan had already been in intensive intervention since early in his kindergarten year. Surprisingly, Bryan was still unsure of some individual letter sounds, and he was two years behind according to Fountas and Pinnell *BAS1* (2008).

Practicing during Instruction

Bryan needed intensive explicit instruction about decoding and participated in all the lesson activities including a) note taking combined with saying phonemes aloud, decoding aloud, and giving example words. Bryan also learned from b) discussing word meanings, c) practicing grapheme-phoneme relationships within words in isolation from text, and d) using new grapheme-phoneme knowledge and new strategies while reading passages. Archer and Hughes (2011) recommend that students also be explicitly taught routines for learning. This instructional pattern was repeated for letters and syllable types.

Note Taking and Saying Phonemes Aloud

As with the letter *g*, when I started instruction for the letter *c*, the students took handwritten notes in their wordbooks with symbols for sounds and example words that contained those target grapheme-phoneme. The letter *c* was taught beginning on Monday, November 28, 2016. That was the first day of class after five days off from school for the Thanksgiving holiday. At the outset of class, Bryan was uncooperative slumping in his chair with a pout express on his face. I reviewed class behavioral expectations. He was still refusing to sit up and get into a working position. I corrected him directly, and he worked without any further misbehavior the entire lesson. In fact from the transcript of that lesson, he responded verbally to most of the questions and prompts, while the other participants were unusually quiet.

LH: Now it is time to look at another tricky sound. You are going to need a pencil and go to the next blank page. Our learning target is "I can read the kindergarten and complicated sounds for the letter c." So what are the kindergarten sounds for the letter *c*?

Students: /k/ /k/ /s/ /s/

LH: What did you learn in kindergarten?

Students: /k/

Bryan: /k/ repeats at least 8 times.

After this instance of saying the sound many times very rapidly, Bryan settled into the lesson and was engaged. After writing several examples of common words with the phoneme /k/, we moved on to the next phoneme.

LH: So the next one for *c*, we do say the /s/ sound. So it sounds like *s*.

Bryan: /ss/.

LH: So that slash thing we do - the slash that means the sound. So you're going to write a c and Bryan you are going to write this. (Bryan was staring off. At his name, he started writing). It's just a slash to say that is the sound you are going to say.

Bryan: /ssss/

LH: The same thing as with *g*. If it's an *e*, following it, cent.

Bryan: Cent?

LH: See the *e*? So like with the *g*, the word *gentle*, the *g* followed by the *e* is /j/ entle. So *cent*. Here's another one *city*. C with an *i*, you are going to say /s/. If it is with a *y*, like in *cycle*. *Cent, city, cycle*. Let's write those down Bryan.

Bryan: Oh! I know how to spell *city*.

LH: Nope. This is the *cent* like money. There is a *sent* that starts with I sent you a letter

Bryan erased "sent" and corrected the spelling to "cent."

LH: Cent c-e-n-t cent like a penny. Give me five cents. You would give me five pennies or a nickel. And cycle like bicycle, or tricycle.

Bryan: Trike.

LH: Recycle. No not trike. (Transcript 181 p. 2-3)

Striving readers in this study often gave a correct response, and then gave an incorrect example a moment later.

The following day November 29, 2016, we continued where we left off with the sounds for *ch*. I gave the example words of etch and someone said sketch.

LH: Sketch and etch. Yes, you can write sketch and etch down.

Bryan: Sketch and betch.

T: Okay, so you learned a new word today.

Bryan: Sketch.

T: So when you see tch, say you're going to say /ch/ just ch.

Bryan: t-c-h. (Transcript 182 p. 3)

At times, when participants spontaneously created nonsense words when rhyming, I let them experiment a little if it was not derailing other students. When Bryan made the rhyme, I knew he heard the /ch/ phoneme to be able to produce the rhyming nonsense word.

Word Meanings

When teaching phonemes in a comparative way, I use both words that students are familiar with and some that I am quite sure they do not have in their oral vocabularies.

LH: Read this one please

Students: Smidge.

LH: Smidge

Students: Smidge.

B: I got a smidge (He pointed to his face.)

LH: Oh that's a smudge. But a smidge is a tiny little bit. If you say give me a smidge of ketchup, you want two or three drops.

Jordan: Like a smidge of food coloring.

LH: Try this one. Alex don't write it down, but read it.

LH & Students: Midge.

LH: Midge is a kind of bug. They are very tiny almost like a flea.

The learning target for the lesson on March 31 was to categorize r-controlled vowels. This was day two of the Word Find activity. On the previous day, participants had looked through books they would be reading and found words that fit our patterns. Bryan had found the word "sugarmakers." I simply stated that "sugarmakers" are the people who make maple syrup. Later in that same lesson, Bryan again volunteered a word he had from the Word Find.

Alex: What is that word?

Bryan: Dork. I found Dork.

LH: How would you write dork?

Bryan: d-o-r-k. Dork.

LH: That's not a very nice name, but you'll find it in books. (Transcript 231 p. 7)

Practicing Grapheme-phoneme Relationships in Words

After taking notes and saying correct phonemes for complicated graphemes, we practice words in isolation to build cognitive flexibility. On November 30, we were practicing the new phonemes for the letters *g* and *c*, plus were beginning to look at syllables in words. I had prepared index cards containing only one two syllable word containing either the letter *c* or *g* (Terban, 1998).

LH: Here is a word with g.

Bryan: Re-/j/ Region.

Bryan pronounced *region* correctly.

LH: Re-

Bryan: gel. Gel.

LH: What do you say for al?

Bryan: Real

Jordan: Gul.

LH & Students: Re-gal.

LH: So it has the /g/ sound.

B: Regal, e-a-l – eagle. (Transcript 183 p. 3)

Again, Bryan rhymed, which meant he was cognitively comparing phonemes in those words.

Practicing Grapheme-phoneme Knowledge and Strategies in Connected Text

After explicit instruction about letter, finding words and categorizing them, it was time to practice reading those phonemes in a book. First, the class choral read the whole book. Next, I assigned roles and we read the play in the second half of the *Lion and the Mouse* (Fountas & Pinnell, 2009).

Bryan read with good accuracy. He was also able to self-correct some errors.

Bryan: You woke me up. I'm going to eat you.

Bryan: You think you can help me. How could a little mouse ever help me? What a funny little mouse you are. I think I will let you go. I am not that hungry any way.

A few lines later, Bryan told Jordan the correct word when she made an error.

Jordan: A few days later, the lion was out walking. Suddenly a…

Bryan: Hunter's

Jordan: Hunter net trapped him.

Bryan: I am caught.

And Bryan was reading silently, which is what I want them to do for maximum practice. Evidence that Bryan was reading along came again when Jordan made another error.

Bryan: Do not be silly little mouse. What can you do? Not (self-correction) no one can help me now.

Alex: I can help you.

Aryianna: So the mouse went to work. He bit an (self-correction) at the um- ropes with his little teeth. He bit and he chewed. He chewed and he bit.

Jordan: Then he bit all (reread). Then he bit and he chewed some more. It took the mouse (reread). It took the little mouse a long time, but last the mouse was free.

Bryan: You mean the lion.

Jordan: Oh, dah!

Bryan was decoding better by correcting his own errors and reading well enough to provide support to Jordan.

Bryan Interviews March 2017

I interviewed Bryan a second time on March 9, 2017 for about ten minutes. I departed from the format of the initial interview somewhat because I wanted to know if Bryan could speak more directly and knowledgeably about his decoding.

Classroom Reading

LH: So when you're in Ms. Lee's class, and there's a problem - someone is having trouble reading something, what does she tell students to do?

Bryan: Do your work?

LH: Like when you are all at her table and you're reading together.

Bryan: She really doesn't say much.

LH: Are things different in her class than in my class?

Bryan: Yes.

LH: Can you explain more?

Bryan: She asks us questions and I say, 'I don't know' because I really don't read it. I just look over the words.

LH: You just look over the words because you don't really read it. How come you don't really read it?

Bryan: Sometimes it's really hard. And we read it together.

LH: We read it together so are they going too fast for your eyeballs or?

Bryan: I mean like the first time she says to read it. And then people don't give good enough answers, so she lets us all read it together. (Transcript 220 p. 2)

In the classroom where the curriculum is based on fourth grade standards, Bryan has other strategies for coping. Mainly, he depends on others to answer questions, so he can listen or he waits until they read as a whole group, so his reading is supported in that way.

Ideas about Good Reading and Knowledge of Self as a Reader

LH: What have you learned this year in our class about good reading? What kind of things have you learned?

Bryan: To stop and slow down.

LH: When you slow down or stop, what do you do?

Bryan: Go back and reread.

LH: Is there anything else you do?

Bryan: No. (Transcript 220 p. 1)

Bryan now associates good reading with using decoding strategies. During his initial interview, his ideas about good reading included listening to others, rereading, and trying to figure it out. While those good reading behaviors described in the initial interview are important to learning in a classroom, Bryan's ideas about good reading have become more specific.

Self-efficacy

LH: When a teacher assigns you something, how sure are you that you can read anything a teacher assigns? Pretty sure? Not so sure? Kind of sure?

Bryan: Not so sure.

LH: No so sure. Is any of that getting better for you?

Bryan: Lots of it is getting better for me. (Transcript 220 p. 2)

While Bryan felt like things were getting better in the classroom, his *Scantron Performance Assessment scores* for winter and spring showed that Bryan fell further behind his same grade peers. Data collected through the General Education Intervention (GEI) process also concurred; therefore, Bryan was referred for special education evaluation.

Goals and Motivation

LH: What would you like to do better as a reader?

Bryan: To be able to read more words and move up more levels before the end of the school year.

LH: Has that happened some this year or are you stuck where you were at the beginning of the year?

Bryan: I've moved up I think.

LH: You think, but you're not sure, so that's something that I could maybe look up for you. (Transcript 220 p. 3)

Bryan was clear that he wanted to improve before the end of the school year when he would be moving to a new school in a new school district.

Application of New Phonemes and Strategy Knowledge

LH: What have you learned about letter sounds?

Bryan: To say them.

LH: Oh! Have you learned anything about certain letters?

Bryan: We've learned about the *g* and how it's silent and stuff.

LH: What about the *c*? Have you learned anything about *c*?

Bryan: Lots of stuff.

LH: Okay, are those crazy letters because they have lots of different sounds?

Bryan: Yes.

LH: And so do you think you are more able to – that helped you in any way to know that knowledge?

Bryan: Yeah!

LH: Can you tell me an example?

Bryan: Like when I was reading with Ms. Lee.

LH: Can you tell me what happened?

Bryan: I was reading and then I stopped and went back and read it again.

LH: And you figured out the new word sounds?

B: Yeah! (Transcript 220 p. 1-2)

While Bryan's response, "to say them," sounded simplistic, it was profound. If Bryan did not know what phonemes to say for some graphemes, so he was guessing, then his answers about slowing down, stopping, and saying sounds accurately describes how he learned to decode.

Learning Preference

LH: When you read in Ms. Lee's class, are there kinds of books that are more difficult than others?

Bryan: Yes, some are difficult. Some are not.

LH: Have you ever figured out which ones are more difficult? Are stories more difficult than informational books?

Bryan: Sort of.

LH: Does it depend on the words or the topic?

Bryan: The words and the topic. (Transcript 220 p. 1)

Bryan sounded uncertain about what types of books were difficult.

Other information

LH: What would you want me to know about you that might help me teach you better about reading?

Bryan: When I get headaches, just let me lay down.

LH: Yeah, but…

Bryan: Sometimes I don't have medicine here.

LH: And that's a problem we're having – the headaches right?

Bryan: uhmmm. (affirmative) It is sort of the weather and sort of the stuff around I do like the recess and the PE and music.

LH: You said all the noise. The noise makes you have headaches.

Bryan: Yeah.

LH: Is your mom talking to your doctor about that? You don't know. Does she know you are having this many. (Transcript 220 p. 4-5)

The discussion about Bryan's headaches was lengthy. I used a sports analogy to try to motivate him to read through the pain just as basketball players and skateboarders, Bryan's favorite sports, practice through pain as soon as their doctors allow it. In order for Bryan to meet his goal to move up more levels, he must keep working during reading intervention class.

Winter and Spring Instructional Interactions

As I formulated the scope and sequence of content and scaffold learning activities for this study, it was based on theory of cognitive flexibility and the possibilities of applying that theory to help striving fourth grade readers move from being fairly inflexible in cognition to flexibility by giving them more knowledge about grapheme-phoneme relationships in printed English.

One important consideration was about evidence for cognitive inflexibility versus flexibility. If striving readers in fourth grade were limited by kindergarten and first grade knowledge of letters sounds and vowel consonant relationships so that they were reading mostly in the partial alphabetic phase of reading (Ehri & McCormick, 2013), then greater cognitive flexibility would allow them to say more phonemes and apply decoding strategies to words thereby increasing accuracy when reading.

Practicing Grapheme-phoneme Knowledge and Strategies in Connected Text

The introduction to the lesson on January 19, 2017 was lengthy about three minutes, but it captures the scaffold of learning and practicing leading up to the instructions for that lesson.

LH: We've been working on knowledge, but not just knowledge. We have also been working on a plan to help us do better. We have gone over the sounds for g, all the sounds for *c*, and we've taken a look at very briefly at consonant vowel consonant syllables, and syllables that have the consonant –le /l/ sound. And today I told you I'm

going to give you a book that's at your reading level, so you can start to use the "slow down" part of our strategy. Slow down and look at all the letters in the words.

Now you can have your book out so you can use if you forget "Okay I see an *o*." "Oh yeah, there is an *oi,* I could say boy." So I want you to have this out so you can stop and look and figure out what part you might need. Because that is one of the best ways our brain learns. One of the things I have learned in all my education about the brain is our brain is kind of on the lazy side. The more times you look at this chart (See Appendix K), pretty soon your brain will get tired of looking and you will remember it forever. So instead of guessing, looking, although it is very slow, it's really slow isn't it? It's like a stop sign. And it's even slower than the speed bump. Right Aryianna? But if I can't remember *ow*, I can see on here. Well I could say *ow* is sometimes *o* like grow, or sometimes *ow* like cow. That helps me. So you have to kind of guess and try it out, but this is a great resource. I am just going to have you whisper read to yourself. (Transcript 197 p. 1)

Later in that lesson, I took a record of oral reading as Bryan reading on page 14 of *All About Robots* (Fountas & Pinnell, 2009).

Bryan: Robots have evan (self-correction) even go into places (error should have read "space"). This robot is called a rover. It went to the plane Mars. The rover does not have eyes. It has lots of com| cam|carm-er-as cameras (slowed down & repeated) cameras

LH: You slowed down.

Bryan: Inside (error). The cameras keep…

LH: Wait, go back because I was talking over you.

Bryan: ...cameras inside…

LH: Wait a minute. Go back here because it will make sense. Called a rover.

LH & Bryan: This rover does not have eyes. It has lots of cameras…

Bryan: Inside

LH: Wait, is that inside?

Bryan: Instead. The cameras keep (reread) keep the rover from get, get-ting (divided syllables) lost or crashing into things.

Bryan had slowed down to read this sentence to decoding the word "getting," then he read very slowly through the end of the sentence. Bryan continued using strategies as he read on.

Bryan: The robot look (Bryan stopped and self-corrected) took pictures from space back on earth.

LH: Did that make sense? (Bryan shook his head no.) So what could you do?

Bryan: Scientists back on earth. Scientists.

Bryan used his phoneme and syllable knowledge. He used the strategies to slow down, stop, go back and reread. Some of his strategy use was with teacher prompting, but some he use all on his own with no teacher support. This record of oral reading supports that using professional judgment to scaffold explicit instruction helped Bryan improve his decoding, yet there was room for much improvement. On the January 19 reading, Bryan still had 17 substitution errors and one insertion error. Bryan still needed intensive instructional support for a level K book.

By February 14, 2017 Bryan read *Little Cat, Big Cat* level L book. Bryan read a level L book with five substitutions, six self-corrections, and two rereads. However, the passages Bryan

read in March and April again had more substitutions. Learning to decode for striving readers takes much time and practice.

Assessments and Records of Oral Reading Bryan

Tables 10, 11, and 12 detail analysis of Bryan's oral reading behaviors before the study began through the end of data collection. While records of oral reading account for important reading behaviors, these records do not capture the thinking behind those behaviors, yet these behaviors gave insight into the cognitive processes a student used to read passages aloud.

For this intervention, I mainly used the Fountas and Pinnell LLI books from the green, blue, and red systems for most of the fiction and nonfiction reading. The lesson guides detail the increase in difficulty to illuminate lesson planning. When I used materials from other sources that were not leveled, the participants struggled more with decoding, which is logical since they are not carefully graduated for striving readers.

Table 10

Records of Oral Reading Analysis for Bryan

	Passage Type	Total Errors	Correct Words	Words Read	Accuracy Percentage	Reading Level
Fall 2016	*BAS*1 Nonfiction Level K	28	120	148	81%	Hard Level
	*BAS*1 Nonfiction Level I	14	203	217	94%	Instructional Level
	*BAS*1 Nonfiction Level J	21	246	267	92%	Instructional Level
	Dolch 220 Words	65	610	675	90%	Instructional Level
Winter 2017	Fiction Level K	6	228	234	97%	Independent Level
	Fiction Level K	17	263	280	94%	Instructional Level
	Nonfiction Level L	5	293	298	98%	Independent Level
	Nonfiction Unleveled	19	121	140	86%	Hard Level
Spring 2017	Nonfiction Level M	12	161	173	93%	Hard Level
	Nonfiction Level L	21	301	323	93%	Hard Level
	Nonfiction Level K	8	228	236	97%	Independent Level
	*BAS*2 Fiction Level M	6	204	210	97%	Independent Level
	*BAS*2 Fiction Level N	19	199	218	91%	Hard Level
	*BAS*1Fiction Level K	24	210	234	90%	Instructional Level
	Nonfiction Level O	12	237	249	95%	Instructional Level
	Dolch 220 Unleveled	38	637	675	94%	Instructional Level

Bryan's decoding varied from reading to reading throughout the study. Bryan's September 2016 reading level was J. As classroom teachers make decisions about where to start leveling at the beginning of the year, the previous year's ending level considered. On September 9, 2016, Bryan read a Level K from a *BAS 1* nonfiction book at 81% word reading accuracy, which is the Hard level. Any score below 90% accuracy is considered Hard for levels A through K. During the winter, Bryan read one level K fiction book at the independent level and another fiction level K at instructional level.

Ms. Lee said in interviews and I concurred that we thought Bryan preferred nonfiction texts; however, he read fiction and nonfiction with about the same accuracy rates.

I did ask him to read a Level O book on May 12, 2017 as the final record of oral reading for data collection in the research classroom. In the quiet environment of the intervention room,

he was able to decode a Level O book with good comprehension. I have wondered about the slight differences between the *BAS* assessments given in the classroom by the classroom teacher and reading in the more private setting of the reading intervention room. No audio recordings were made of those readings in the classroom, so although there are records of oral readings to compare those subtleties.

According to the official district measure using the Fountas and Pinnell *BAS 2*, Bryan's end of the year reading level was M. Level S is the expected grade level for beginning fifth grade. Level M is the expected level for beginning third grade. So, although Bryan made one year's progress according to the Fountas and Pinnell "Instructional Level Expectations for Reading" chart (2015), Bryan was still two years below his peer group.

Table 11

Accurate Decoding Bryan

	Passage Type	Self-Correction	Correction with Prompt	Slow Down or Stop	Sound It Out	Reread	Words Read Automatically
Fall 2016	*BAS*1 Nonfiction Level K	4	0	0	0	0	116
	*BAS*1 Nonfiction Level I	10	2	0	1	1	203
	*BAS*1 Nonfiction Level J	5	0	0	4	6	231
	Dolch 220 Words Fiction	18	0	0	1	6	580
Winter 2017	Fiction Level K	5	0	0	0	0	223
	Fiction Level K	6	2	1	0	2	248
	Nonfiction Level L	6	0	0	0	1	286
	Nonfiction Unleveled	6	1	0	0	1	113
Spring 2017	Nonfiction Level M	1	1	0	0	1	158
	Nonfiction Level L	6	0	0	0	3	292
	Nonfiction Level K	3	1	0	0	1	203
	*BAS*2 Fiction Level M	5	0	0	0	0	199
	*BAS*2 Fiction Level N	5	0	0	0	0	194
	*BAS*1Fiction Level K	11	1	0	0	0	197
	Nonfiction Level O	8	4	0	0	1	223
	Dolch 220 Unleveled	27	0	0	0	25	585

Based on the data in Table 11, Bryan expanded his use of strategies from sounding it out in early readings, to chunking syllables. On the earlier passages, Bryan sounded out some words by segmenting parts of words. In January, Bryan began dividing words into syllables to pronounce words, which was a desirable outcome. Because saying words in syllables would ease the cognitive complexity of decoding compared to saying individual phonemes for multisyllabic words. Bryan used rereading on many passages. This indicates that he is monitoring his comprehension enough to realize the needed to back up and read again. These are strategies that Bryan talked during his interviews. These changes in reading behavior are evidence that Bryan increased his cognitive flexibility when decoding.

Table 12

Error Decoding Bryan

	Passage Type	Insertions	Omissions	Substitutions	Told	Total Errors
Fall 2016	*BAS*1 Nonfiction Level K	0	8	20	0	28
	*BAS*1 Nonfiction Level I	0	0	13	1	14
	*BAS*1 Nonfiction Level J	0	5	16	0	21
	Dolch 220 Words Fiction	0	6	69	0	65
Winter 2017	Fiction Level K	0	0	6	0	6
	Fiction Level K	1	0	17	0	18
	Nonfiction Level L	0	0	5	0	5
	Nonfiction Unleveled	0	0	17	2	19
Spring 2017	Nonfiction Level M	0	0	12	0	12
	Nonfiction Level L	0	1	21	0	22
	Nonfiction Level K	0	0	8	0	8
	*BAS*2 Fiction Level M	0	1	5	0	6
	*BAS*2 Fiction Level N	0	2	17	0	19
	*BAS*1Fiction Level K	0	2	21	1	24
	Nonfiction Level O	0	1	11	2	14

Dolch 220 Unleveled	1	1	35	1	38

Decoding Errors

The majority of oral reading errors Bryan made were substitutions. Bryan substituted based on the first letter or two. For example, he said "seen" for "senses", "form" for "from," "reach" for "rough," "laugh" for "loaf," and "monsters" for "months." In these instances those substitutions would have confounded meaning making. In a few places, Bryan substituted words that kept the meaning of the sentences mostly intact. In these cases, he did not rely on first letter sounds, but departed from the printed text. For example, in one passage he said "arms" when the printed word was "special." This made meaning in the context of the sentence and the larger passage, but it was not exactly the meaning the author conveyed. Some other examples of this type of substitution were reading "ask" for "said," "about" for "between," "wanted" for "started," "enough" for "seventy," "ready" for "watering." These errors mean that Bryan is relying more on syntax to make meaning so that he stops decoding the actual text in order to keep a steady reading pace.

End of Year Assessments

Four assessments were administered to Bryan in November 2016 and in May 2017. Scores for *the Scantron Performance Assessment*, the *TOWRE*, and Fountas and Pinnell *Benchmark Assessment System (BAS) 1 and 2* are summarized in Table 8. And the *(QPA)* is presented in Table 9. The Fountas and Pinnell *Benchmark Assessment System (BAS) 1 and 2* are detailed Tables 10, 11, and 12 in the preceding section. The *BAS* and the *Scantron Performance Assessment* are the district official measures of literacy. The *TOWRE*, and the *Quick Phonics Assessment (QPA)* were given to measure Bryan's decoding accuracy as part of this study. Scores for *the Scantron Performance Assessment*, the *TOWRE*, and *(QPA)* are summarized in

Table 8 and Table 9. The beginning and ending quantitative data from these assessments four assessments compares Bryan's fourth grade reading progress or lack of progress.

Scantron Performance Series Assessment

On the *Scantron Performance Series* assessment, Bryan scored lower in the winter and spring than he did in the fall. From fall 2016 to spring 2017, Bryan's percentile rank dropped from 6 to 2 indicating that he fallen further behind his peers on this assessment. The school district placed him in the "beginning" category fall, winter, and spring.

TOWRE

The results of the May administration indicated that Bryan again had a raw score of 15 and a standard score of 59. Bryan's *Phonemic Decoding Efficiency* was less one-percentile rank for fourth grade and had not changed although his reading level had improved in instructional settings. The November 7, 2016 score was useful to establish that Bryan had need for intensive and explicit instruction in decoding. The May score verifies that Bryan still needs explicit instructional support in decoding.

Fountas and Pinnell Benchmark Assessment System 2

On May 11, 2017 Bryan's classroom teacher Ms. Lee assessed him as the Instructional category at Level M. In order to establish the most accurate Instructional level, the assessor manual states the student should read increasingly more difficult levels until the Hard category is reached. The instructional level is then the last instructional level before the Hard passage. Ms. Lee had Bryan read a Level N passage. Bryan read the Level N passage with 91% accuracy and unsatisfactory comprehension; therefore, for Bryan a Level N is Hard. Bryan needs instruction at Level M, which is his current Zone of Proximal Development (Vygotsky, 1986).

Although Bryan made progress in reading during the study, he remains a striving reader. In order to end fourth grade at grade level for reading, Bryan would have to be instructional at Level S or T. According to the Fountas and Pinnell Instructional Level Expectations for Reading chart, Level M meets expectations for grade level during the first quarter of third grade. Bryan's beginning of the year 2016 Level was J, which is the expected level at the beginning of second grade. While Bryan made one full year of reading growth according to this assessment system, he remains two years behind grade level at the end of this study.

Quick Phonics Assessment (QPA)

The *QPA* was administered in November to guide instructional planning. The *QPA* was administered again in May 2017 to verify if earlier decoding breakdowns had been resolved. When comparing the November and May administrations, Bryan improved decoding both nonsense words in isolation and real words in context with the exception of the CVCe pattern. In May 2017, Bryan missed one of the initial letter sounds on Task 1b; however, he knew additional sounds for letters studied during the data collection period.

Evidence that Bryan was able to see patterns as syllable types by the end of the study, was in his scores on Tasks 9a, 9b, 9c, and Task 10. While he scored poorer on task 9c, there was not an instructional emphasis on three or four syllable words. For some words, he was able to decode syllables, but not pronounce the whole word. Scores are based on pronouncing the whole word. Bryan was able to decode better by *BAS*2 and *QPA* assessments. The *TOWRE* assessment stayed the same, but the *Scantron Performance Series* Assessment placed Bryan further behind his peers at the end of fourth grade.

Bryan Interviews May

On May 19, 2017 interviewed Bryan to revisit what he could tell me about a) good reading and self as a reader; b) knowledge of decoding strategies; c) reading goals and motivation; e) self-efficacy; and f) his learning preferences. During the eight minutes that I interviewed Bryan, a teacher next door needed a time out space for a disruptive student, so the interview was interrupted. A few minutes later, there was the noise that sounded like a huge bin or math manipulative being dumped out and sorted. This noise continued through the interview. In spite of these disruptions, Bryan was articulate about his reading. Bryan's answers to questions are direct quotes from the transcript of the audio recording for his interview.

Ideas about Good Reading and Knowledge of Self as a Reader

Bryan described himself again as a good reader during the final interview; however, this time he had a specific reason.

LH: Do you think you are a good reader?

Bryan: Yes!

LH: And why?

Bryan: Because I can read a little bit better than I could last year, last summer.

LH: Okay, so what can you do better?

Bryan: Read more.

LH: Oh, so for a longer time.

Bryan: Uhmm.

LH: When I made you read that book *Stay Away from Simon* in our other reading class, and you said, "I can't read a book." You did it didn't you?

Bryan: Uhmm. (Transcript 253 p. 2)

I asked about Bryan's comprehension on longer passages, but noise made by another teacher who was pouring manipulatives onto a table interfered with Bryan's ability to articulate his idea. I shared the intervention room with two other teachers.

LH: Anything else that's changed about your reading that would make you a good reader? What about your understanding? Do you understand more of what you read? You're nodding you head. Tell me a little bit about that if you can.

Bryan: I forgot. (A very loud noise of someone pouring a lot of manipulates out on a table or desk in the background began at this point and continued.)

LH: Forgot what?

Bryan: About.

LH: When you read are you understanding more of what you read?

Bryan: Yeah!

LH: So tell me about that. You said yes. (Terrible noise of lots of items being moved around continually maybe being sorted)

Bryan: I understand when there is like they're saying something else and something else, and it's like get in the way and sometimes I understand it. Yeah!

LH: Is that why you're rereading because you told me earlier rereading, so then you know when you're not understanding. Is that right?

LH: Yeah. (Transcript 253 p. 1)

So although Bryan explained his cognitive process during reading, he was telling me he was self-monitoring. Evidence that pointed to self-monitoring was that he had increased rereading on records of oral reading.

Self-efficacy

Bryan improved his self-efficacy by the end of the intervention study.

LH: Okay, how sure are you that you can read anything your teacher assigns?

Bryan: Sort of.

LH: You're saying sort of and you have your hand going like in the middle here. So when you're sort of sure what do things look like?

Bryan: I don't know.

LH: What kind of things get you frustrated when you are reading?

Bryan: Long (big yawn).

LH: Passages?

Bryan: Sometimes long words. (Transcript 253 p.4)

Bryan sounded much more confident than during either of the earlier interviews.

Goals and Motivation

In May 2017, Bryan had a broader goal that reading levels.

LH: Is there anything you want to do better as a reader?

Bryan: Become a super better reader.

LH: Okay, so you want to keep improving? Can you tell me about anything that needs to happen for you to do that?

Bryan: Read more this summer. (Transcript 253 p. 3)

During the final interview I again asked about how often he reads in class during a choice of activity time, Bryan said, "Zero." When I asked again about reading for fun, he replied, "Nothing." Although Bryan knew that he had improved decoding, he still did not chose to read. (Transcript 253 p. 4)

Application of New Phonemes and Strategy Knowledge

Bryan also was articulate about his learning during the study that supported better reading.

LH: What have you learned about letters of the alphabet and syllables or anything else this year?

Bryan: [The letters] *gh* is silent and there's *g* ones and there's *c* ones.

LH: Different sounds you say for those?

Bryan: (must have nodded)

LH: Uhmm. And so maybe you can't tell me right now, but you can read those kinds of words now?

Bryan: Yeah!

T: Is it easier?

Bryan: Yeah!

LH: So, do you use that knowledge in your classroom?

Bryan nodded his head back and forth in affirmation.

LH: Okay, tell me about that please.

Bryan: I use it a lot when we are doing reading and writing?

LH: What have you learned about strategies or ways that you can, things you can do if you come to something and you're stuck? What do you do when you are stuck?

Bryan: Go back, reread, slow down.

LH: Okay, When you slow down, once you slow down, what do you do in your brain or?

Bryan: Think of

LH: Think of what?

Bryan: Like syllables.

LH: Oh, you're making chunks with your hands right here. So you're saying syllables.

Bryan: Yeah.

LH: So did studying those syllables types that we have up on our chart, did that help at all?

B: Yeah. (Transcript 253 p. 1)

Learning Preference

Bryan did not have any preference for types of books that were easier for him to read. When I asked if he would prefer a story or informational books, he said that he would choose information. In analyzing data from the records of oral reading, there were no clear patterns of reading either type of text better.

Interviews Classroom Teacher Talks About Bryan

Bryan was in Ms. Lee's fourth grade classroom. As a reading intervention teacher, I had many informal conversations with Ms. Lee about Bryan's reading. In May 2017 Ms. Lee described Bryan's reading formally during an interview.

General observations of reading. When I inquired about Bryan during the final interview, Ms. Lee described Bryan's struggles throughout the school year in that directly affected his reading development.

LH: Please describe what have you observed about Bryan's reading over the year.

Ms. Lee: Bryan has taken a full circle or U-turn or something. Because at the beginning, he really struggled with the reading and he really didn't want to read very much and now and in the middle of the year, he really wasn't because his behavior was so awful.

LH: Right!

Ms. Lee: He wouldn't do anything for us.

LH: Just describe some of the behaviors that he was.

Ms. Lee: He would just be flat out defiant. He wouldn't do anything, or there were times when he would just do these attention seeking behaviors, and he would crawl around on the floor, and bark like a dog. And then he would…

LH: Meow like a cat.

Ms. Lee: Yeah, meow like a cat. He would sleep. And…

LH: Hide.

Ms. Lee: Yes, hiding. I mean a little bit of everything. Anytime there was work, he would either hide or he would go to sleep. Or just be flat out defiant.

LH: And that was a result of?

Ms. Lee: Lots of home changes.

LH: And some of it triggered past trauma.

Ms. Lee: Yeah, so mom got that settled. And ever since after winter break he's been much calmer. And so, he seems to like reading much more now. He's kind of got much more of a positive attitude. He does his work more, so I mean overall, he's had a positive change and his reading has improved just because he is actually trying and wanting to do things.

LH: His daily mood seems a lot more stable.

Ms. Lee: Yes. And he sleeps a lot less cause we also fixed medication for him too for his ADHD. So, because that was another problem that we had had. That he was not being medicated for his ADHD, and now he is.

Although this dialogue is length, it captured some of Bryan's struggles through fourth grade.

Application of decoding strategies. LH: When Bryan is reading and he comes to a word he doesn't know, what does he do?

Ms. Lee: Bryan is definitely the sound it out kid. He will sit there and he goes from sound to sound, from chuck to chunk. And he will try and work it out as long as it I mean. There are some of the words like on his last running record that he sat there for a minute. And he sounds it out. Sound it out. You know and then he would think that he got it maybe and then he would continue on and he did realize sometimes that it didn't make any sense and went back and fixed it, which was the big thing. (Ms. Lee had a lot of happy facial expressions and laughter discussing Bryan's improvement)

LH: Which is a new thing?

Ms. Lee: Yeah! That was big on a couple of words where he either just misread them the first time and had kept going. And there were a couple of times when he had gone back I know. Like now he is seeming to do a few more self-corrections.

LH: Actually rereading.

Ms. Lee: Yes. And he's obviously comprehending and understanding what he is reading cause he is knowing to go back and change it.

Ms. Lee also recognized that Bryan had improved self-monitoring because he was going back and correcting errors.

Goal and motivation. The May interview was held in the intervention room, so Ms. Lee did not have Bryan's reading goal with her. She spoke from memory.

LH: So when you set a reading goal with him, do you remember what his reading goal was?

Ms. Lee: Let me see because he started the year at a K. It was probably an O, or P.

LH: And what is he doing right now for you?

Ms. Lee: I think he was an N or an M, an N.

LH: So he didn't make it.

Ms. Lee: I don't think he quite made it. But he had that middle section of the year where he really didn't make any improvement.

According to the *BAS*1, Bryan's September 2016 reading level was J. His official District *BAS*2 May 2017 was level M. According to Ms. Lee from her November interview, Bryan's end of the year goal was level L. Bryan did exceed that goal.

I again asked about Bryan's in class motivation to read.

LH: When you have a choice of activities in the classroom, does he ever read?

Ms. Lee: No. He's not one to choose reading. Cause he's so much into the technology, which is you know the blessing and the curse of the classroom right now. Is that there is so much technology that he is going to chose the technology over that every time.

While Ms. Lee saw many positive changes in Bryan's ability to decode by the end of fourth grade, Bryan still did not chose to read in class if there was a choice to do another activity.

Chapter 5 Discussion

This study provided an in depth analysis of two striving readers responding to explicit small group intervention designed to improve reading. Findings for each striving reader were described based on data collected from observations during intervention lessons, interviews with the participants and their respective classroom teachers, and documents such as records of oral reading. This chapter presents a) major themes identified across most participants; b) implications for teachers of striving readers; c) limitations of this study; and d) questions for future research.

Major Themes

The striving readers in this study were all reading more than one grade level below fourth grade expectations. Further, they had all received some form of reading support prior to this study but continued to have challenges with reading. By looking across the participants, I found four major themes related to how these 4th grade striving readers demonstrated progress when participating in an intensive and explicit reading intervention. Specifically, these finding are that a) striving readers can make progress with intense intervention, b) reading specialists must use professional judgment to make informed decisions, c) there are degrees of explicitness needed during instruction, and d) there is a need for continued intervention by a teacher with expertise in reading. In addition to these themes, an emerging pattern affecting the intervention was found and warrants discussion.

Did Striving Readers Make Progress?

To answer the research question, "How do 4th grade striving readers demonstrate progress when participating in an intensive and explicit reading intervention?" one must first ask, "Did participants learn during the intervention?"

Schools use quantitative assessments to make instructional decisions and determine effectiveness of instruction. Quantitative assessment data were collected for this study to inform instruction and determine participant reading growth. Table 13 presents a summation of quantitative assessments for the participants. The net gains and losses for each participant are given. Gains and losses were calculated based on pre and post assessments.

Table 13

Assessments Net Gains or Losses November 2016 as Compared to May 2017

Assessment	*Scantron Performance Series*	*TOWRE*	*QPA*	Fountas & Pinnell *BAS*1 & *BAS* 2
Alex	Loss 1 percentile rank	Gain Raw score 7 more	Net gain 14 items	Level F to Level I 2 quarters growth
Aryianna	Gain10 percentile ranks	No change	Net gain 23 items	Level L to Level O 5 quarters growth
Bryan	Loss 4 percentile ranks	No change	Net gain 50 items	Level J to Level M 5 quarters growth
Jordan	Gain 4 percentile ranks	Loss Raw score 3 less	No change	Level M to Level Q 6 quarters growth

Scantron Performance Series. The participants' scores on the *Scantron Performance Series* varied. Alex and Bryan fell further behind their peers across the nation. Aryianna and Jordan made gains. The *Scantron Performance Assessment* is not designed to detect the incremental learning of striving readers. However, the results are important because it is a nationally normed test that reliably shows how students are performing across literacy competencies compared to other students.

TOWRE. The *Phonemic Decoding Efficiency* subtest of *TOWRE* (1999) is a 45 seconds test that measures automatic reading of nonsense words. Nonsense word reading is recommended when assessing grapheme-phoneme knowledge to ensure that the reader does not already have the words in memory (Spear-Swerling, 2011). According to the results Alex was the only participant who showed improvement in decoding rapidly. However, that improvement placed Alex in the less than one percentile rank for a student in fourth grade.

Striving readers are slower at reading words than proficient readers (Beck & Beck, 2013; Pressley & Allington, 2015; Roberts, Christo & Shefelbine, 2011); therefore, the *TOWRE* subtest of *Phonemic Decoding Efficiency* net gains and losses demonstrated that the striving reader participants did not gain in speed when decoding nonsense words in isolation.

Quick Phonics Assessment (QPA). The *QPA* assesses phonics knowledge by reading nonsense words and real words in sentences. Scores from the *QPA* demonstrated gradual learning for the striving readers. In contrast to the *TOWRE, QPA* tasks are untimed; therefore, participants could have segmented and blended to correctly decode these nonsense words. Some participants used segmenting and blending sparingly. Even on tasks with real words in sentences, participants made minimal improvement. Some of the *QPA* tasks not administered in November, but were given in May because the participants were ready to demonstrate learning for those grapheme-phoneme relationships. I did not include scores for *QPA* Task given only in May. Inclusion of posttest scores only would have inflated the net gains. The fact that participants read with some accuracy on *QPA* Tasks in May 2017 showed improvement because those same tasks were too hard to attempt in November 2016. These findings are consistent with those of Roberts, Christo, and Shefelbine (2011) who reported that one characteristic of dyslexic students is that they have greater difficulty reading nonsense words than real words.

Fountas and Pinnell *Benchmark Assessment System BAS*. According to Fountas and Pinnell *Benchmark Assessment System (BAS)* and *Instructional Level Expectation for Reading* chart (Fountas & Pinnell, 2015), all participants improved decoding and comprehension enough to move to more advanced reading levels. The gradient leveling system used by Fountas and Pinnell (2008) showed that each participant learned to decode words in book more accurately.

The tables for each participant in chapter four provided details about the records of oral reading taken during intervention, the types of strategies and errors observed that showed how participants learned to read. From the tables in chapter four and Table 13, one can conclude that participants learned more about grapheme-phoneme relationships and word reading strategies to decode better.

Professional Judgment Required

Professional judgment is needed to a) use assessment data for planning, b) retool intervention for growth, and c) to act on what striving readers say about their reading needs.

Assessments as starting points. Using assessment data is the starting point for the reading specialist to plan instruction. Analysis of the *Test of Word Reading Efficiency (TOWRE)* subtest *Phonemic Decoding Efficiency* and the *Quick Phonics Assessment (QPA)* tasks confirmed all participants had incomplete grapheme-phoneme understandings including some missing knowledge of letter sounds. Typically developing readers learn letter sounds in kindergarten while they are in the partial alphabetic phase of reading (Spear-Swerling, 2013). It is highly atypical to evaluate the letter sounds knowledge of fourth graders, but may be needed to understand students' abilities.

In an effort to be thorough in my research, I administered *QPA* Task 1b Initial Letter Sounds. Finding that study participants had missing letter sounds taught in kindergarten curriculum (Moats, 2010) was unexpected. In reviewing Bryan's previous performances, he had scored 100% on *QPA* Task 1b on October 7, 2014 when he was in 2nd grade. Bryan again scored 100% on February 5, 2015 when he was in 3rd grade. Evidently Bryan was not able to retain some of letter sounds even though he had previously mastered them.

According to Moats (2010) the phonics knowledge assessed on the *TOWRE* and *QPA* Tasks 2a through 9a taught in first grade. Letter names and the most common sound for each letter of the alphabet assessed on the *QPA* task 1b are Foundational Skills in kindergarten (Common Core State Standards, 2018).

All the participants were in the partial alphabetic phase of reading development characterized by incomplete letter sounds (Ehri, 2005). Participants had some ability to use

letters and sounds to read; yet they had incomplete vowel patterns knowledge, which is also a characteristic of reading in the partial alphabetic phase (Erhi, 2005).

The *QPA* Task scores clarified specific grapheme-phoneme relationships that were incomplete in participant's memory. Task 2 assesses the CVC word pattern, which is also a syllable type. Each *QPA* Task 2 through Task 8 assesses patterns that are also syllable types. Participants had not mastered complex grapheme-phoneme relationships, which is also characteristic of the partial alphabetic phase of reading development (Ehri, 2005).

The intensive, systematic, explicit instruction during the intervention was designed to facilitate participants transition to the full alphabetic phase of reading and beyond into the consolidated alphabetic phase. The consolidated alphabetic phase is characterized by having a large number of sight words, reading words in chunks, and being able to decode multisyllabic words (Ehri, 2005).

Originally I planned to begin lessons with syllable types. That plan changed when I noticed that the participants were making decoding errors on words containing the letters *c* or *g* in various positions. The study commenced with lessons on the grapheme-phonemes for the letters *g* and *c* before syllable types were introduced. This professional judgment call proved beneficial for Alex and especially for Bryan. Both participants also talked about learning the sounds for *g* during their May interviews. When looking at the letters *g* and *c* within words on the *QPA* Tasks, this learning was verified.

Retool intervention for growth. The *QPA* and *BAS* assessments have matching intervention kits with lesson plans and materials. My school district purchased those reading intervention kits that correspond to the *QPA* and the Fountas and Pinnell *BAS*. The intervention lessons from these products are grounded in reading research, and the materials are well designed; however, for the striving readers participants, neither intervention as published was enough to move them to more advanced levels reading. When this problem arises, the reading specialist must use his or her professional judgment by using reading research to create scaffolded learning activities that striving readers need in order to learn. During the intervention, materials from both companies were used in combination with teacher made materials, and some unleveled books.

Act on striving readers reports. While quantitative assessment data can inform intervention, the striving reader can likewise bring valuable information to aid the reading specialist's instructional decision making. For example, at the November 2016 *TOWRE* administration, Jordan told me that she always experienced anxiety and preforms poorly on nonsense word reading assessments. Jordan was visibly tense during the November 2016 and the May 2016 *QPA* and *TOWRE* administrations. Jordan improved one and a half years in reading accuracy and comprehension according to Fountas and Pinnell *BAS 2*, which moved her from the district category of "beginning" to "developing." Developing is described as nearing grade level. Jordan's nonsense word reading scores declined from November 2016 to May 2017. As with Jordan, researchers Roberts, Christo and Shefelbine, (2011) found that striving readers read words in meaningful context with much more accuracy than nonsense words in isolation.

Jordan's description of nonsense word reading anxiety provoked me to think more deeply during the study. I wondered if a stress response occurs when reading unknown words and this

causes a small panic response in the brain. This could explain the high number of substitutions found across participants even though phoneme knowledge had increased and strategies had been practiced and observed during records of oral reading. During the study I taught students that all words are nonsense words until we have them in our long-term memory (Transcript 235, April 10, 2017) in an effort to reduce their anxiety during decoding.

Another example occurred in November 2016 when three of the study participants asked if they could have their charts for vowel patterns, which they had used in previous grades. I brought them to the next class, as well as gave them charts for the letter *g*, letter *c*, and syllable types as they were taught. Participants used these charts daily as reference tools because, as they explained, the charts helped them learn. By acting on the striving readers request, I learned they valued these reference tools as a resource to aid their decoding. Alex was the only student who had not had this previous instruction. While I provided a set of these materials to Alex, she did not have understanding of vowel patterns that other students had by looking back at previous learning.

Ehri (2005) discussed the process of securing words in memory to be recalled as sight words in subsequent readings. By connecting the graphemes with the phonemes and the word meaning, the word is bonded in memory (Ehri, 2005). This theory of word learning confirms the finding that the grapheme-phoneme charts with pictures representing the phoneme may act as an anchor for these striving readers.

Throughout the study transcripts there are other instances when students explained what they needed to learn. Both the formal interview, such as the Burke Reading Inventory, and impromptu conversations between striving reads and the reading specialist can inform instruction to facilitate learning.

Varying Degree of Explicitness Are Required

Researchers have recommended explicit phonemic awareness instruction and word-level instruction for striving readers (Ehri & McCormick, 2013; Kapinus, 2007; Shaywitz, 2003; Spear-Swerling, 2011). Striving readers in the partial alphabetic phase of reading development in fourth grade practiced to replace incomplete grapheme-phoneme relationships. Likewise, they practiced to replace ineffective decoding strategies with more effective ones in order to advance in reading development.

Engaging 4th grade striving readers. When it became evident that the study participants did not know grapheme-phoneme relationships taught in kindergarten and first grade, I knew I had to teach these relationships. My concern was that the participants would not engage in letter sounds instruction to the degree needed to move those grapheme-phonemes to memory. I chose a path of honesty with a creative twist. One way to engage an audience in writing or speaking is to make a provocative statement. On the first day of class, I explained we would be learning information they were missing in order to read better. I held up a kindergarten alphabet chart and we briefly discussed the purpose of that chart for my kindergarten students. Next I said, "Your kindergarten teachers did not tell you the truth about the alphabet." As I had hoped, one of the students blurted loudly, "What?" I repeated my provocation. My participants wanted to know why and they were hooked. By explaining there are more sounds for letters than displayed on the kindergarten alphabet chart, that are not taught in kindergarten, the participants were curious to learn what those sounds were.

During the first week of intervention, I keep interest high by teaching about the range in typical child development for abilities such as crawling, walking, learning to talk, even biological development such as getting teeth. We also talked honestly about how hard it was for

them to learn the alphabet letter names and the sounds on the alphabet chart in kindergarten and into first grade. I assured them based on the examples of human development that having a hard time learning letters and letter sounds was not their fault. I compared their literacy development delays to a baby who learns to walk later than other babies. The facts were that while they were having trouble learning the alphabet, their peers were learning more grapheme-phonemes and how to sound out words. Their brains were not ready to learn those ideas just like a baby who learns to walk later than other babies. Finally, I communicated their brains could learn the missing information now that they were older. By dignifying the student's learning needs, the participants were receptive to lesson activities throughout the study. When teaching strategies for decoding, I again employed creativity to capture the attention of participants and convince them to engage in learning more about good reading.

Phoneme knowledge. Ehri and McCormick (2013) stressed the importance of developing phonemic awareness through activities including identifying beginning and ending sounds, stretching out sounds in words, and using mnemonics. With respect to phonics, they recommended matching words sounds to letters. While these activities are typically taught in kindergarten (Moats, 2010), Ehri and McCormick (2013) stressed the need for explicit instruction for older students who still need to learn these concepts. Shaywitz (2003) emphasized that the more severe the reading problem is, the more explicit the instruction needs to be.

The fourth grade striving readers needed multiple opportunities to match graphemes in printed words by saying the correct phoneme aloud. Ehri (2005) explained that beginning readers and older striving readers "retain in memory only partial representations of words, with

medial letters poorly bonded to pronunciations" (p. 174). This study found instances of striving readers with poorly bonded beginning or ending sounds for diagraphs and blends.

Findings that confirmed the need to replace incomplete knowledge were found in interviews, in lesson transcripts, and records of oral readings. In the November interviews, participants talked about "sounding it out" or "chunking it up" as ways to read words they did not know; however, the reality was that they had not learned enough requisite grapheme-phoneme relationships to sound out words. It follows that these incomplete understandings also inhibited accurate "chunking" of words into onsets and rimes, or syllables.

During her November interview, Jordan said, "I don't get sounding it out." She was able to recognize that she had incomplete understanding of that process. Other participants reported in their November 2016 interviews that "sounding it out" was how they decoded unknown words, yet they lacked knowledge to actually be able to accurately do so. Participants had to be taught explicitly through modeling and much practice in different ways to decode previously unknown grapheme-phoneme correspondences.

During the intervention, I employed many ways for participants to use their senses to process grapheme-phoneme relationships into memory. To learn all the phonemes for the letters *g, c*, and r-controlled vowels, I modeled segmenting and blending. Next, the participants and I practiced segmented words by counting phonemes on our fingers as modeled, counting letters in words, and then comparing the number of sounds to the number of letters (Transcript 172).

I used a sentence strip wall chart that had grapheme-phoneme cards produced by the adopted reading series company. The participants had seen these in their primary classrooms, so these provided visual references. Each card showed one grapheme-phoneme correspondence with a picture of an object that contained the target phoneme. Other visual resources used were

the “Sounds for the Letter G” and the “Sounds for the Letter C” charts, and the syllable type chart I created for participants. Laminated plain colored paper cards cut into 2 X 2 squares were used to for nonlinguistic representations of words. Students manipulated the cards to represent syllable types.

As the scaffold of activities culminated, participants practiced decoding words in isolation, and then moved to highlighting the graphemes in decodable passages. Finally, they read those phonemes in leveled books with broader vocabularies.

During decoding whole words in isolation, when participants inserted extra phonemes such as saying /gr/ instead of /g/, they tended to become cognitively stuck so that even with prompts, they would repeat the same incorrect decoding. I learned to tell the participant the correct phoneme to say and they had them say it with me. Sometimes it took several tries for them to be able to say the correct phoneme with me.

Conscious strategies use. Complete knowledge of English grapheme-phoneme relationships must be in place for accurate decoding; however, that knowledge alone is not sufficient unless strategies are effectively executed (Richardson, 2009). Striving readers use strategies when reading; however, they are ineffective ones. Participants had to be explicitly taught the steps of "sounding it out" and "chunking it up" in order to change their cognitive processes. Participants practiced these decoding strategies with words in isolation using segmentation and blending, finding syllable types to accurately divide words into syllables. After decoding words in isolation, participants read decodable passages, and finally books with broader vocabularies. When new grapheme-phonemes or a new syllable type was introduced the instructional scaffold was repeated with discussions about how to use the strategies when encountering words during reading.

The first strategy I taught was to try two different phonemes for the grapheme. For example, for the letter *c*, try /k/, then try /s/. While there were patterns to help know which sound to say, the striving readers in the study had trouble recognizing patterns. Gaskins (2008) stressed if striving readers are going to replace ineffective decoding with effective decoding, they must be explicitly taught options for phonemes with a teacher modeling how to change from being stuck to trying another sound. This type of explicit instruction fosters greater cognitive flexibility in word reading (Gaskin, 2008).

Other decoding strategies taught were a) slow down, b) stop, c) look both ways, d) chunk - one step at a time, and e) back up and try again. By practicing in these specific ways I hoped to increased cognitive flexibility in decoding words to be more consistent with the full alphabetic and consolidated alphabetic phases of word reading development.

The learning process for these striving fourth grade readers was laborious, yet the intense degree of explicitness provided the support these striving readers needed to learn.

Participants also had to be persuaded in a dignified way that using strategies was the only way to read better. Thus, I developed the presentation "Reading is Like Driving." The presentation presented in power point had slides with photographs and captions that asked for advise for the driver. By using analogies, participant likened the need to slow down to carefully decode unknown words to driving a car through switchbacks on mountain roads. The presentation helped participants to understand the need to stop and say phonemes or "sound it out" unknown words in order to the lower a crossing gate on a railroad track and a roadway intersection. They recognized the interstate highway sign about 60 miles away from our city. This over the highway frame held signs pointing out five different destinations options above the lanes about to take different directions. The participants decided the drivers needed to "look both ways," just as they needed to look all the way through words. The other strategies "chunk – one step at a time," and "back up and try again" had interesting photographs to capture the attention of these striving readers and help them make analogies to decoding strategies. This engagement technique gave our class common language to encourage use of strategic processes to improve decoding when reading passage (see Appendix B).

Need for Continued Expert Reading Intervention

The final theme across participants is the antithesis of what reading specialist hopes for each student. The quantitative data displayed in Table 13 in this chapter reveals that learning occurred in baby steps. The data presented throughout this study evidence that participants need more expert explicit instruction and practice to facilitate word bonding in memory for the grapheme-phoneme relationships so vowel consonant patterns become sight words recalled

automatically. Each of the striving fourth grade readers continued to make substitution errors through the end of the study demonstrating they still relied the prediction strategy more than the decoding knowledge and strategies, which was the content of the intervention. When readers have many words in their sight word memory, they can use cognitive processes to decode previously unread multisyllabic words when reading (Ehri, 2005). Each participant will need more expert intervention.

One of the goals of the RTI is early intervention for reading problems. Hock, Brasseur, and Deshler (2008) caution that early intervention does not solve the reading difficulties for some students. The study participants were identified early and received intervention support prior to this study, yet they will need continued explicit instruction. The participants may even need support and intervention over the course of their education (Allington, 2011; Hock, Brasseur, & Deshler, 2008; Shaywitz).

Intrusions that Affect Intervention

There are many events in schools that intrude upon intervention instructional time. Some intrusions that occurred during this study included that I was unavailable several days during the intervention time because substitute teachers were not available for absent classroom teachers. When this happened, intervention teachers substituted or classroom teachers resulting in cancellation of all intervention classes for that day. There were the typical school intrusions such as intervention being interrupted for fire and other required drills, loud crying of kindergarten and first grade students, noise from hallways, the distraction of the intervention room being share by two other teachers, students off task questions and remarks, and a host of other typical school disruptions. The reading specialist cannot control these events, but he or she provides expert

instruction around them. There is new research about an intrusion upon learning that is far more hideous than any in school interruption barring school violence.

Factors that hinder reading development. While the research question for this study focused on how striving readers learn to read, factors both inside and outside of the school that impinge learning emerged during data analysis. Research has informed practitioners that many factors are involved when students fail to develop reading at the same pace as their peers. Researchers in the fields of medicine, psychology, and education have discussed findings about how children and their learning are affected by traumatic events and the chronic stress that results.

Trauma. Trauma also called Adverse Childhood Experiences (ACE) researched by medical doctors and physiologist are now known to interfere with learning (Souers & Hall, 2016).

> Because the fetal, infant, and early childhood brain is so sensitive, chronically elevated levels of stress hormones can significantly disrupt the development of the brain in a multitude of ways, affecting learning, memory, mood, relational skills, and aspects of executive functioning (Shonkoff & Garner, 2012) – all required for success in a classroom setting" (Souers & Hall, 2016 p. 22).

Physiological changes are measurable in the vital signs children who have experienced acute or complex trauma (Perry, & Szalavitz, 2008; Souers & Hall, 2016). The stress response essential prevents learning until the stress response is resolved (Souers & Hall, 20016).

Lack of secure attachment. Pressley asserts that literacy researchers now consider birth as the beginning point of literacy development (Pressley, 2006; Pressley & Allington, 2015). Pressley summarizes research showing a relationship between secure attachment and reading development. When parents meet the infant's needs, trust builds resulting in secure attachment. Besides meeting the child's basic needs, one way that security builds between parents and a child is through early reading experiences (Pressley, 2006). Bus, van Ijzendoorn, and Pressley (2006) summarize their findings that children's attention during reading was related to the strength of the security between the mother and child. Parent and child secure attachment seems to have implications for later reading. This attachment research is another confirmation of the importance that children are emotionally nurtured in order to learn.

The four fourth grade striving readers in this study experienced some ACEs and other negative life events that can interfere with learning. In order to protect the participants from identification, these events will be listed as a compilation of the group.

Traumatic events during participant's kindergarten through third grade years.

- One participant homeless for much of one school year.
- Two participants had incarcerated fathers.
- Four participants lived in single parent homes.
- Four participants had one absentee parent.
- One participant had a grandparent that had a house fire. This home was an in home daycare for two of the participants after school care and several other children in the school.
- A classmate of the participants was kidnapped from the family home, raped, but escaped. The child was put into foster care, but a sibling remained at the school.

- A classmate of the participants died in the middle of the school year.
- A classmate of the participants had a sibling that died.
- A classmate of the participants was taken into foster care and did not return to the school.
- The school board announced that Kennedy Elementary, the school participants attended, would be closed and merged with other schools.
- A popular teacher was removed from the school and fired.
- Two months later, the principal was removed and fired midyear.
- One parent of a participant had four surgeries in two months and was extremely ill before and after the surgeries.

Traumatic events during participant's fourth grade year.

- One participant had a new stepparent.
- One participant learned his/her family was moving out of the school district.
- One participant had a minor sibling incarcerated for sexual offenses with another child.
- One participant had a parent with drug use in the home.
- Three participants experienced bullying by peers.

The participants in this study were part of the most behaviorally disruptive class that had attended Kennedy Elementary based on observations of teachers who had been at the school for 20 to 30 years.

The participants did not have histories of disruptive behaviors; however, their interactions during intervention were often affected by moodiness and an inability to focus. The bullying reported between Alex and Jordan may have hindered Alex's learning during intervention, but I

had no way to measure that impact other than to ask and keep working on the intervention classroom environment.

The matter of secure attachment raised by Pressley (2006), may have been a factor for these participants. While three of the participants had close attachments to their mothers, one participant may have reading problems linked to the mother attachment problems due to drug use by the mother and father. The father took custody of the participant by second grade. The mother was no longer involved in the child's life. While this list of adversity is daunting, the participants did learn to decode better during the study. Adversity of a traumatic nature may have contributed to the atypical reading development of these fourth grade striving readers. Some of these traumatic events caused Bryan to have behavior that disrupted his ability to participate in learning activities during the study. Ms. Lee and I had a genial relationship with Bryan's mother. The three of us communicated almost daily to keep Bryan supported.

Teachers must establish a physically and emotionally safe learning environment; however, the team building and reestablishment of respect at times takes time from academics. Research makes clear that traumatic events hinder students' learning at least temporarily, but possibly long term. The reading specialist cannot control these events, but he or she provides expert instruction and a safe learning environment.

Implications for Teachers of Striving Readers

This study looked at the reading development of fourth grade striving readers who were reading more like first graders. The implications from this study can aid teachers of students with similar reading challenges.

Assessments and Instructional Planning

When planning instruction one may need to assess previously mastered knowledge to ensure that that knowledge has been retained. Because the bonding process in memory evidently takes tremendously longer periods of time for some striving readers (Ehri, 2005), reassessing then is key to determining if students have the foundational grapheme-phoneme conceptions for more advanced instruction. Because of school accountability legislation and adoption of demanding standards, typically the assessments given by school districts and states measure the English language arts standards. What such tests cannot measure is the phonemic awareness and phonics components needed for explicit instruction. Using assessments that are diagnostic must be given in order to plan instruction that supports striving readers advancement to better reading.

Assessment data is the starting place to employ professional judgment. An expert reading teacher is needed to make decisions about materials, and lesson activities that provide the scaffold support striving readers need to improve their decoding and therefore their comprehension. As with this study, it may be necessary to use materials from more than one publisher to adequately address the real instructional needs of striving readers. Evaluating the resources to determine if the students can use most of their senses across activities is another way to facilitate their learning through professional discretion. Finally, making materials to fill in the gaps left by published materials can provide the necessary scaffold to greater reading success.

Continuity of Instruction

One of the strengths of the present study was that I had previously taught the participants since kindergarten or first grade. I recommend whenever possible that the same highly trained reading teacher continue teaching the same striving readers year to year. There are several advantages to having continuity with the students over time. First, I have extensive knowledge of their learning needs and personalities. Second, we do need much time establishing classroom

expectations and relationships. Third, I had formed healthy teacher to parent relationships through many General Education Intervention (GEI) meetings or parent teacher conferences. Therefore, these factors provided a safe and familiar context for striving readers continued learning.

Study Limitations

This study was conceived and implemented based on the diligent study and application of research literature. As with all research, this study has limitations.

First, one limitation might also be considered one of the studies strengths. A participant in case study research should be chosen because the participant called "a case" best represents the phenomena of interest (Stake, 2006; Yin, 2014). Purposive sampling was used to identify potential participants that were already identified as striving readers. These students had previously been in intervention, yet continued to need continued intervention support.

The study participants also were readily available to the researcher as a sample of convenience, were sources of rich information but not extreme cases. The participants met the criterion for inclusion in the study as a case. Using another type of sampling certainly would have brought other findings to the study.

Another limitation of this study was that both qualitative and quantitative methods were employed. The qualitative analysis provides insight into the learning of participants through the words of the participants and their teachers. By including excerpts from transcripts, the reader has insight into classroom learning interactions. Because this study included lessons from November 2016 through May 2017, much qualitative data had to be pruned within the methodology described in chapter three of this paper. Quantitative data was reported as pretest and post tests scores. No statistical analysis was conducted because the data collected was not a

large enough sample to be trustworthy. Analyzing errors statistically may have been insightful even though limited.

A third limitation is researcher bias. Qualitative research recognizes the research as the instrument of interpretation (Merriam, 2002; Stake, 2010). During data analysis codes were revised repeatedly to accurately reflect the phenomena occurring during lessons and to interpret the topics discussed during participant interviews. However, my investment in the learning of my students from kindergarten through fourth grade makes it clear that bias towards their learning would be impossible to eliminate even through careful coding and analysis.

Finally, another limitation of this study is that the observations of striving readers were in the context of the reading intervention classroom. Since students received reading instruction from their classroom teachers in small groups during guided reading, this study may have benefited from observations of instruction in that setting.

Questions for Future Research

The foundation of this study was research literature from the fields of education and psychology. As with all studies there are more questions that come from learning from data analysis and synthesis. There are three questions that could be addressed by future studies.

This study only looked at the learning of striving readers in the intervention setting. Although more complex to conduct, making observations in Tier 1, Tier 2 and Tier 3 settings could give much more information about how striving readers learn. While teachers use phrases such as “sound it out” or “chunk it up,” are they using those phrase consistently across settings? What do happens when students still cannot decode the word? Do classroom teachers and reading specialist need closer collaboration in order to fully support striving readers as they learn to decode more complex words?

Another question raised in interpretation of data was about the fact that the participants had been in intervention previously. Studies of longevity are problematic for reasons such as mobility in student populations; however, the participants in this study would have been ideal candidates for such a study. Following the learning of striving readers from kindergarten through elementary school could inform reading specialist, classroom teachers, administrators, and others who make decisions regarding instruction of striving readers.

Further research should be conducted to learn more about the cognitive process when striving readers encounter unknown words. Are there physiological reactions that cause word "blindness" from a small panic reaction, or is it just habitual? If the reading specialist stops to prompt all substituted words is that enough to diminish anxiety and replace the action of substitution with effective decoding.

References

Afflerbach, P., Pearson, P.D., & Paris, S.G. (2008). *Clarifying differences between reading skills and reading strategies. The Reading Teacher 61* (5) 364-373.

Alligator Apps. (2017). *Phonics Genius.* Apple App Store.

Allington, R.L. (2011). Research on reading/learning disability interventions. In S.J. Samuels & A.E. Farstrup (Eds.), *What research has to say about reading instruction.* (4th ed., pp. 236-265). Newark, DE: International Reading Association.

Archer, A.L. & Hughes, C.A. (2011). *Explicit instruction: Effective and efficient teaching.* New York, NY: Guilford Press.

Bear, D.R., Invernizzi, M., Templeton, S., & Johnston, F. (2008). *Word their way: word study for phonics, vocabulary, and spelling instruction.* Upper Saddle River, NJ: Pearson.

Beck, I.L., & Beck, M.E. (2013). *Making sense of phonics: The hows and whys.* (2nd ed.). New York, NY: Guilford Press.

Bloom, F. & Bloom, D. (1984). *Recipe for spelling: A comprehensive spelling program with more than 450 learning activities to sharpen spelling, language arts, and thinking skills.* New York, NY: Walker and Company.

Carrick, C. (1985). *Stay Away from Simon*. New York, NY: Houghton Mifflin.

Cartwright, K.B. (2002). Cognitive development and reading: The relation of reading-specific multiple classification skill to reading comprehension in elementary school children. *Journal of Educational Psychology 94* (1) 56-63.

Cartwright, K.B. (2008). Concluding reflections. In K.B. Cartwright (Ed). *Literacy processes: Cognitive flexibility in learning and teaching.* (pp. 359-371). New York, NY: Guilford Press.

Cartwright. K.B. (2009). The role of cognitive flexibility in reading comprehension: Past, present, and future. In S.E. Israel & G.G. Duffy (Eds.), *Handbook of research on reading comprehension.* (pp. 115-139). New York, NY: Routledge.

Cartwright, K.B., Marshall, T.R., Dandy, K.L., & Isaac, M.C. (2010). The development of graphophonological-semantic cognitive flexibility and its contribution to reading comprehension in beginning readers. *Journal of Cognitive Development, 11*(1), 61-85.

Cartwright, K.B. (2012). Insights from cognitive neuroscience: The importance of executive function for early reading development and education. *Early Education and Development 23*(1), 24-36.

Cartwright, K.B. (2015). Executive skills and reading comprehension: A guide for educators. New York, NY: Guilford Press.

Clay, M.M. (2013). *An observational survey of early literacy achievement.* (3rd ed.). New York, NY: Heinemann.

Coch, D. (2010). Constructing a reading brain. In D.A. Sousa (Ed.) *Mind, brain, & education: Neuroscience implications for the classroom* (pp. 139-161). Bloomington, IN: Solution Tree.

Coffey, A., & Atkinson, P. (1996). *Making sense of qualitative data: Complementary research strategies.* Thousand Oaks, CA: Sage Publications.

Common Core State Standard Initiative. (2016). http://www.corestandards.org/ELA-Literacy/

Crone, E.A, Ridderinkhof, K.R., Worm, M., Somsen, R.J.M., Molen, M.W. (2014). Switching between spatial stimulus-response mapping: A developmental study of cognitive flexibility. *Developmental Science* 7 (4), 443-455.

Creswell, J.W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches.* Thousand Oaks, CA: Sage Publications.

Deák, G. O. (2003). The development of cognitive flexibility and language abilities. *Advances in Child Development and Behavior, 31*, 271-327.

Deák, G.O. (2008). Foreword. In K. B. Cartwright (Ed.), *Literacy processes: Cognitive flexibility in learning and teaching* (pp. 3-18). New York, NY: Guilford Press.

Deshler, D.D., Palinscar, A.S., Biancarosa, G., & Nair, M. (2007). *Informed choices for struggling adolescent readers: A research-based guide to instructional programs and practices.* Newark, DE: International Reading Association.

Dewitz, P., Leahy, S.B., Jones, J., & Sullivan, P.M. (2010). *The essential guide to selecting and using core reading programs.* Newark, DE: The International Reading Association.

Ehri, L.C. & McCormick, S. (1998). Phases of word learning: Implications for instruction with delayed and disabled readers. *Reading & Writing Quarterly: Overcoming Learning Difficulties 14* (2), 135-163.

Ehri, L.C. (2005). Learning to read words: Theory, findings, and issues. *Scientific Studies of Reading 9* (2), 67-188.

Ehri, L.C. & McCormick, S. (2013). Phases of word learning: Implications for instruction with delayed and disabled readers. In D.E. Alvermann, N.J. Unrau, & R.B. Ruddell (Eds.), *Theoretical models and processes of reading* (6th ed., pp. 339-361). Newark DE: International Reading Association.

Every Student Succeeds Act (ESSA) U.S. Department of Education December 10, 2015.

Fountas, I. & Pinnell, G.S. (2015). *Instructional Level Expectations for Reading.* Retrieved from:

https://www.heinemann.com/fountasandpinnell/handouts/instructionallevelexpectationsforreading.pdf.

Fountas, I. & Pinnell, G.S. (2012). *Benchmark Assessment System.* Retrieved from http://www.heinemann.com/fountasandpinnell/research*BAS*.aspx.

Fountas, I. & Pinnell, G.S. (2012). *Leveled Literacy Intervention Red Lesson Systems*. New York, NY: Heinemann.

Fountas, I. & Pinnell, G.S. (2009). *Leveled Literacy Intervention Blue Lesson Systems*. New York, NY: Heinemann.

Fountas, I. & Pinnell, G.S. (2008). *Leveled Literacy Intervention Green Lesson Systems*. New York, NY: Heinemann.

Fuchs, D. & Deshler, D.D. (2007). What we need to know about responsiveness to intervention (and shouldn't be afraid to ask). *Learning Disabilities Research & Practice 22*(2), 129-136.

Fuchs, D., & Fuchs, L.S. (2006). Introduction to response to intervention: What, why, and how valid is it? *Reading Research Quarterly 41*(1), 93-99.

Gabrieli, J., Christodoulou, J.A., O'Loughlin, T. & Eddy, M.D. (2010). The reading brain. In D.A. Sousa (Ed.), *Mind, brain, & education: Neuroscience implications for the classroom* (pp. 113-138). Bloomington, IN: Solution Tree.

Gaskins, I.W. (2008). Developing cognitive flexibility in word reading among beginning and struggling readers. In K.B. Cartwright (Ed). *Literacy processes: Cognitive flexibility in learning and teaching.* (pp. 90-113). New York, NY: Guilford Press.

Hattie, J. (2012). *Visible learning for teachers: Maximizing impact on learning.* New York, NY: Routledge.

Heinemann. (2012). *Research & Data Collection: Benchmark Assessment System (BAS).*

Hock, M.F., Brausser, I.F. & Deshler, D.D. (2008). Comprehension instruction in action: The at-risk student. In C.C. Block & S.R. Parris (Eds.), *Comprehension instruction: Research-based best practices* (pp. 271-293). New York, NY: Guilford Press.

Hogan, K. & Pressley, M. (1997). *Scaffolding student learning: Instructional approaches and issues.* Northampton, MA: Brookline Books.

Homer, B.D, & Hayward, E.O. (2008). Cognitive representational development in children. In K.B. Cartwright (Ed). *Literacy processes: Cognitive flexibility in learning and teaching.* (pp. 19-41). New York, NY: Guilford Press.

Ionescu, T. (2012). Exploring the nature of cognitive flexibility. *New ideas in psychology 30* (2), 190-200.

Kapinus, B.A. (2007). The role of research in the literacy policies we have and the policies we need. In M. Pressley, A.K. Billman, K.H. Perry, K.E. Reffitt, & J.M. Reynolds (Eds.), *Shaping literacy achievement: Research we have, research we need.* New York, NY: Guilford Press.

Kagan, S. (2009). *Cooperative learning.* San Clemente, CA: Kagan Publishing & Professional Development.

Kucan, L. & Palinscar, A.S. (2011). Locating struggling readers in a reconfigured landscape: A conceptual review. In M.L. Kamil, P.D. Pearson, E.B. Moje, & P.P. Aflerbach. (Eds.). *Handbook of Reading Research: Volume 4.* New York, NY: Routledge.

Leslie, L. & Caldwell, J.S. (2017). *Qualitative Reading Inventory-6.* Boston, MA: Pearson.

Marshall, C., & Rossman, G.B. (2011) Designing Qualitative Research (5th ed.). Thousand Oaks, CA: Sage Publications.

Marzano, R.J., Pickering, D.J., & Pollock, J.E. (2001). *Classroom instruction that words: Research-based strategies for increasing student achievement.* Alexandria, VA: Association of Supervision and Curriculum Development.

Maxwell, J.A. (2005). *Qualitative Research Design: An Interactive Approach.* (2nd ed.) Thousand Oaks, CA: Sage Publications.

Merriam, S.B. & Associates. (2002). *Qualitative research in practice: Examples for discussion and analysis*. San Francisco, CA: Jossey-Bass.

Moat, L.C. (2010). Speech to print: Language essentials for teachers (2nd ed.). Baltimore, MD: Paul H. Brookes Publishing.

National Governors Association Center for Best Practice, Council of Chief State School Officers (2010). *Common Core State Standards.* Washington D.C: National Governors Association Center for Best Practice, Council of Chief State School Officers.

National Reading Panel (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction.* United States Department of Education.

O'Connor & Goodwin. (2011). Teaching older students to read. In R.E. O'Connor & P.F. Vadasy (Eds.). *Handbook of Reading Interventions* (pp. 380-411). New York, NY: Guilford Press.

Pressley, M. (2002). Metacognition and self-regulated comprehension. In S.J. Samuels & A.E. Farstrup (Eds.), *What research has to say about reading instruction.* (3rd ed., pp. 291-309). Newark, DE: International Reading Association.

Pressley, M. (2006). *Reading instruction that works: The case for balanced teaching.* (3rd ed.). New York, NY: Guilford Press.

Pressley, M. & Allington, R.L. (2015). *Reading instruction that works: The case for balanced teaching* (4th ed.). New York, NY: Guilford Press.

Richardson, J. (2009). *The next stop in guided reading: Focused assessments and targeted lessons for helping every student become a better reader.* New York, NY: Scholastic.

Roberts, Christo, Shefelbine, (2011). Word recognition. In M.L. Kamil, P.D. Pearson, E.B. Moje, & P.P. Afflerbach. (Eds.), *Handbook of Reading Research Volume IV*. (pp. 229-258). New York, NY: Routedge.

Scanlon, D.M. (2013/2014). RTI implementation survey yields both promising and troubling findings. *Reading Today, 31*(3), 6-7. DOI: 10.1598/RRQ.41.1.4

Scantron Corporation. (2017) Retrieved from: http://www.scantron.com/~/media/Scantron/Files/products/performance-series/PS%20Scores%20Quick%20Reference.ashx

Schwandt, T.A. (2007). *The sage dictionary of qualitative inquiry* (3rd ed.) Thousand Oaks, CA: Sage Publications.

Shaywitz, S. (2003). *Overcoming dyslexia: A new and complete science-based program for reading problems at any level.* New York, NY: Vintage Books.

Souers, K. & Hall, P. (2016). *Fostering resilient learners: Strategies for creating a trauma-sensitive classroom.* Alexandria, VA: ASCD.

Sousa, D.A. (2010). How science meets pedagogy. In D.A. Sousa (Ed.), *Mind, brain, & education: Neuroscience implications for the classroom* (pp. 9-24). Bloomington, IN: Solution Tree Press.

Sousa, D.A. & Tomlinson, C.A. (2011). *Differentiation and the brain: How neuroscience supports the learner-friendly classroom.* Bloomington, IN: Solution Tree.

Spear-Swerling, L. (2011). Phases in reading words and phonics intervention. In R.E. O'Connor & P.F. Vadasy (Eds.), *Handbook of Reading Interventions* (pp. 63-87). New York, NY: Guilford Press.

Spear-Swerling, L. (2013). A roadmap for understanding reading disabilities and other reading problems, redux. In D.E. Alvermann, N.J. Unrau, & R.B. Ruddell (Eds.) *Theoretical models and processes of reading.* (6th ed., pp. 412-436). Newark DE: International Reading Association.

Stake, R.E. (2006). *Multiple case study analysis.* New York, NY: Guilford Press.

Stake, R.E. (2010). *Qualitative research: Studying how things work*. New York, NY: Guilford Press.

Tomlinson, C.A., & Eidson, C.C. (2003). *Differentiation in practice: A resource guide for differentiation curriculum grades 5-9.* Alexandria, VA: Association for Supervision and Curriculum Development.

Torgesen, J.K., Wagner, R.K., & Rashotte, C.A. (1999). *Test of Word Reading Efficiency* (*TOWRE*). Austin, TX: Pro-Ed.

U.S. Department of Education, Institute for Educational Science, The Nation's Report Card, National Assessment of Education Progress. (2015). *2015 mathematics and reading: National assessment of educational progress at grades 4 and 8.* (NCES 2014–451). Retrieved from https://www.nationsreportcard.gov/reading_math_2015/#?grade=4.

U.S. Department of Education, No Child Left Behind, *Elementary and Secondary Education Act* (2001). Retrieved from http://www2.ed.gov/nclb/landing.jhtml on March 18, 2015.

U.S. Department of Education, No Child Left Behind, *Elementary and Secondary Education Act* (2012). Retrieved from http://www2.ed.gov/nclb/landing.jhtml on April 18, 2018.

Vygotsky, L. (1986). *Thought and language.* (A. Kozulin, Trans.). Cambridge, MA: MIT Press. (Original work published in 1934).

Wanzek, J., Vaughn, S., Scammacca, N.K., Metz, K., Murray, C.S., Roberts, G. & Danielson, L. (2013). *Extensive reading interventions for students with reading difficulties after grade 3. Review of Education Research, 83* (2) 163-195.

Yin, R.K. (2014). *Case study research: Design and methods* (5th ed.) Thousand Oaks, CA: Sage Publications.

Appendix A

Sounds for the Letter C Chart

Sounds for the Letter C c

Pictures under each grapheme were deleted to ensure no copyright violations.

C c _ck	C c	_c	cl	cr	ch	ch	ch
sounds like k	sounds like s followed by e, i, y	silent	sounds like cl	sounds like cr	sounds like ch	sounds like sh	silent h sounds like k
cat cob duck	cent city cycle face license	muscle scissors Scenery science	climb cling	crib cry	chicken Cheese etch batch nature	machine charade	character chorus charism Sh! Don't say the h sound.

Appendix B

Reading Is Like Driving – PowerPoint Presentation January 2, 2017

Reading Is Like Driving

4th Grade Reading Class
By Mrs. Holmgren
January 5, 2017

What advice would you give the driver of a car?

What should this bicyclist do?

What should a driver on this road do?

What should a bus driver do on this road?

Give your best advice! What should drivers do?

Slow Down

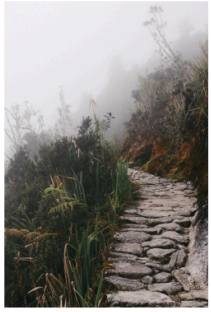
What advice can you give?

Stop

What should a driver do here?

Look Both Ways

What should a biker do?



Chunk - one step at a time

What must a driver do?

What should these drivers do?

Back Up Try Again

How is reading like driving?

Appendix C

Recruitment Script for Parent Conversation

Hello,

My name is LaVonne Holmgren, Reading Interventionist at Kennedy Elementary. I am calling to tell you about a project that I am conducting this year.

The purpose of the study is to learn how students in reading intervention classes incorporate new learning into their daily reading practices as a result of interactions between the teacher, the learning materials, his or her in class reading practice. The goal is to better understand the instruction that best assists an individual student to improve his or her reading.

All students are placed in this class because school reading scores this year indicate he or she needs additional reading instruction in decoding. Your child will be included in this class whether you decide to allow him or her participate in the research study. Some lessons will be audio and/or video recorded in order for me to make careful observations of how each student is responding to the instruction and incorporating the content of lessons into his or her reading during in class practice. Videos will not be used for any purpose other than looking at the student's reading.

The only differences in participating in the study and attending the only class are an interview and a brief test. The purpose of the interview is to determine how your child thinks about his or her reading and what he or she considers to be good reading. This interview of about 15 minutes will be given three times at the beginning, about midway, and at the end of this project.

The other difference is a test of word reading named TOWRE will be given that helps me the teacher determine what he or she already knows about decoding words.

What questions do you have about this project?

What concerns do you have about this project?

Thank you for your time today.

Appendix D

Parent Consent Form

Dear Parents/Guardians,

As your child's reading intervention teacher, I am implementing a project titled "Learning Interactions of 4th Grade Striving Readers." The information below describes the research project. I am seeking your permission to include your child in this project. Participation is voluntary. Your decision to allow your child to participate or not will not affect the services or instruction your child receives from the school or the school district. Also, you may also withdraw your child from the project at any time.

Purpose

The purpose of this project is to gain a better understanding of how 4th grade students demonstrate their learning while receiving instruction from a reading intervention teacher. As I learn more about students' reading needs and learning process, I will make changes to my class instruction. Only 4th grade students included in a reading intervention class as determined by the school and district criteria may participate in this project.

Procedure

If you agree to allow your child, _____, to participate in this project, you allow the researcher, Mrs. Holmgren, to: (First and Last name)

1. Collect reading scores from school-administered assessments and reading intervention class work.
2. Interview your child individually about his/her thoughts about reading three times per school year (fall, winter, spring). The interview will be conducted in a quiet location and will take approximately 15 minutes. The interview will be recorded so that what my child says can be accurately transcribed. Only Mrs. Holmgren and her adviser Dr. Barbara Bradley at the University of Kansas will have access to the recordings.
3. Administer the TOWRE test of word reading in the fall and in the spring. It is anticipated that this assessment will take approximately 10 minutes each time.
4. Class lessons will be video recorded because as the reading intervention teacher for four to six 4th grade students, I cannot make observational notes and affectively teach a lesson at the same time. The videos will not be available to anyone except Dr. Barbara Bradley at the University of Kansas, and the literacy coach at Kennedy Elementary. They will only view segments of videos to verify my descriptions of lesson observations are accurate.
5. Collect demographic information about your child such as age, gender, and if he/she is receiving any special services.

Benefits and Risks

By participating in this project, your child will have the opportunity to think more deeply about his/her own reading and learn more effective strategies to develop his/her reading

skills. Participating in this project is expected to help my child's learning and no risks are anticipated.

Confidentiality
Your child's name will not be used in any publication or presentation based on this project. Instead, the researcher, Mrs. Holmgren, will use a pseudonym (fake name) rather than your child's name. Any identifiable information about your child will not be shared unless (a) it is required by law or university policy, or (b) you give written permission. Only Mrs. Holmgren, the literacy coach, and Dr. Barbara Bradley will have access to data (e.g., assessments, recordings). Permission granted on this date remains in effect for five years after the conclusion of the project and then all data collected from this project will be destroyed 5 years after the conclusion of this project. By signing this form I give permission for the use and disclosure of your child's information for purposes of this project at any time in the future.

Voluntary Participation
You are not required to sign this Consent and Authorization form and you may refuse to do so without affecting my child's right to any services he/she is receiving or may receive from the school or school district, or the University of Kansas. If you refuse to sign this consent, your child cannot participate in this project but will engage is all regularly scheduled reading intervention class instruction and activities.

You may withdraw your consent for your child to participate in this project at any time. You have the right to cancel permission to use and disclose further information collected about your child, in writing, at any time, by sending your written request to: LaVonne Holmgren, Kennedy Elementary, or by email or Barbara A. Bradley, Department of Curriculum & Teaching, 316 J.R. Pearson Hall, 1122 W. Campus Road, Lawrence, KS 66045 or by email: barbarab@ku.edu

Questions about procedures should be directed to the researcher listed at the end of this consent form.

Signature
I have read this Consent and Authorization form. I have had the opportunity to ask, and I have received answers to questions I had regarding the project. I understand that if I have any additional questions about my child's rights as a research participant, I may call (785) 864-7429, write to the Human Subjects Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7568, or email irb@ku.edu.

I agree to allow my child to take part in this project as a participant. By my signature I affirm that I have received a copy of this Consent and Authorization form.

_____ _____
Print Child's Name Date of Birth

_____ _____

Parent/Guardian Signature Date

Researcher Contact Information:
LaVonne Holmgren, M.S.
Principal Investigator

Appendix E

Assent Procedures for 4th Grade Students

Learning Interactions of 4th Grade Striving Readers Holmgren 10-10-16

As your classroom teacher told you, you will be coming to my 4th grade reading class each day. Although you know me as Mrs. Holmgren the reading teacher, you may not know that I am student at the University of Kansas. I have been studying to learn as much as I can about the best ways to teach students your age how to read better. This year I am doing a research project. This project is about the processes students use to learn more about good reading while they are part of a reading class.

There are several parts to this project. You will come to class every day just like any other class in our school. If you are willing to help me with my homework, I will interview you asking you some questions about your opinions about reading. I will ask you the same questions about half way through the year, and again near the end of the year. I will be recording our conversation with a camera but if you don't want to be videotaped, I can set up the camera up so that I only hear your voice or use voice recorder only. Also, if you don't want to answer a question, you don't have to.

Another part of my research project is that I will video record some of our classes this year. The reason I will video record is so I can learn more about how the lessons help you to read better. This should feel just like part of any class in this school.

I am inviting you to help me with my research project. I have discussed all this information with your parents and they have agreed that you can participate if you want to. Our principal has given me permission to ask you to help me. If you don't want to help me, that is okay. You will still come to class, but I will not interview you or video record you reading. I will not use your tests or running records as part of the information used in my project. I will still like you just as much as I always have and I will help you learn to read in the same way as the students who decide to be in the project.

What questions do you have about this project?

Do you want to help me learn more about how students your age learn to read better?

Name of Student _____

Date of Assent _____

Appendix F

Teacher Consent Form

Dear Classroom Teacher,

As the reading intervention teacher, I am implementing a project titled "Learning Interactions of 4th Grade Striving Readers." The information below describes the research project. I am seeking your permission to include conduct three brief interviews with you of about 15 minutes about each student from your class who is participating in this project during my reading intervention class. Participation is voluntary. Your decision to participate or not will not affect the instruction your students receive during my reading intervention class. Also, you may also withdraw your permission to participate from the project at any time.

Purpose
The purpose of this project is to gain a better understanding of how 4th grade students demonstrate their learning while receiving small group reading instruction. As I learn more about students' reading needs and learning process, I will make changes to the instruction I provide during my reading intervention class.

Procedure
If I agree to participate in the project, I allow the researcher, Mrs. Holmgren, to interview me at the beginning of the project (October), midway through the project (January) and at the end of the project (March) about the students from my class who are participating in this research project. Each interview will take approximately 15 minutes and will be audio recorded. I can choose not to answer questions and asked the recording be discontinued.

Benefits and Risks
By participating in this project, I will have opportunity to think about whether or not the students participating in this project are using more effective strategies to develop their reading skills in my classroom. Participating in this project has no risks anticipated.

Confidentiality
My name will not be used in any publication or presentation based on this project. Instead, the researcher, Mrs. Holmgren, will use a pseudonym (fake name) rather than my name. Any identifiable information about me will not be shared unless (a) it is required by law or university policy, or (b) I give written permission. Only Mrs. Holmgren and Dr. Bradley will have access my interview transcript. Permission granted on this date remains in effect for five years after the conclusion of the project and then all data collected from this project will be destroyed 5 years after the conclusion of this project. By signing this form I give permission for the use and disclosure of my information for purposes of this project at any time in the future.

Voluntary Participation

I am not required to sign this Consent and Authorization form and I may refuse to do so without affecting my right to any services from the University of Kansas. If I refuse to sign this consent, I cannot participate in this project.

I may withdraw my consent to participate in this project at any time. I have the right to cancel permission to use and disclose further information collected about me, in writing, at any time, by sending my written request to: LaVonne Holmgren, Kennedy Elementary or by email or Dr. Barbara A. Bradley, Department of Curriculum & Teaching, 316 J.R. Pearson Hall, 1122 W. Campus Road, Lawrence, KS 66045 or by email: barbara@ku.edu.

Questions about procedures should be directed to the researcher listed at the end of this consent form.

Signature
I have read this Consent and Authorization form. I have had the opportunity to ask, and I have received answers to questions I had regarding the project. I understand that if I have any additional questions about my rights as a research participant, I may call (785) 864-7429, write to the Human Subjects Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7568, or email irb@ku.edu.

I agree to take part in this project as a participant. By my signature I affirm that I have received a copy of this Consent and Authorization form.

_____
Print Teacher's Name

_____ _____
Teacher's Signature Date

Researcher Contact Information:
LaVonne Holmgren, M.S.
Principal Investigator

Appendix G

Initial Student Interview Protocol

Name: Date:

1. Who is a good reader that you know? (ideas about good reading)
2. What makes him/her a good reader? (ideas about good reading)
3. Pretend that when he/she is reading, he/she comes to something she doesn't know. What do you think he/she does about it? (knowledge and strategy use)
4. Do you think you are a good reader? Why? (ideas about good reading)
5. When you are reading and you come to words you don't remember, what do you do? ("Sound it out.") How do you do that? (knowledge and strategy use)

Do you ever do anything else?

6. What type of books are difficult for you to read? (genre, general struggles)
7. What type of books are easy for you to read? (genre, general mastery)
8. What would you like to do better as a reader? (goals)
9. What do you want me to know about how you learn that might help me teach you to read better? (learning preferences)
10. What do you want your classroom teacher to know about how you learn that might help him/her teach you to read better? (learning preferences)
11. How sure are you that you can read everything your teacher's assign? (self-efficacy)
12. How sure are you that you will learn more about reading this year? (self-efficacy)
13. How often do you read at home? (motivation)
14. How often do you read for fun? (value)

Holmgren 8-24-16 Modified Burke Reading Inventory

Appendix H

Initial Teacher Interview Protocol

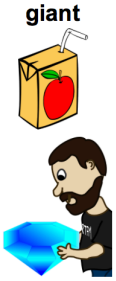
Teacher Name: Date:

1. Please describe what you have observed about _____ (student's name) reading.
2. When _____ (student) is reading and he/she comes to word she/she doesn't remember or have never seen before, what does he/she do? (knowledge and strategy use)
3. Have you set a reading goal with _____ (student)? If so, how did he or she decide on this goal?
4. What is the focus of your instruction during small group instruction when _____ (student) is in the group?
5. Do you see evidence of _____ (student) incorporating new knowledge and strategies into his or her reading?
6. What types of books are difficult for _____ (student) to read? (genre, general struggles)
7. What types of books are easy for _____ (student) to read? (genre, general mastery)
8. Does _____(student) read during when he or she has a choice of activity in the classroom?
9. What else would be important for me to know about _____ (student)'s reading performance in class?

Appendix I

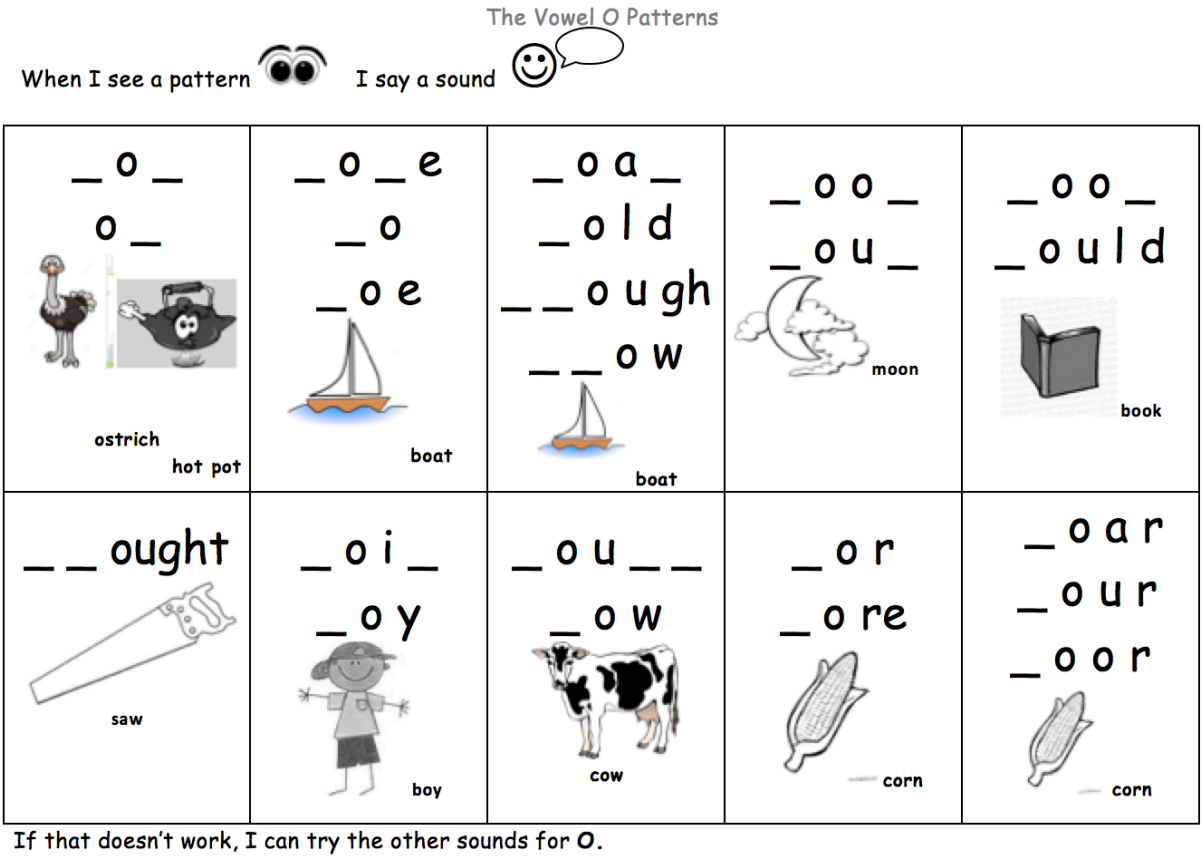
Sounds for the Letter G Chart

Sounds for the Letter G g

G g gh_	G g	_ dge _ ge	gl	gr	gn	_ igh _ign	_ ng	_gh
/g/	/j/	/j/	/gl/	/gr/	Silent g / /	Silent g / /	/ng/	/f/
goat frog ghost 	gem giant 	bridge fudge 	glasses glad 	grow grass 	gnaw Gnome 	sigh night sign 	sing song 	laugh cough rough 

Appendix J

The Vowel O Patterns Chart



Appendix K

Syllable Types Chart

6 Kinds of Syllables

Closed	Silent e	Open	Vowel Team	Consonant -**le**	Vowel + **r**
ends in a consonant C V C V C C C V C C	C V C e C C V C e C C C V C e	ends in a vowel C V C C V C V V C C V V	**two** vowels together CV V C C C V V C C C V V C C	at the end of a word C V C **le** C V - C **le** V - C **le**	**r** after a vowel ar air er ear ir ire or oar ur ure
bet not in at last blast plan	bike made choke shave stripe trade mule	so hi he she fly say see stay flea	goat meal creek blast float stain strain	cy-cle ma-ple a-ble sim-ple pim-ple fick-le pick-le nick-le	car care her hear fir fire for soar fur sure