First Grade Teachers' Support of Students with Dyslexia in Developing Foundational Literacy Skills

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Abstract

Background: Dyslexia is a disorder that is estimated to affect approximately 10% of the global population of children and is characterized by difficulties in sounding out words, reading efficiently, spelling words correctly, and comprehending the definitions of the words being read. These adverse effects of dyslexia create additional barriers and challenges to the academic success of children and consequently could impede their chances of obtaining effective educational and career opportunities. Despite the prevalence of dyslexia among children, teachers and educators often lack adequate knowledge of the required instructional skills needed to deliver instruction. **Purpose:** The purpose of this qualitative case study was to identify the strategies first grade teachers use to support students with dyslexia in acquiring early foundational literacy skills. **Research Question**: How do first grade teachers support students with dyslexia in acquiring early foundational literacy skills? **Method:** A case study research design was selected to understand the potential experiences of first grade students with dyslexia through the perceptions of teachers that support and manage their instruction. Five first grade teachers with at least one year of teaching experience and who have taught at least one student with dyslexia were selected using convenience sampling from the researcher's social/professional network. The researcher conducted one semi-structured individual interview using questions designed by the researcher and reviewed by a dyslexia specialist to gain information regarding how they incorporate early foundational literacy skills instruction to support students with dyslexia. The individual interview was followed by a member check to seek clarification, add additional information, and ensure validity and accuracy of content. Finally, participants took part in a focus group where

they answered additional questions and were encouraged to discuss their opinions and engage in discourse using each other's thoughts. Transcribed data from the interviews and the focus group data were analyzed using NVivo 12 and the six-step protocol as described by Braun to establish emerging themes found in evidence from the interviews. **Findings:** The three themes that emerged during data analysis to address the research question were: (Theme 1) student skill deficits are addressed through extra support for foundational skills, (Theme 2) teacher training deficits are addressed through experience and self-directed learning, and (Theme 3) the barrier of insufficient access to the dyslexia specialist is addressed through communication and collaboration. Overall, the findings indicated that participants provided significant extra support to their students with dyslexia, particularly through repetition and reinforcement of foundational skills during small group time. However, participants encountered barriers in supporting students with dyslexia associated with inadequate education and training in that specific area and with the limited availability of the dyslexia specialist. Participants partly overcame education and training gaps through self-directed learning and on-the-job experience, and they partly overcame support gaps through collaboration with other teachers and initiating as much contact as possible with the dyslexia specialist to seek guidance and resources. **Conclusion:** Teachers of students with dyslexia try to provide adequate instruction. However, teachers of students with dyslexia could benefit from additional support and collaboration from supporting staff members.

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Chapter I

Introduction to the Study

According to Castillo et al. (2018), disabilities that impair effective learning have been detected among approximately 35% of children placed under the Individuals with Disabilities Education Act. Specifically, these learning disabilities impair the development of skills in various areas associated with learning, such as writing, arithmetic, spelling, as well as reading, talking, and listening. In the long run, these disabilities may reduce the individuals' chances of succeeding in their academic and career endeavors. One example of a notable but ignored disability that is prevalent among children is dyslexia, a reading disorder characterized by difficulties in sounding out words, reading quickly, spelling words correctly, and comprehending the meanings portrayed by the words being read (Castillo et al., 2018).

Generally, there is a shortage of research on the epidemiology and prevalence of dyslexia in the United States. However, some evidence of research on the same subject is available in the international domain. For instance, Indrarathne (2019) reported that in every ten children, one has reading difficulties. Extrapolation of this figure based on the recent statistics of the global population that currently stands around 7.8 billion implies that approximately 700 million people have dyslexia. Given that the current population of children in the world is 25.6% of the total population (approximately two billion) and that one in every ten children has dyslexia, approximately 200 million children in the world have dyslexia. Extrapolating further to the current US population of children that makes up 18.2% of the entire population (328 million) implies that approximately 5.9 million children have dyslexia. Even though this estimation on the prevalence rate of dyslexia

may not be accurate, existing evidence indicates that up to 60% of children in the United States do not meet standards for reading proficiency (Handler, 2016). Additionally, as per the estimation conducted by Handler (2016), dyslexia could be present in up to 20% of children in the United States. Consequently, the existence of dyslexia cannot be denied, hence the need to implement measures for supporting children with this disorder to advance through their academic and careers successfully.

Children who become effective readers will have a higher likelihood of obtaining greater academic achievements and accolades that will pave the way to attending post-secondary institutions of learning, which will provide a greater chance for success in life over children who do not learn to read effectively. Even though there are many individuals who have achieved great success in their lives despite their ability to read effectively, the odds are stacked against individuals that have dyslexia. As a result, it is imperative that first grade teachers have a good understanding of how to teach early literacy skills to children with dyslexia or suspected of having dyslexia and that they feel competent in their ability to provide supports to these students in the general education classroom. The purpose of this study was to identify the strategies first grade teachers use to support students with dyslexia in acquiring early foundational literacy skills.

Personal Narrative

Growing up in rural Oklahoma, my family was faced with hardships as neither of my parents or grandparents had the opportunity to attend college due to a lack of financial resources and the need to help on the family farm. At an early age, my family instilled in me the importance of working hard to obtain a good education because they did not want me to have to endure the hardships they faced as adults. My parents knew

that if I worked hard in school while growing up, that it would pave the way for me to attend college and put my life on a different trajectory.

It was at a young age that I developed a passion for learning how to read. When my teachers would use various strategies and resources to teach my class the letters of the alphabet, letter sounds, and phonics rules, I made sure to pay close attention to what they were teaching me. As a result of my eagerness to learn and hard work, I was able to learn these early literacy skills and concepts related to reading quite quickly, even though I didn't understand that there were many skills involved in the ability to read. As my reading skills progressed, I noticed that other students in my class were struggling and not making progress. At this age, I could not put my finger on the reasons why students in my class were having a difficult time learning to read. My teachers would spend a lot of time with these students at the teacher table, reteaching skills and concepts previously taught and providing additional support. I did not fully comprehend how my classmates could be struggling, as learning to read appeared to come naturally to me.

Over time, my love for reading flourished and provided me with opportunities to escape difficult situations and circumstances in my life. When I was going through a tough time, I would grab a book and read. While reading, I would imagine myself in the role of one of the characters and leave the problems in my life behind. This was my way of coping with current stressors in my life. For students in my class that struggled to read, I had sympathy for them, as they did not have this same opportunity. I wished other students could enjoy and immerse themselves in reading for pleasure and not as something to struggle with in class as tedious work.

My passion for reading is what called me to become an elementary teacher. As an elementary teacher, I worked with many students who struggled to learn how to read. These students came from various backgrounds, including families that provided language and culturally rich experiences, as well as families that were not able to afford their children these experiences and opportunities. It is well-known that children who are provided with a variety of experiences develop language and vocabulary skills that place them at an advantage over peers who have not been exposed to similar experiences. However, each year I wondered why so many students struggled with learning the skills necessary to read effectively when some had been exposed to opportunities that would have put them at an advantage.

As a current educational diagnostician, I reflect on my experiences and practices as a teacher and how ill-prepared I was to deliver intensive interventions to struggling readers and students with dyslexia. Even though I feel that my education and training did a good job in preparing me to be a teacher, I wish that there had been more opportunities to work with real students directly to practice the skills and concepts being taught. Many of the struggling readers I taught were eventually diagnosed with dyslexia and given the number of individuals with dyslexia in the United States, I believe that more focus should have been on teaching these students the skills they need to become effective readers. As an educator, I have learned that there are many different skills that children need to learn in order to become effective readers, and I do not want children to fail to learn how to read because of their teachers' lack of preparation or understanding of how to teach early foundational literacy skills.

In reflecting on how I felt as a teacher, I have found that many other teachers face similar experiences and feelings. They often do not feel confident in their abilities to teach early literacy skills and many feel they are not doing enough for the children in their classrooms. I hope that teachers will be provided with the training necessary to be knowledgeable and feel confident in their abilities to teach early foundational literacy skills to students who are struggling to learn how to read.

Background

While dyslexia has received less attention among scholars and practitioners, especially in the United States (Handler, 2016), it has far-reaching impacts on the children's academic and career success (O'Byrne et al., 2019). Generally, dyslexia affects the academic achievement of learners in several ways (O'Byrne et al., 2019). For instance, O'Byrne et al. (2019) found that dyslexia reduces the overall self-esteem of learners with the disorder, thus reducing their capacity to interact freely with learners and instructors. Consequently, reduced self-esteem not only meant limited chances for learners to improve their learning but also reduced the overall enthusiasm for learning. Additionally, O'Byrne et al. (2019) reported a lack of academic resources and support from other learners and instructors as a major barrier to effective transition from lower grades to higher grades among learners with dyslexia. Further research indicates that reading proficiency forms a strong foundation for academic excellence among young learners (Handler, 2016).

The inability to attain reading proficiency and subsequent desirable academic outcomes has been strongly linked to phonemic awareness. According to Cheesman et al. (2009), phonemic awareness is the ability to hear, recognize, and manipulate the smallest

units of sound that help to differentiate words in terms of their meanings. As Al-Bataineh and Sims-King (2013) contended, phonemic awareness is much more than recognizing letters and their sounds as it involves an understanding that words are made up of sounds. Consequently, children with dyslexia have reduced chances of succeeding academically and career-wise.

While phonemic awareness and subsequent reading proficiency are important foundational requirements for children's academic achievement and future career success, they cannot be attained by children with dyslexia unless external support from the institution, instructors, and fellow learners is provided (Alhumsi, 2020). In connection with the findings of O'Byrne et al. (2019), one major challenge that individuals with dyslexia face is the lack of support from both instructors and fellow learners. The emergence of self-esteem issues can be directly linked to a social setting that victimizes dyslexia.

According to several researchers, teachers generally lack knowledge of dyslexia and their expected roles in assisting children with this condition to successfully learn and transition to higher grades (Dyslexia International, 2014; Washburn et al., 2011). In one study, Washburn et al. (2011) sought to examine the knowledge that elementary school teachers have about dyslexia and how the teachers perceive dyslexia. From their findings, Washburn et al. (2011) illustrated that teachers were knowledgeable about dyslexia. However, the teachers held a particular misconception about dyslexia in that dyslexia is a visual processing impairment and not a phonological processing issue. As per the misconceptions held by the teachers, it was quite evident that dyslexia is not well understood among elementary school teachers. Similar findings were echoed in the report

by Dyslexia International (2014). Dyslexia International (2014) identified three major constraints that impede contemporary education systems from successfully addressing the issue of dyslexia.

First, there is limited knowledge about dyslexia, especially among elementary school teachers. As such, dyslexia has turned out to be a condition that is taken less seriously while other disability conditions such as an intellectual disability are given priority. Additionally, Dyslexia International (2014) identified inadequacy in elementary teacher training systems where dyslexia is not adequately articulated alongside strategies and ways through which it can be addressed to reduce its overall impact on the academic performance and career success of children. Lastly, Dyslexia International (2014) identified that educational institutions had inadequate resources directed towards supporting children with dyslexia, which hindered reading proficiency and subsequent academic achievement. In a more recent study, Sümer Dodur and Altindağ Kumaş (2020) sought to examine the level of knowledge of teachers on the subject of dyslexia. In their findings, Sümer Dodur and Altindağ Kumaş (2020) reported limited knowledge among Turkish elementary school teachers. Additionally, as per the findings of Sümer Dodur and Altindağ Kumaş (2020), teachers reported that they were not ready to teach learners with reading difficulties. This recent study, though conducted in a different geographical region, indicated that teachers are not aware of dyslexia. As such, they cannot detect any cases of dyslexia, which are prevalent in nearly all countries. Instead, teachers are more likely to hold negative attitudes towards children with dyslexia.

In another study, Indrarathne (2019) sought to explore the impact of infusing dyslexia training programs with teachers' attitudes towards dyslexia in Sri Lanka.

Specifically, the program aimed at informing teachers about dyslexia and its estimated prevalence of 10% in the global population. Prior to and after the training, the teachers were surveyed on their willingness to accommodate children with reading difficulties in their classes. Findings revealed teachers were more willing to accommodate children with reading difficulties after the intervention program than before. As such, Indrarathne (2019) concluded that training and informing teachers about dyslexia in children can significantly change their negative attitude towards children with the disorder, hence making them more accommodative of such children. The findings also confirmed that many teachers are unaware of the existence of the condition known as dyslexia, but informing them about it is likely to improve their capacity to accommodate the individuals that suffer from dyslexia.

In another study, Senarath (2016) sought to examine the differences in special, primary, and secondary teachers' knowledge of dyslexia and its impacts on learners. In their findings, Senarath (2016) found significant differences among the three groups of teachers. Special education teachers had the highest level of knowledge about dyslexia (98%), followed by primary school teachers (32%), and lastly secondary school teachers (1%). These findings indicate that special education training focuses more on dyslexia than primary and secondary teacher training. As such, infusion of dyslexia training in all realms of teaching should significantly increase teachers' awareness about the condition and its impacts.

Statement of the Problem

The main problem of focus in this study is that despite its high prevalence and associated adverse effects on the academic and future career success of children, dyslexia

has received little attention among educators in the United States. Specifically, dyslexia is estimated to affect approximately 10% of the global population of children (Indrarathne, 2019). Additionally, dyslexia is associated with reading difficulties such that learners with the condition are more predisposed to lower academic achievement and limited chances of career success (O'Byrne et al., 2019). Despite the prevalence and associated impacts of the condition, there is overwhelming evidence that teachers have limited knowledge of the condition, as well as how to address it. Additionally, educators at the policy level, as well as classroom teachers, consider dyslexia as a less serious concern, thus jeopardizing the academic and career success of children. Much of the existing literature mainly focuses on the degree to which teachers are knowledgeable about dyslexia with limited mention of strategies to address the condition. While a fewer number of researchers have suggested strategies to address the issue of dyslexia and promote phonemic awareness and other foundational literacy skills, limited knowledge about the condition and its subsequent trivialization implies most teachers are still unaware of the condition and how to tackle it. While teachers generally have limited or no knowledge about dyslexia, first grade teachers tend to be more knowledgeable about the condition as compared to other types of educators. However, there is limited research on how first grade teachers perceive dyslexia and how the condition can be addressed effectively. An accurate depiction of these teachers' understanding of how to teach early foundational literacy skills and support students with dyslexia offers valuable information that can be used to determine future professional development opportunities and create awareness.

Purpose of the Study

The purpose of this qualitative case study is to identify the strategies first grade teachers use to support students with dyslexia in acquiring early foundational literacy skills. Additionally, it is important to examine the importance of teacher preparation and culturally responsive pedagogy through this study as it relates to meeting the needs of students with dyslexia to ensure that these students are being adequately served. To achieve the purpose of this study, the researcher will conduct a qualitative case study. Specifically, a qualitative study entails the collection and analysis of non-numerical data such as text. A qualitative approach is most appropriate in situations where researchers seek to examine particular issues or phenomena more profoundly, drawing meaning from the non-numerical data gathered. In the current study, a qualitative approach is deemed appropriate since the researcher seeks to establish strategies that first grade teachers use to support children with dyslexia. A quantitative approach was rejected due to the absence of variables that could be clearly defined for data collection purposes.

There are different types of qualitative designs: qualitative case study, ethnography, phenomenology, and grounded theory. In this study, the researcher will use a case study design to identify the strategies first grade teachers use to support students with dyslexia in acquiring early foundational literacy skills.

Significance of the Study

The findings of the current study are important to both scholars and practitioners in education. Most importantly, the findings of this study will help towards developing a solution to the persistent problem of dyslexia among children in the United States. Generally, dyslexia in children limits their reading proficiency, hence significantly

reducing their chances of succeeding academically and career-wise later in life. The findings of this study will provide evidence from first grade teachers on how children with dyslexia can be supported in developing early foundational literacy skills to ensure they attain academic and career-goal achievement. Hopefully, the strategies revealed by the first grade teachers in this study can be applied by other elementary teachers. Additionally, findings of this study will shed more light on the issue of dyslexia and compel educators at the policy-making level to invest more in strategies to support children with dyslexia that will allow them to attain reading proficiency. For instance, policymakers may use the strategies found in the current study to re-design training programs for elementary teachers so that knowledge about dyslexia is incorporated. Apart from its importance at the policy level, the current study has important implications for future researchers. The current study will lay the groundwork for future researchers to explore the issue of dyslexia more profoundly. Moreover, there is an urgency to equip teachers with the knowledge and understanding of the supports students with dyslexia need, but close attention should be paid to make sure that supports being used are culturally responsive.

Conceptual Framework

This study is centered around two teaching and learning theories. The first is Vygotsky's theory of the Zone of Proximal Development (ZPD), which refers to the distance between what a student can do independently and what he or she can do with help from someone that is knowledgeable and competent (Vygotsky, 1978). For students who are struggling to learn how to read due to dyslexia, it is critical for them to receive instruction by knowledgeable and capable teachers. When teachers can provide

appropriate supports and scaffold student learning, students are able to work within their ZPD to develop their potential. Additionally, this study also focuses through the lens of sensory theory, which states that learning occurs when the senses are stimulated (Laird, 1985). For students with dyslexia, multisensory teaching has proven to be an effective approach to enhance memory and improve reading skills. A study that examined the efficacy of the multisensory approach to improve reading skills of first grade students found that significant improvements were made in phonological awareness, decoding, and reading comprehension (Joshi et al., 2002).

Research Question

Given the purpose and significance, this study will address the following research question: How do first grade teachers support students with dyslexia in acquiring early foundational literacy skills?

Definition of Terms

"*Dyslexia* is a specific learning disability that is neurobiological in origin" (International Dyslexia Association, 2019, p. 2).

Literacy refers to the ability to read and write.

Phonemic Awareness refers to the ability to recognize and manipulate the individual speech sounds/phonemes in words that are spoken (Moats, 2020).

Phonics is an instructional method that is used to teach reading and writing by developing an understanding of the relationship between letters and their sounds. Readers use this method to decode unfamiliar words.

Related Literacy Skills refers to skills needed to be an effective reader and writer. These skills include comprehension of text, vocabulary, spelling, written expression, the rate at which a person reads, and how fluent their reading is.

Summary

Research is needed to influence the practices of teaching reading to ensure that all students are receiving appropriate instructional opportunities based on their individual needs. Chapter One presented an introduction of the need to address the supports students with dyslexia require in the general education setting. In the following chapter, the review of the literature will provide a foundational understanding of how this issue has continued to plague the education system for decades.

Chapter II

Review of Literature

Learning how to read is one of the most significant skills that a child should learn when entering school and is often considered a hallmark to success as a student. Teaching children how to read and developing their literacy skills to become successful readers is an issue that has been researched and discussed for decades within the education community. Furthermore, there has been a significant amount of research completed on the neuroscience of reading. This has led to a better understanding of how children learn to read.

Research has indicated that phonemic awareness (awareness that spoken words are made up of individual speech sounds) and phonics related skills instruction are critical components of literacy development that should be taught in every reading classroom. Snider (1997) conducted two longitudinal studies that produced findings supporting prior research that examined the relationship between phonemic awareness and reading achievement.

The widely known link between phonemic awareness and phonics related skills and the impact each one has on developing good readers indicates that reading teachers should be providing direct instruction to children in these areas. The problem therein lies with the knowledge or perceived knowledge teachers have regarding phonemic awareness and phonics related skills. Many teachers lack the knowledge and skills required to explicitly teach components of phonemic awareness and phonics that support literacy development in children. Moats (2009) has expressed concern with the preparation and professional development of teachers responsible for preventing and

remediating reading and spelling disabilities, as she has found many teachers that feel unprepared to meet the needs of students experiencing difficulties with learning how to read. The concern that teachers are unprepared to teach reading or are misinformed about literacy development in children is alarming.

The purpose of this literature review was to examine research and literature concerning the neuroscience of reading, reading instruction that focuses on teaching phonics and phonemic awareness skills to beginning readers, and teachers' knowledge and perceptions related to phonemic awareness and phonics related skills instruction to determine the correlation, if any, related to literacy development and reading achievement. Therefore, chapter two will discuss in-depth the theoretical framework guiding this study in addition to reviewing studies on the history of the neuroscience of reading. Subsequently, the chapter will examine both the federal and state mandates on dyslexia and review studies on dyslexia and phonemic awareness used to combat the effects of dyslexia in children. Moreover, the chapter will also discuss how phonemic awareness is and has been applied to enhance learning in children.

Theoretical Framework

The theoretical framework underpinning the current study is based on two key theories. The first theory is Vygotsky's (1978) theory of the Zone of Proximal Development (ZPD) while the second one is Laird's (1985) sensory theory. Basically, Vygotsky's (1978) ZPD theory holds that a difference normally exists between what a learner can do on his or her own and what she or he cannot do alone, but rather with the assistance of a more knowledgeable, competent, and capable person. Vygotsky (1978) referred to this difference as the ZPD. The assistance that the learner receives depends on

three key factors. The first factor is the presence of a person with higher knowledge, competence, and capability than the learner. The individual acts as the conduit through which knowledge and skill are transferred to the learner. Second, the learner must establish stronger social interactions with this knowledgeable individual so that they can closely observe and put into practice the skills showcased by the experienced individual. Lastly, the more competent teacher must be willing to provide support to the learner through the ZPD. As far as current research is concerned, the third factor is the most important in addressing dyslexia among children. Essentially, children with dyslexia require teachers who are knowledgeable about the condition and can understand the children's struggles in attaining reading proficiency. When teachers can provide appropriate supports and scaffold student learning, students are able to work within their ZPD to develop their potential.

Vygotsky's (1978) theory of ZPD has been applied in many studies. For instance, Roth (2020) applied the theory to investigate how mathematics teachers support students to attain competency in the subject. Additionally, Roth (2020) applied the theory to determine students' roles in establishing good social relations with the mathematics instructors to increase their chances of succeeding in the subject. Schoenherr (2020) applied the theory of ZPD to the contemporary professional practice by investigating how new employees can be effectively supported to attain professional competence like their mentors. Lastly, Kapon (2016) used the theory of ZPD to evaluate how physics students attained competence in doing empirical research. Generally, the theory of ZPD has found numerous applications, including the current study where it will be used to evaluate how children with dyslexia can be supported to attain reading proficiency.

Additionally, this study also focuses through the lens of sensory theory which states that learning occurs when the senses are stimulated (Laird, 1985). For students with dyslexia, multisensory teaching has proven to be an effective approach to enhance memory and improve reading skills. A study that examined the efficacy of the multisensory approach to improve reading skills of first grade students found that significant improvements were made in phonological awareness, decoding, and reading comprehension (Joshi et al., 2002). Felton and Pepper (1995) and Snider (1997) found that phonemic awareness skills in children are the most predictive in identifying children at risk for reading difficulties. Once children have been identified at risk, they should then be provided with explicit instruction to prevent and remediate deficits in reading by highly trained teachers. Felton and Pepper (1995) indicated that phonological awareness instruction is highly effective when children are taught the link between sounds of language and the letters that represent the sounds.

History of the Neuroscience of Reading

Since the discovery of imaging techniques, research on neuroscience in reading and of reading has gained significant attention among scientists (Poldrack & Sandak, 2004). Just like science transformed the health sector, neuroscientists have predicted that advancements in technology and more research in science are likely to result in massive transformations in the educational sector. A report by the Royal Society on Neuroscience showed that education is all about enhancing learning while neuroscience works to understand the mental processes involved in learning. According to existing neuroscience research, learning outcomes are not only dependent on environmental factors, but biological factors play a significant role in accounting for the differences in learning

ability between individuals. Taking into consideration the impacts of biological factors in learning, The Royal Society (2011) reported that insights in biological factors has led to the understanding of learning difficulties such as dyscalculia and dyslexia. The current study examines learning difficulties in children with dyslexia which can be elaborated by understanding the neuroscience of reading in subsequent studies. For instance, the report indicated that the differences in learning experienced by different people are associated strongly with the brain. Additionally, the findings by the Royal Society (2011) showed that the ability to learn varies widely among individuals. Specifically, the authors noted that while some people were quick to learn, some struggled to learn in virtually all domains. In contrast, others had difficulties in specific areas such as language, numeracy, and literacy.

Gough and Hillinger (1980) view reading as an unnatural act. Learning to read is vastly different from the ability to speak and listen, which are considered natural acts. It is widely known that speech was developed long before written language was invented and is universally accepted as a reason why the human brain is not able to process the signs and symbols that represent language innately. According to Moats (2020), the human brain is not fully adapted for reading and writing. Children must receive direct instruction for years to learn that letters, numbers, and symbols represent their language and that they are required to decipher the code to read the text and construct meaning. This act requires multiple cognitive processes in order to be an effective reader. McGeown et al. (2011) found that the form of reading instruction provided to children affected cognitive skills as well as skills related to reading.

While researchers such as D'Mello and Gabrieli (2018) and Shaywitz and Shaywitz (2007) agree with Poldrack and Sandak (2004) that all the reading happens in the brain, they also concur that how that happens has been an area of scientific interest for a century now. Dating back to the half of the 20th century, Poldrack and Sandak (2004) reported that scientific understanding of the neural basis of reading emanated entirely from the study on patients with focal brain lesions. As cited by Poldrack and Sandak (2004), Dejerine (1891) demonstrated that damage to the occipital cortex and splenium of the corpus callosum of the brain resulted to a person developing alexia without agraphia. Dejerine (1891) also showed that lesions to the inferior parietal lobe resulted in alexia with agraphia. The findings by Dejerine (1891) that different parts of the brain may affect individual reading abilities separately presented opportunities for further learning. Poldrack and Sandak (2004) report that much of the work since Dejerine (1891) has focused on syndromes of acquired phonological, surface, and deep dyslexia. Although the application of neuroscience in education began more than a century ago (Ansari et al., 2011), technological advancements have made the field of neuroeducation an emerging field in scientific research. According to Ansari et al. (2011), neuroeducation tends to bridge the gap between different neuroscience fields such as cognitive neuroscience, developmental cognitive neuroscience and educational technology, psychology, and theory. Gabrieli (2009) and McCandliss and Noble (2003) studied how neural mechanisms of reading, attention, numeracy, and reading difficulties associate with dyslexia, ADHD, and dyscalculia related to education. McCandliss and Noble (2003) showed that different areas in the brain are associated with phonological processing that influence the specialization of the visual areas that are critical in the rapid

processing of written words. Goswami (2004) underpinned that neuroeducation has played a vital role in helping educators and neuroscientists understand the complexities associated with thinking, reasoning, language, speech, and reading.

Imaging of the brain has shown stronger activation patterns in children who are considered good readers as opposed to children who are considered struggling readers (Shaywitz & Shaywitz, 2007). “Reading is a complex behavior that necessitates successful development of multiple brain structures and functions associated with language, vision, attention, and thought” (D’Mello & Gabrieli, 2018). According to Feifer and Della Toffalo (2007), struggling readers under-activate posterior areas of the left hemisphere of the brain and activate frontal areas whereas good readers trigger posterior sections of the left hemisphere. When struggling readers activate the frontal lobes, it affects their ability to read fluently and comprehend the text effectively. All regions of the left hemisphere have to work together to support effective reading as each area is responsible for different components of reading (D’Mello & Gabrieli, 2018). These components include comprehension and word identification, among others.

Federal and State Mandates

Scholars have defined dyslexia as a condition where children experience learning difficulties, especially in regard to reading and writing. As Hulme and Snowling (2016) assert, dyslexia affects how the brain processes information, including words and graphic symbols. As much as it has been characterized as a neurological condition, it is not in any way related to intelligence; however, it affects recognition of words, brain ability to match letters to sounds, and spelling ability (Hulme & Snowling, 2016). By recognizing the effects dyslexia has on children’s ability to master phonemes, the federal government

and state governments have passed and instituted laws aimed at identifying and helping children with dyslexia as early as possible.

According to Hulme and Snowling (2016), the United States in 2018 experienced a tremendous change in federal and state constitutional history with over 33 legislative bills related to dyslexia. To begin with, close to 47 states in the United States have passed laws to help children and students with dyslexia. For instance, in 2019, Alabama passed into law the Alabama Literacy Act while Alaska passed the Legislative Task Force on Reading Proficiency and Dyslexia. In 2019, Arkansas revised its 2015 and 2017 laws, including the Instruction to the Right to Read Act and the Required Dyslexia Services for Incarcerated Youth and Adults (Morin, 2019).

To address the challenges students with disabilities face in acquiring education in public institutions, the United States Congress in 1975 passed the Individuals with Disability Education Act (IDEA) (Morin, 2019). IDEA provided a guideline on how disabled students were to be integrated into the general classroom and how the curriculum would be tailored to provide for Free Appropriate Public Education and Individualized Education Program (Zirkel, 2020). However, according to Morin (2019), dyslexia affects children differently, and as such, its laws tend to be much deeper than IDEA laws. In addition to the federal law guidelines, states have also passed laws with each school accommodating dyslexic children differently. Scholars have identified that dyslexia acts tend to provide schools with how to define dyslexia and identify other conditions that may affect and interfere with learning.

Additionally, the laws provide requirements to screen and identify children with dyslexia as early as possible by providing schools in different states with the procedures

for screening and intervening, developing guidelines for training, developing and equipping professional teachers with the current knowledge to aid their understanding, teaching, and handling of students with dyslexia (Morin, 2019). The laws provide funding for students identified with dyslexia, and consequently, introductory courses on dyslexia in teacher training programs and early intervention, screening, and accommodation for dyslexic children were provided. As much as both federal and local state governments have passed laws to help dyslexic students, research by Youman and Mather (2012) has found otherwise. According to Hanford (2020), even though more than 33 states have passed dyslexia related laws, funding, accountability, and a limited number of trained professionals are still a problem.

As Hanford (2020) discovered, once the state passed a dyslexia related law, it was up to the agencies that dealt with education to ensure how it would be implemented, even though most of them were confused with the definition. Additionally, many laws in different states only define dyslexia but do not support and provide teachers with the needed training to handle students with dyslexia (Hanford, 2020). Accordingly, Youman and Mather (2012) also found that teachers did not concentrate on teaching children how to read, and many children missed the basics of phonemic awareness (Hulme & Snowling, 2016).

Dyslexia

Much of the brain research related to reading has specifically centered on dyslexia, which is a specific learning disability that interferes with the ability to read, write, and spell despite receiving appropriate instructional opportunities (Castillo et al., 2018). Generally, dyslexia has far-reaching impacts on the academic achievement of

children and subsequent career success (O'Byrne et al., 2019). In their study, O'Byrne et al. (2019) found that prolonged dyslexia in children was likely to cause a deterioration in the learners' self-esteem, thus making them less interactive in the learning environment. According to O'Byrne et al. (2019), the inability of the learners to interact freely implied reduced enthusiasm in learning and reduced capacity to seek clarification from their instructors. Even though the condition has received little attention among scholars, its prevalence rate is quite high. According to Indrarathne (2019), at least one in every ten children has some learning difficulties which could be characterized as having dyslexia.

Dyslexia is directly related to phonemic and phonological awareness, which influences the phonics instruction of teachers that are responsible for the learning of students with dyslexia (Castillo et al., 2018). According to Cheesman et al. (2009), phonemic awareness refers to the ability to hear, recognize, and manipulate the smallest units of sound that, in turn, help in creating differences between words in terms of their meanings. Since dyslexia generally involves learning difficulties, people who are affected by this condition may also find it difficult differentiating between different sounds and the subsequent meanings conveyed by the resulting words or phrases (Al-Bataineh & Sims-King, 2013). Consequently, Al-Bataineh and Sims-King (2013) argued that the learning difficulties that characterize dyslexia can better be explained in the individuals' inability to process phonemes correctly and decode the meanings conveyed by resulting words. As Al-Bataineh and Sims-King (2013) contended, phonemic awareness is much more than recognizing letters and their sounds as it involves an understanding that words are made up of sounds. Consequently, children with dyslexia have reduced chances of succeeding academically and career-wise.

While dyslexia has a high prevalence rate of 10%, past studies have indicated that many teachers have limited knowledge about the existence of such a condition (Dyslexia International, 2014; Washburn et al., 2011). Washburn et al. (2011) conducted a study to examine the degree to which elementary school teachers are knowledgeable about dyslexia and its impact on learning effectiveness. In their findings, Washburn reported that elementary school teachers knew about dyslexia but held wrong conceptualizations of how it came about. According to Washburn et al. (2011), the teachers strongly believed that dyslexia came about as a result of the difficulty in children to process visual signals. However, from standard academic literature on dyslexia (Dyslexia International, 2014; Washburn et al., 2011), dyslexia is a phonological processing disorder rather than a visual processing issue. Apart from the wrong conceptualizations held by teachers, existing literature illustrates that the high prevalence of dyslexia can be attributed to a lack of adequate resources disseminated to schools towards supporting children with this condition (Dyslexia International, 2014).

Phonological Awareness

Phonological awareness is described as an individual's ability to recognize the structure of sounds in terms of onsets, rimes, and syllables (Lederberg et al., 2019). An onset is the initial phonological unit of a syllable, while a rime is the string of vowels and final consonants that make up the rest of the word. A syllable, on the contrary, is a section of a word containing only a single vowel sound.

According to Patscheke et al. (2018), phonological awareness is a coherent and continued development of skills necessary for successful reading and spelling. Developing and engaging phonological awareness ensures the success of reading and

spelling, but it is essential to learn how to decode and spell written/printed words (Patscheke et al., 2018). In essence, Lederberg et al. (2019) asserted phonological awareness was critical in kindergarten, pre-schools, and first grade in the sense that it created a firm reading and spelling foundation for children in their early years of education.

According to Knoop-van Campen et al. (2018), phonological awareness creates a firm reading foundation for preschoolers and kindergarteners. Agreeing with Knoop-van Campen et al. (2018), Tibi and Kirby (2017) posited that phonological awareness in the early years of learning eliminated reading problems that might occur in future students. As described earlier, phonological awareness is essential in helping students read, spell, and decode printed words. While students categorized as slow learners or diagnosed with dyslexia may have problems decoding and reading sounds even at older ages, Lederberg et al. (2019) asserted that enrolling them in phonemic and phonics instruction classes helped solve the problem of segmenting sentences into words. Similarly, phonological awareness encompasses phonemic awareness. Phonemic awareness will be discussed in-depth in the following theme of this chapter. However, to note, phonemic awareness is described as the ability to identify and work with individual sounds in spoken words. The significance of phonemic awareness in reading is that it equips individuals with the ability to blend sounds into words, delete and play with phonemes (sounds) in words, and segment words into sounds for easy reading and mastery.

Phonemic Awareness

A large percentage of the literature indicates that children with phonemic awareness skills are at an advantage when learning to read. Phonemic awareness is the

ability to identify, manipulate, and blend phonemes, which are the individual speech sounds in spoken words. Phonemic awareness is frequently confused with phonological awareness and phonics (Cheesman et al., 2009). In the word cat, the /c/ is the phoneme. Al-Bataineh and Sims-King (2013) pointed out that phonemic awareness is much more than recognizing letters and their sounds as it involves an understanding that words are made up of sounds.

For years, research has indicated that phonemic awareness is a strong predictor of reading success and achievement. It is also considered a critical skill for children to develop in order to learn to read. Furthermore, an understanding of phonemic awareness is needed for phonics instruction to be effective. Children possessing phonemic awareness skills are likely to learn to read more easily and have increased ability to decode unknown words more accurately than children who lack those skills (Shankweiler & Fowler, 2004). Children that begin school possessing little phonemic awareness skills and that are not provided with intervention will likely need Reading Recovery remediation (Castle et al., 2009).

Children that lack good phonemic awareness skills will have greater difficulty learning how to read and using the alphabetic principle. Shankweiler and Fowler (2004) identified the phoneme as the most critical piece for understanding and learning to use the alphabetic principle, where this awareness serves as a key to decoding the alphabetic system. It would be incredibly challenging for a child to understand the alphabetic principle if he or she does not realize that spoken words can be broken down into phonemic segments (Scarborough et al., 1998). To prevent large gaps in reading abilities, interventions are needed when children show initial signs of struggling in phonemic

awareness and phonics (Al-Bataineh & Sims-King, 2013). Research has indicated that children receiving additional training in phonemic awareness may have a better outlook (Castle et al., 2009). If interventions are not provided to children showing difficulties with phonemic awareness deficits early on, it will be difficult for these children to keep up with their peers in their reading abilities.

To assess and build phonemic awareness skills in children, there are several tasks that can be utilized in a variety of educational settings, as well as the use of multiple modalities (i.e. kinesthetic, tactile, visual). The list of commonly used tasks includes identifying phonemes, categorizing phonemes, isolating phonemes, deleting phonemes, blending phonemes, and segmenting phonemes (National Reading Panel, 2000). By providing opportunities for children to practice manipulating phonemes using the aforementioned tasks, they will be able to develop an awareness of phonemes in spoken words. The National Reading Panel (2000) found that small group instruction yields greater effect sizes than did classroom-based or individual instruction. This indicates that teachers should be providing explicit instruction to develop phonemic awareness skills in a small group setting to be effective.

Phonemic awareness instruction is a deliberate and purposeful study of sounds to strengthen students' reading capabilities and a strong predictor of reading success and achievement. Therefore, an understanding of phonemic awareness is needed for phonics instruction to be effective (Shankweiler & Fowler, 2004). Following the significance of phonemic awareness in student learning and reading skills, the state of Texas passed a historical bill in 2019 dubbed -Texas House Bill 3. The Texas House Bill (2019) on education reform did not only bring changes to educational funding, but also highlight on

several initiatives to improve student outcomes. Some of the initiatives included increased emphasis on phonics instruction, increased support for students with dyslexia and intensified personalized interventions for students with special educational needs. As a result of the bill, the Texas Education Agency (2020) has published a guideline for teachers and schools on phonics and phonemic awareness. According to the agency, the Texas reading initiative of 1996 was initiated by G.W. Bush, who was the then governor of Texas. G.W. Bush challenged all Texans to focus on the basic goal of education which was teaching all children to read.

Phonemic Awareness and Ability to Learn and Use of Alphabetic Code

According to Suggate (2014), the phonological processor in the human brain usually works unconsciously when a person is speaking or listening. The processor is designed to aid in extracting the meanings of what is being said and not to extract individual sounds. The phonological processor aids in understanding the essence of what is being said. As it has been noted, phonemic awareness skills are critical for learning to read any alphabetic writing system in addition to instilling the know-how of reading other alphabetic systems such as Japanese or Chinese (Patscheke et al., 2018).

As established by Antonacci and O'Callaghan (2012), phonemic awareness is critical in reading and understanding the alphabetic system. For instance, English utilizes an alphabetic writing system whereby letters represent an individual sound in a single form or combination. As Yoshikawa and Yamashita (2014) reported that individuals who could split a word into its constituent sounds, recognize their identity, and then join the sounds to form the original word had the foundations of reading and understanding the alphabetic rule. On the other hand, students who did not know or understand phonemes

were perplexed by the alphabetic print system and its representation of spoken words (Suggate, 2014).

According to Yoshikawa and Yamashita (2014), the mystification of these students is due to the lack of knowledge in phonemic awareness because they may not even understand what sound is. Although they can hear and read alphabetical letters, they may lack the idea or have little knowledge of what they represent. For instance, a study conducted by Dessemontet et al. (2017) found that students who lacked phonemic awareness when asked to identify the first sound of the word /dog/ said /whoo-whoo/ rather than identifying /d/. It is worth noting that the success of students' ability to read and use the alphabetic writing system lies in their understanding of phonemes, separation of individual phonemes, and they are joining to form a word.

Phonemic Awareness and Reading and Spelling

A review of existing literature explicitly shows that programs that teach phonological awareness have significantly reduced early reading difficulties among children or have been found to amend reading difficulties (Pfost, 2015). Pfost (2015) further stated that intensive phonemic training programs on students below average in reading skills improved their abilities to mid-range or average range. It is therefore clear that failure to intervene and train these students on phonological knowledge will only prolong their reading deficiencies.

Suggate (2014) claims that the individual differences experienced in phonemic awareness may relate to different reading variations for several reasons. First, a child's ability to better understand phonological awareness, the more comfortable and fast the child will learn to spell, read, and write. Secondly, Pfost (2015) reported that a child's or

student's ability to read instructions or even a limited knowledge in phoneme-grapheme compatibility promoted phonemic awareness. Through constant interaction and encounter with letters and text, students can gain considerable experience and insight into the structure of sounds, which in overall promotes their phonemic awareness. Thirdly, scholars have also reported that there might be a bi-directional influence between reading and phonemic awareness (Suggate, 2014). Suggate (2014) further notes that children may become aware of syllabic and rhyme structures of sounds in the oral language before commencing formal education. This early awareness and knowledge promote rapid development in reading, and their sensitivity to phonemes is heightened.

Enhancement of Phonemic Awareness Among Children

From the above discussion, it is clear that phonemic awareness is critical for children's success. In short, phonemic awareness is essential in helping children identify sounds in spoken words, make words from sounds, and read and write what they hear. Following the advantages, researchers have sought to determine how phonological awareness programs can be enhanced among children to ensure maximum achievement in learning and reading. Therefore, it is worth mentioning that the enhancement of phonological awareness lies in how teachers engage with and teach children about phonemes (Johnson, 2020).

Teachers must be able to build their teachings from a single sound and then progressively into two letter words, three letter words, short sentences, etc. Similarly, as Dessemontet et al. (2017) noted, the ease with which phonological awareness can be enhanced relied on students' understanding of specific phonemic knowledge that included isolation of sounds, blending, deletion, addition, substitution, and identification

of phonemes. Additionally, emphasizing developmental progress among children was found to be effective. Studies showed that it was easy for children to identify first and last sounds rather quickly as opposed to middle sounds (Johnson, 2020).

Enhancement strategies depend on how well phonemic and phonological programs are developed among children at different levels of learning. As noted earlier, it was discovered that children who possessed phonemic awareness had it easy when it came to reading and spelling out sounds. Therefore, one way of building a phonological program is by listening up (Patscheke et al., 2018). According to Johnson (2020), good phonemic awareness begins with children being able to pick up sounds, rhymes, and syllables in the words they hear. Additionally, focusing and emphasizing words that rhyme is the most excellent strategy in introducing children to phonemes. For instance, asking children to identify words in books or passages that sound similar. Other ways that have been identified include clapping to the beat of the sounds, playing guesswork with children, carrying a tune that will enable children to master rhyming skills, connecting sounds, and breaking words apart to identify each sound (Patscheke et al., 2018).

Generating Rhymes

To enhance phonological awareness among children, it is essential to focus on generating rhyming words. According to Antonacci and O'Callaghan (2012), the generation of rhymes is an instructional strategy to develop definite phonological skills among children. In this strategy, teachers engage with students to isolate, manipulate, and blend sounds at various levels. Children are first tasked with identifying words that rhyme within a poem or a passage. Activity with language has proven critical in enabling students to form words through rhyme generation. The rhyme generation strategy's sole

reason was to encourage children to develop critical phonological awareness skills such as manipulation of onset and rime. Patscheke et al. (2018) defined manipulation of onset as the beginning of letters/sounds such as *t* in *trap.* Consequently, he described rime as the stem of the word or the part that carried the meaning of the whole concept.

According to Antonacci and O'Callaghan (2012), this strategy is easy in that rhyme generation occurs typically during reading time or early morning reading hours. Patscheke et al. (2018) further noted that rhyming games were a fundamental basis of phonological awareness. It needed children and students to listen more keenly and attentively for sounds within the words. Additionally, rhyme generation enables students to learn that words are made up of separate parts in addition to encouraging children to form words that rhyme.

Multisensory Mapping

According to Antonacci and O'Callaghan (2012), multisensory learning inspires students to use some or all of their senses to collect information about a project, understand the relationship between concepts, and establish the link between known ideas and store information that they can recall at a later date. From numerous research, it has been found that multisensory learning has been beneficial for children with reading and learning difficulties. It engages and allows students to use more than a single sense at one given time. Therefore, multisensory mapping can be defined as the ability to apply all forms of equipment such as visual, auditory, and kinesthetic-tactile to enhance processing and retaining learned sounds. Unlike conventional teaching methods of teaching phonological awareness, multisensory learning/mapping focuses and maximizes on areas

of students' strength to help them learn effectively and score highly in their studies (Volpe & Gori, 2019).

Multisensory mapping identifies three types of students (Volpe & Gori, 2019). 1) Auditory learners use their ears more when learning, comprehending, and recalling sounds. That is to say, these learners learn much better by sound. 2) Visual learners use their sight more to learn and comprehend sounds and recall sounds through visuals such as pictures. 3) Tactile learners learn more effectively through a sense of touch, while kinesthetic learners learn by imitating the sounds or move in a way that depicts what they have learned (Brulé et al., 2018).

In multisensory mapping, learning or studies are organized to easily read and understand the concepts through actively participating in lessons and other learning activities as well as through their resolve. In phonemic awareness, multisensory strategy techniques that include illustration, tracing, and children chanting sounds enable children to process and retain sounds in various ways (Antonacci & O'Callaghan, 2012). Further, Brulé et al. (2018) reports that as students continue playing and manipulating sounds through multiple senses, they begin to understand the alphabetic rule. Studies have shown that when students are exposed to intensive, explicit training on phonemic awareness, they recorded significant growth (Islam & Park, 2016). As such, this strategy can be applied as an intervention strategy for children who have dyslexia.

The effectiveness of this strategy is that it allows students and children to engage and use their sense of sight, hearing, and touch to learn and identify sounds. The instructional period is lively and exciting as children are encouraged to demonstrate what they have learned. Additionally, multisensory mapping is essential because it helps

teachers achieve cognitive, affective, and psychomotor domains of educational goals in addition to encouraging active children participation rather than having children passively learn phonemic awareness.

Use of Picture Card Snap

When learning phonemic awareness, young children experience a lot of problems as they are repeatedly asked to treat every sound as an object than can be manipulated. However, constant and intensive training has shown positive results in children learning phonological awareness despite the challenges. To address this challenge, scholars and researchers have suggested a strategy that they have called Picture Card Snap. According to Antonacci and O'Callaghan (2012), Picture Card Snap provides early and nascent learners with scaffolded activities essential for categorizing and identifying sounds. Picture Card Snap provides early readers with repetitive specific practices by enabling them to match initial, medial, and final sounds with pictures (Antonacci & O'Callaghan, 2012). The intrinsic part of the Picture Card Snap strategy is in the value of the scaffolding that emergent readers are awarded. Equally, studies by Brulé et al. (2018) also showed that the pictures of sounds in cards enabled students to recall the sounds through playing with cards quickly.

The Treasure Chest

It is an instructional strategy that focuses on students' skills of segmentation and blending of sounds according to Islam and Park (2016). Consequently, Antonacci and O'Callaghan (2012) note that a teaching activity that focuses on two phonemic skills is highly effective. For instance, when children are taught segmentation and blending sounds simultaneously, the teacher is preparing them for decoding and encoding activity

of words. Since this strategy is useful, there is still more research that needs to be done on this strategy. Equally, studies should focus on understanding the psychology of treasure chests on young children learning phonemic awareness.

Phonemic awareness allows students and emergent readers to identify, blend, and manipulate sounds. From the discussion above, early knowledge of phonemic awareness is essential in preventing reading problems among students. This essentiality is brought by the fact that, through isolation, blending, substitution, addition, and segmentation of sounds, children and students can easily connect and read words. Similarly, enhancing phonemic awareness among children has been made possible through strategies such as Treasure Chest, Picture Card Snap, Multisensory Mapping, and Generation of Rhymes that have proven to be effective.

Phonics Instruction

The inclusion of phonics instruction in the primary grades has been researched and debated for many decades. This debate has led to shifts in the teaching of phonics skills and has resulted in abandoning the instruction of phonics, only to bring it back at a later time in a different form (Emans, 1968). Phonics instruction today is much different than in previous decades as educators have a better understanding of how to teach reading, including phonics skills. For years, phonics generalizations were taught, and children were expected to memorize rules. Clymer (1963) found that many exceptions to the forty-five generalizations being taught to children existed and that only eighteen of them were considered beneficial. Today, there is less emphasis on “drill and kill” phonics teaching practices and more emphasis on allowing children to interact and participate in

short lessons that utilize multiple senses while often incorporating spelling and writing activities.

Phonics instruction is important because it teaches beginning readers the alphabetic writing system, which is vital for children to be able to learn to read and spell words (Adams, 1990; Ehri, 2014; Rack et al., 1994; Rayner, et al., 2001; Tunmer & Nicholson, 2011). Phonics instruction also teaches children the relationship between letters and sounds. When children learn how a writing system operates to represent spoken language, they can link the symbols written with their language system to comprehend what they have read (Treiman, 2018). Moreover, phonics instruction aids in the development of the alphabetic principle (Villaume & Brabham, 2003).

Research has indicated for years that phonics instruction is an integral part of reading instruction. It is designed for both beginning readers and children who are struggling with learning to read (National Reading Panel, 2000). For students with reading difficulties, phonics instruction is considered especially advantageous (Ehri et al., 2001). When children are taught how to decode words, it supports their word recognition skills as well as their reading fluency. In addition, phonics instruction helps children learn to spell words because instruction focuses on common spelling patterns.

Types of Phonics Instruction

There are different approaches used to teach phonics in a systematic manner which include synthetic phonics, analytic phonics, embedded phonics, analogy phonics, onset-rime phonics, and phonics through spelling (Ehri et al., 2001). The two most commonly used approaches are synthetic and analytic phonics. Synthetic phonics involves a part-to-whole approach whereas analytic phonics involves a whole-to-part

method (Moustafa & Maldonado-Colon, 1998). Glazzard (2017) reported that systematic phonics instruction improves spelling and word reading, but data to determine if a specific method of teaching children phonics is superior to another was inconclusive. Conversely, Johnston et al. (2011) found that boys did better with a synthetic phonics approach as opposed to an analytic phonics approach and suggested that synthetic phonics is more successful at facilitating boys' development with the integration among visual and phonological information.

Numerous reports have indicated that teaching phonics explicitly and in a systematic order produces effective readers. Systematic phonics instruction can also be implemented in a manner that is meaningful and attractive for young children (Graaff et al., 2009). The National Reading Panel (2000) found that children's reading growth was greater when phonics instruction was provided systematically when compared to instruction that excluded phonics or was taught unsystematically. Furthermore, a meta-analysis of Ehri et al. (2001) found that English-speaking children profited more from systematic phonics instruction on reading and spelling skills. Therefore, teachers need to be cognizant of their approach to teaching phonics for the instruction to be effective. Regardless of the method used to teach phonics, children benefit from instruction in reading that is explicit and systematic (Brady & Moats, 1997).

Teacher Knowledge

Among educators, there is great concern about teachers' abilities to teach beginning reading successfully (Brady, 2011). Austin and Morrison (1963) noted that teachers were not adept at grasping phonics principles and that instruction would be affected. The literature indicates that teachers' abilities to teach basic reading skills have

continued to plague the education system in the United States, and a significant amount of research has attempted to identify solutions to the problem.

Teacher knowledge of language concepts that are tied to reading has been studied at length and is a critical component to helping children learn to read. Equally as important is the need for teachers to apply their knowledge to effectively recognize children at risk for reading failure and then provide interventions to remediate deficits. Moats (2009) found that teachers frequently feel inadequately prepared to meet the needs of students who have difficulties with reading, writing, and language. Students who struggle to read are less likely to develop their reading abilities if their teachers lack the knowledge of explicit code-based concepts and structure of language (Cohen et al., 2016).

To provide effective individualized instruction, a highly trained teacher is required (Cohen et al., 2016). Many teachers responsible for teaching children to read have not received the proper education and training to be effective. Treiman (2018) states that a critical element in enhancing the reading performance of children is to improve the teaching of teachers. Similarly, Moates (2009) states that "knowledge of language structure, language and reading development, and the practices most supported by research are among the assets of flexible, responsive teachers" (p. 393). Without competent teachers, efforts to improve reading instruction will be ineffective.

Reading teachers enter the education profession in a variety of ways. Due to this factor, their training to deliver literacy instruction including teaching phonemic awareness and phonics related skills is vastly different. To teach systematic phonics effectively, it requires teachers to have specialized knowledge and training that many

primary teachers lack (Ehri & Flugman, 2017). A large percentage of first year teachers are unable to identify or count phonemes, have minimal understanding of what phonemic awareness instruction is, and cannot differentiate between phonics and phonemic awareness (Cheesman et al., 2009). Pre-service teacher preparation programs need to strengthen their training in delivering phonics instruction (Ehri & Flugman, 2017). This could be accomplished by providing more instruction in teaching beginning readers and providing multiple experiences for pre-service teachers to develop their teaching skills in real classrooms.

Educators of the future must understand well-grounded reading strategies and be able to teach them to their students (Walsh et al., 2006). If teachers do not possess a sufficient understanding of how speech is structured phonemically and how graphemes correspond to phonemes in words, then it will be difficult for them to pass on this knowledge to the children they are responsible for teaching how to read (Scarborough et al., 1998). Thus, a thorough understanding of these concepts would enable a teacher to help children develop an appreciation for the structure of language, which ultimately should result in stronger readers.

Culturally Responsive Pedagogy

The diversity of public institutions in the United States has forced many institutions to develop and adopt new changes to accommodate the ever-growing multicultural classroom. As such, there has been a need to adopt a pedagogy that will develop and enhance a comfortable and academic environment meant to support and enrich students from all walks of life, ethnicities, and beliefs. Warren (2017) asserted that a culturally responsive pedagogy (CRP) offered teachers theoretical and elaborated

empirical conventions that enabled them to become competent in teaching highly diverse students. In another research, Warren (2017) found that empathy is effective in improving a teacher's capacity to respond or react to young people in ways that evidenced the need for CRP.

As Mellom et al. (2018) found, culturally responsive pedagogy is a mode of teaching that, on a large part, focuses on identifying students' specific strengths and nurturing them to aid in student achievement in addition to fostering a sense of students' cultural well-being. In the United States, research has shown that the majority of teachers are from middle European-American backgrounds. According to Warren (2017), the greatest obstacle to achieving a culturally responsive pedagogy is the teachers' inability to let go of their cultural biases and instead learn to accommodate the different cultures of the many students they will be teaching. To mediate this cultural bias, teacher training programs have incorporated practical and theoretical lessons to help teachers first understand their heritage, upbringing, and any possibility of racial or cultural bias.

Studies by Warren (2017) reported that teacher training programs could prepare teachers to teach in a highly diverse classroom by allowing teachers to explore their own cultures and learn about their students' cultures. Equally, studies by Mellom et al. (2018) recognized that cultural pedagogy is divided into three dimensions: instructional dimension, personal dimension, and institutional dimension. The institutional dimension of culturally responsive pedagogy focuses on the need to reform cultural factors that affect how an institution is organized, how it is involved with the community, and its policies and procedures that include funding and resources (Warren, 2017). On the other hand, the personal dimension is defined by Barnes and McCallops (2019) as a process by

which teachers embrace and learn how to be culturally responsive. The instructional dimension, as defined by Barnes and McCallops (2019), referred to challenges that associate with the implementation of a culturally responsive classroom. Since it is hard to overcome racial and cultural bias, it has been shown that they can be overcome by constant reflection and hard work (Cheesman & Pry, 2010; Wearmouth, 2017).

However, Warren (2017) illustrated that the critical element needed to put off pre-existing cultural or racial biases is the teacher's willingness to participate and undergo an intensive self-check aimed at identifying and learning what should change to teach in a culturally diverse classroom comfortably. Martin et al. (2017) has suggested numerous ways in which this can be accomplished. First, Warren (2017) suggested that instructors should be directed and encouraged to jot down reflections about upbringing, interpersonal relationships, and how their experiences may differ from that of a person raised in a different culture, and finally, a reflection on family history. Second, it was suggested that the reflections should be directed to address bias and racism, fears, and stereotypes. Once an instructor comes in a position to fully comprehend that his or her culture is equally as significant and unique as other cultures, it will be easier for him or her to learn and appreciate other cultures' values and traditions (Warren, 2017).

In one study, Wearmouth (2017) acknowledged the importance of culturally responsive pedagogy on student performance. According to their argument, children normally learn the basic skills of speaking within their cultural contexts. As such, for children to also effectively learn to read and write, it is imperative that the learning environment imitates the cultural context of the children. Additionally, Wearmouth (2017) developed a framework for incorporating culturally responsive pedagogy in

contemporary teaching and learning in United States schools. In their framework, Wearmouth (2017) acknowledged the need for culturally responsive pedagogy at the institutional, classroom, and individual student levels to ensure effective learning. According to Wearmouth (2017), responsive pedagogy at the institutional level refers to the role of the school in the enforcement of policies or allocation of resources supporting culturally responsive pedagogy. At the classroom level, it is the role of the teacher to ensure that they understand the cultural context in which teaching should take place. As Wearmouth (2017) reiterated, the teachers must momentarily denounce their own culture and teach through the cultural lenses of the learners. Lastly, at the individual level, the learner has the responsibility of connecting any content delivered to their own cultural setting for effective learning (Wearmouth, 2017).

The importance of culturally responsive pedagogy has also been reiterated by other scholars. For instance, Barnes and McCallops (2019) investigated the perceptions of educators on the effectiveness of culturally responsive pedagogy on social-emotional learning. In their findings, Barnes and McCallops (2019) reported that culturally responsive pedagogy was an important form of instruction that should occur prior to social-emotional learning intervention. Garland and Bryan (2017) acknowledged that these findings were important for enhancing social-emotional learning intervention in the United States, where a majority of the teachers are predominantly white, female, or of the middle economic class. Considering the high diversity of the United States student population in terms of race/ethnicity, economic class, and gender, a culturally responsive mode of instruction is imperative to ensure successful learning. In another similar research, Ndemanu and Jordan (2018) reported that African immigrant children in the

United States had difficulty adjusting to the new and unique culture they had been exposed to. Given that most teachers in the United States are white and female, their capacity to understand the deep cultural contexts of the African immigrant children was quite difficult (Ndemanu & Jordan, 2018). As such, this greatly affected the children's capacity to learn effectively.

According to Garland and Bryan (2017), any teaching model that tends to ignore the modes of communication and interaction that students have learned from their cultural settings is likely to spark resistance to learning. On the contrary, adopting instructional modes that are sensitive to the students' culture is likely to increase their interest in learning, enhancing overall performance. Additionally, Garland and Bryan (2017) emphasized that culturally responsive instructional modes make students feel respected and their culture valued. As a result, the students are likely to develop a positive attitude towards the educators. In another research, Banks and Banks (2019) suggested that at the school level, one way to integrate cultural responsiveness in teaching is to integrate cultural aspects in the content that is disseminated to the learners. However, other scholars such as Day and Beard (2019) argued that culturally responsive pedagogy should involve the use of instructional modes that promote the use of a wide range of cultures. According to Day and Beard (2019), it would be very difficult for a teacher to disseminate knowledge to learners through their own cultural lens if he or she (the teacher) lacks adequate exposure to the culture at hand. Additionally, Day and Beard (2019) argued that allowing students to learn through their own cultural lens, and failing to introduce them to other cultures, may eventually make the learner become culturally insensitive.

Cultural Responsiveness and Student Learning

According to Vygotsky 1978, as cited by Wearmouth (2017), there exists two forms in which the learning process can occur; interpersonal plane referring to between people and intrapersonal learning, where an individual takes on and reflects on new ideas/concepts, psychological skills, tools, and knowledge. As Martin et al. (2017) posit, the cognitive development in a certain social development and language and literacy are observed as virtually inseparable and mutually facilitative. Additionally, the cognitive development of language, literacy, and social development solely relies on the presence of symbols or mediators. In a learning environment like a school, teachers act as mediators who can guide, punish, reward, and model using symbolic tools such as language literacy (Martin et al., 2017).

The concept of the zone of proximal development explains learning in a social context. According to Wearmouth (2017), as highlighted by Vygotsky (1978), learning occurs when interacting with other people or students. Additionally, the zone of proximal development (ZPD) includes the steps of learning and the range of skills and knowledge that students are not willing or not able to learn by themselves. Still, they can quickly learn when interacting with their peers or a more experienced person. As discussed above, a pedagogy seeks to create an environment that is culturally responsive and accommodative. However, according to Wearmouth (2017), two standard views on pedagogy exist. The first view explains what generally happens in schools. It highlights programs such as teaching with other strategies and techniques particular to a given domain. The second view involves the first view, but in a more detailed form in that it addresses one in a specific view with the inclusion of social order.

Following the significance of culturally responsive pedagogy in understanding a diverse culture, Cheesman and Pry (2010) addressed why cultural responsiveness is critical in schools from a social order perspective.

According to Wearmouth (2017), children learn to speak, read, think, and write in their social contexts, and as such, it calls for teachers to find ways in which they can mediate the school's cultural context with that of the students. Additionally, learning and the context where learning takes place are inseparable. In classroom learning, cultural responsiveness has proven to be critical. For instance, teachers and students can handle tasks or school problems together, listen to each other, argue, and discuss opposing views together (Wearmouth, 2017). Equally, students can articulate and explain their ideas without fear of contradictions or harassment and are also able to give each other the support needed.

Conclusion

The literature reviewed concerning phonological awareness, phonemic awareness, and phonics instruction indicates that there is a strong correlation between these early foundational literacy skills and reading achievement in later grades. The impact early foundational literacy skills have on reading achievement highlight the importance of providing instruction that will allow children to develop these skills to become stronger readers. The literature indicates that there has been a concern for how ill-prepared teachers are to teach early foundational literacy skills for decades. Furthermore, there continues to be a grave concern regarding teachers' knowledge or perceived knowledge of phonological awareness, phonemic awareness, and phonics skills instruction to teach developing and struggling readers. Many teachers are inadequately prepared or feel

unprepared to teach these basic reading skills to children, especially those who are struggling to learn to read. To ensure that teachers receive the knowledge needed to teach early foundational literacy skills effectively, professional development and more training for pre-service teachers should be provided. It will take a concerted effort from the educational community to emphasize the necessity for training current teachers and pre-service teachers in providing direct and explicit instruction in early foundational literacy skills.

Chapter III

Methodology

The main problem of focus in this qualitative case study was that despite its high prevalence and associated adverse effects on the academic and future career success of children, dyslexia has received little attention among educators (Indrarathne, 2019). Additionally, dyslexia is associated with reading difficulties such that learners with the condition are more predisposed to lower academic achievement and limited chances of career success (O'Byrne et al., 2019). Despite the prevalence and associated impacts of the condition, there is overwhelming evidence that teachers have limited knowledge about dyslexia, as well as how to address it (Indrarathne, 2019; Senarath, 2016). The purpose of this study was to examine how first grade teachers support students with dyslexia in acquiring early foundational literacy skills. To address this purpose, the following research question was asked:

RQ: How do first grade teachers support students with dyslexia in acquiring early foundational literacy skills?

The findings of this study provided evidence from first grade teachers on how children with dyslexia could be supported, to ensure they attain academic and career-goal achievement. This study included first grade teachers from a public suburban school district in Texas who had at least one year of teaching experience and had taught at least one student with dyslexia or who exhibited signs of dyslexia.

Methodological Tradition

The research method for this study was qualitative. Qualitative researchers utilize a different approach from the methods they use in quantitative studies (Creswell, 2014).

A qualitative research method is chosen by researchers when the intent is to study people, explore events, or learn about the behaviors of people (Creswell, 2014). In qualitative research, the researcher employs an inductive and deductive method for analyzing data to create meaning and identify themes that emerge (Creswell, 2014).

A qualitative method was deemed to be the best fit for this study because the data that was collected from qualitative interviews focused on collecting individuals' perceptions. Yin (2014) suggested that data collected from qualitative studies are used to construct a theory and/or lead to a deeper understanding of an issue or phenomenon. Another objective of the study was to answer the research question that guides the study and it was determined that conducting interviews would be the best procedure to accomplish this task. According to Creswell (2014), interviews in qualitative studies are often unstructured and utilize open-ended questions to obtain the participants' perspectives.

The research design selected in this study was a case study. According to Stake (1995), case studies are used by researchers in education and social services when they are interested in studying people and programs. Case studies examine the complexity of cases in order to understand occurrences within certain contexts (Stake, 1995). In this study, the principal researcher's purpose for selecting a case study approach was to identify the strategies first grade teachers use to support students with dyslexia in acquiring early foundational literacy skills. As a research design, case studies are used in many situations and can contribute to knowledge of an individual group, organization, or related phenomena (Yin, 2014). The utilization of a case study is appropriate when the

researcher is interested in the participants' uniqueness and wishes to understand their perspectives (Yin, 2014).

Context of the Study

The site of the study was a public school district in Southeast Texas. Texas public schools have identified 3.6% of their students as having dyslexia as of the 2018-2019 school year. This is far below national and global estimates, indicating dyslexia in Texas may be underdiagnosed (American Institutes for Research, 2019). It is estimated that five to 15 percent of children and adults in the United States have dyslexia. This means that between 14.5 and 43.5 million individuals in the United States have dyslexia (Society for Neuroscience, 2020). Furthermore, it is estimated that 60% of children in the United States do not meet standards for reading proficiency, whether they have dyslexia or not (Handler, 2016). On a global scale, Indrarathne (2019) reported that in every ten children, one has reading difficulties and estimated that about 700 million people globally had dyslexia. While society in the United States and abroad is becoming more aware of dyslexia due to its prevalence and impact (Castillo & Gilger, 2018), this study was important to further contextualize how first grade teachers support early foundational literacy skills among students with dyslexia, as dyslexia has received little attention among educators in the United States when compared with dyslexia's far-reaching impact (Indrarathne, 2019).

There are political structures within the United States that supported the purpose of this study, which was to examine how first grade teachers supported students with dyslexia in developing early foundational literacy skills. There are an estimated 6.5 million infants, toddlers, children, and youth with disabilities in the United States who

qualify for protection under the Individuals with Disabilities Education Act (IDEA) (IDEA, 2020). Castillo and Gilger (2018) found that disabilities that impair effective learning have been detected among approximately 35% of children covered by IDEA. The Individuals with Disabilities Education Act ensures "free appropriate public education to eligible children with disabilities throughout the nation and ensures special education and related services to those children" (IDEA, 2020, para. 1).

There has recently been a shift in the United States towards further understanding and support for children with dyslexia (Hulme & Snowling, 2019). In 2018, 33 legislative bills were proposed related to dyslexia (Hulme & Snowling, 2019). Since then, more states have passed laws further supporting children with dyslexia and bolstering the projections of IDEA (Morin, 2019). For instance, in 2019, Alabama passed into law the Alabama Literacy Act while Alaska passed the Legislative Task Force on Reading Proficiency and Dyslexia. In 2019, Arkansas revised its 2015 and 2017 laws, including the Instruction to the Right to Read Act and the Required Dyslexia Services for Incarcerated Youth and Adults (Morin, 2019).

Position of the Researcher

As an educational diagnostician, I reflected on my experiences and practices as a teacher and how ill-prepared I was to deliver intensive interventions to struggling readers and students with dyslexia. Even though I felt that my education and training did a good job in preparing me to be a teacher, I wished that there had been more opportunities to work with real students directly to practice the skills and concepts being taught. Many of the struggling readers I taught were eventually diagnosed with dyslexia and given the number of individuals with dyslexia in the United States, I believed that more focus

should have been on teaching these students the skills they need to become effective readers.

This personal experience developing my ability to support students with dyslexia had partly inspired the current research. This experience, refined by the understanding of ZPD (Vygotsky, 1978) and sensory theory (Laird, 1985), led me to believe that first grade teachers would have important experiences to share related to how they support early foundational literacy skills among students with dyslexia. While my personal experiences may have influenced my belief that teachers are able to support students with dyslexia in developing early foundational literacy skills, I prioritized the study participants' experiences when collecting and analyzing the data used in this study. I remained unbiased throughout the study and compared the data findings in the study to established literature rather than my own experience. While my own experiences have shaped my personal perceptions of the role teachers can play in supporting students with dyslexia, the results of the study were focused solely on the experiences of the participants in the study and the findings from the literature. As the principal researcher, I worked to combat any bias by transcribing all of the interviews verbatim with the help of the embedded audio/video recording feature in Microsoft Teams and deriving all findings directly from the transcripts I created from the interviews that took place using the video conferencing technology.

Participants

The participants from this study consisted of five first grade teachers from a public suburban school district in Texas. All participants in the study participated in one individual interview followed by a member check and focus group. All participants had at

least one year of teaching experience and had taught at least one student with dyslexia or who have shown signs of dyslexia. The principal researcher served as a participant by conducting the individual interviews, member check, and focus group session. During the interviews, the principal researcher did not assert personal opinions onto participants or attempt to influence them in any way. This was accomplished by avoiding leading questions and ensuring that there were no reactions on the part of the principal researcher, positively or negatively, to the participants' statements. These parameters were selected to ensure that participants had the appropriate experience to be able to speak to and address the research question. Convenience sampling was used to recruit participants that met these requirements. Since the participants in the current study were recruited through convenience sampling, the participants did have a social/professional relationship with the principal researcher. To avoid concern that participants may not answer questions honestly, participation was entirely voluntary. Furthermore, the principal researcher kept all data confidential, including from the participants' employers.

Data Collection

Upon receiving Institutional Review Board (IRB) approval from the University of Houston, participants were recruited from the principal researcher's social/professional network for the study by sending an electronic communication that had been approved by the IRB. The principal researcher reached out to each potential participant directly through the existing available contact information. This included providing potential participants information about the study, including the purpose of the study, and that no harm was expected to come to them through participation in the current study. Interested participants were then able to contact the principal researcher directly. Participants were

selected from the principal researcher's social/professional network who were first grade teachers in a public suburban school district in Texas. Each participant was able to schedule an interview with the principal researcher at a mutually agreeable time that did not interfere with teaching responsibilities or duties. Due to the status of the COVID-19 pandemic in Texas, interviews were conducted using video conferencing technology (Microsoft Teams).

The data collected in this study came from one semi-structured individual interview with each of the five participants, a member check, and a focus group with the five participants. Each participant participated in an individual interview that lasted between 45 minutes to an hour. After each individual interview, the principal researcher transcribed the interviews and a member check was completed with each participant to seek clarification, add additional information, and ensure validity and accuracy of content. Finally, the participants participated in a focus group. The focus group consisted of all five participants together, where they answered additional questions. This allowed the participants to discuss their opinions as a group and build off each other's thoughts.

Semi-structured interviews and focus group data were used in the current study. Seidman (2012) stated that interviews and focus groups are the primary modes of inquiry of qualitative studies. The interviews utilized in this study were useful for collecting thick data (Seidman, 2012). The interviews allowed the principal researcher to obtain in-depth information on the topic of first grade teachers supporting students with dyslexia in developing early foundational literacy skills. The benefit of using semi-structured interviews was that firsthand accounts of participants' experiences gathered during the interviews provided comparable data for the sake of data analysis while allowing

participants to articulate their experiences supporting first graders with dyslexia in their own words (Seidman, 2012). Focus group data, on the other hand, provided a rich discussion that was lacking in individual interviews (Seidman, 2012). The goal of this approach was to create an organized and comparable array of qualitative experiences that were, at the same time, unique and true to each participant. This allowed the principal researcher to analyze the data for patterns and consistencies between participants on an individual basis (Seidman, 2012).

Data Analysis

Data was analyzed using thematic coding. Interview transcripts, member check data, and focus group transcripts, were uploaded into NVivo 12 software and analyzed thematically using the six-step protocol described by Braun et al. (2014). The first step of analysis involved reading and rereading the transcripts to identify points of potential analytical interest. In this step, the principal researcher read through the transcript and identified areas of preliminary interest in the interview (Braun et al., 2014). The second step involved grouping related phrases or groups of phrases into codes, which were labeled with descriptive words or phrases. These descriptive labels included preliminary or emergent codes that arose from the interview (Braun et al., 2014). In the third step, similar codes were grouped into larger themes, which were also labeled with descriptive phrases. Larger themes were a combination of smaller emergent codes that were identified in step two (Braun et al., 2014). The fourth step involved reviewing and revising themes to identify relationships and organize the analysis (Braun et al., 2014). In the fifth step, the principal researcher engaged in a detailed analysis of the data to verify

themes and refine the organization. Finally, in the sixth step, a final refinement of the analysis was completed (Braun et al., 2014).

Study Validity

The credibility of the study was supported by interviewing at least five participants and by reaching data saturation. Data saturation refers to the point at which no new or novel information is being collected from participants (Rubin & Rubin, 2012). By reaching data saturation, the principal researcher was able to assure that the sample participants did not misrepresent the population as a whole and that the data was not skewed by unique experiences that are not generally experienced by others in the population. While participants' experiences are unique to them, reaching data saturation ensured that the experiences described by participants were at least relatable to others within the population. Reaching data saturation also helped ensure the generalizability of the data.

The dependability of the research was assured by transcribing participant interviews verbatim and by asking each participant to participate in a member check. This ensured that the data was not accidentally misrepresented by the participant or the researcher. Since the participants were able to clarify their remarks after the fact, this allowed the participants to make sure that the statements accurately represented their experiences.

Replicability was ensured by closely following the protocols documented in this chapter. By doing so, other researchers will be able to closely replicate the work in order to confirm or refute the findings presented in the current study (Rubin & Rubin, 2012). By closely documenting and justifying the procedures used in the study, other researchers

will be able to examine and critique the processes (Rubin & Rubin, 2012). This increases the overall validity of the findings in the current study as readers will know that the findings are replicable should another study be completed using the same population (Rubin & Rubin, 2012).

Summary

The main problem of focus in this qualitative case study was that despite its high prevalence and associated adverse effects on the academic and future career success of children, dyslexia has received little attention among educators (Indrarathne, 2019). The purpose of this study was to examine how first grade teachers support students with dyslexia in developing early foundational literacy skills. To address this purpose, the following research question was asked:

> **RQ:** How do first grade teachers support students with dyslexia in acquiring early foundational literacy skills?

This study used a case study approach to analyze semi-structured interviews, member checks, and focus group data collected from five first grade teachers in a public suburban school district in Texas. All participants had at least one year of experience teaching first grade and have taught at least one student with dyslexia or who have shown signs of dyslexia. Participants participated in an individual interview that was semi-structured, followed by a member check. Finally, the participants participated in a focus group. Data was analyzed using thematic coding. Transcripts were uploaded into NVivo 12 software and analyzed thematically using the six-step protocol described by Braun et al. (2014).

Chapter IV

Findings and Results

The purpose of this qualitative case study was to examine how first grade teachers support students with dyslexia in developing early foundational literacy skills. Phonemic awareness was defined as the ability to recognize and manipulate the individual speech sounds, or phonemes, in spoken words (Moats, 2020). Additionally, the importance of teacher preparation and culturally responsive pedagogy were examined through this study as it relates to meeting the needs of students with dyslexia to ensure that these students are being adequately served. The research question used to guide this study was: How do first grade teachers support students with dyslexia in acquiring early foundational literacy skills?

This chapter is a presentation of the study findings. The following section of this chapter is a description of the study participants. Next, this chapter includes a description of the execution of the data analysis procedure discussed in Chapter 3. The findings in the study are then presented, organized by theme. This chapter concludes with a summary of the findings.

Demographics

The participants in this study were five first grade teachers from a public suburban school district in Texas. Data collection was through a one-to-one interview with each of the participants in addition to a member check with each of the participants and a focus group with all five participants in attendance. To maintain the confidentiality of participants' identities, the participants are designated in this chapter with alphanumeric codes (P1, P2, etc.). The same designation is used for each participant in

the interview and focus group transcripts. Table 1 indicates the demographic characteristics of the participants.

Table 1

Participant Demographics

Partici-pant	Gender	Age range	Ethnicity	Certification route	Years of teaching experience	Years of first grade teaching experience	Self-efficacy rating
P1	Female	40-49	White	Alternative	3	3	< 5
P2	Female	30-39	White	Alternative	12	10	7.5
P3	Female	20-29	White	Traditional	3	3	6
P4	Female	50-59	White	Traditional	26	16	7
P5	Female	50-59	White	Alternative	23	17	8

Note. To determine self-efficacy rating, participants were asked, "On a scale of one to 10, one being the lowest and 10 being the highest, how would you rate your self-efficacy in guiding successful outcomes for students with dyslexia, or suspected of having dyslexia, in developing the reading skills they need to become effective readers, including phonemic and phonological awareness?"

All five participants (100%) were female and white. Three participants (60%) took an alternative route to obtain their certification, and two (40%) took a traditional route. Participants' average age was 42 years. Participants' average total number of years of teaching experience was 13, with a range of 23 years, from a minimum of three years to a maximum of 26 years. Participants' average number of years of experience teaching first grade was 9.8, with a range of 14 years, from a minimum of three to a maximum of 17. In rating her self-efficacy, P1 stated, "I would probably have to write myself on the lower end of that scale simply because I am new and just lacking that experience." If P1 is assigned a self-efficacy rating of four, the average self-efficacy rating for the sample was 6.5 out of 10, with 10 representing the greatest self-efficacy.

Data Analysis

Individual interviews and focus group data were transcribed verbatim from the audio recordings into Microsoft Word documents. The transcripts were imported as source documents into NVivo 12 computer-assisted qualitative data analysis software. The data was analyzed using the inductive, six-step, thematic procedure described by Braun et al. (2014). In the first step of the analysis, the transcripts were read and reread in full to gain familiarity with them (Braun et al., 2014). During this step, notes were made regarding potential points of analytical interest. Points of interest included potential patterns within and across the different transcripts.

The second step of the analysis involved initial coding of the data (Braun et al., 2014). Phrases or groups of phrases from the transcripts that potentially expressed a meaning relevant to how first grade teachers support early foundational literacy skills among students with dyslexia were assigned to nodes in NVivo. Phrases or groups of phrases (i.e., data excerpts) that expressed similar meanings were assigned to the same node. Each node represented an initial, inductive code, a set of responses grouped together because they had similar meanings. The codes were given descriptive labels to indicate the meaning of the data assigned to them. For example, P3 said in a focus group response of supporting students with dyslexia, “The most important thing is building their confidence . . . even if that’s all you get out of it with them is just building that confidence so they can continue to grow and build on that.” P3’s response indicated that she perceived building the confidence of students with dyslexia as an important part of supporting them. The response was assigned to an NVivo node, which was labeled, Building confidence. In a response from her first interview, P1 stated that supporting

students with dyslexia involved, “Just positive encouragement along the way, lots of repetition, lots of things that build their confidence that they are already familiar with.” Like P3’s response, P1’s response indicated that she perceived building the confidence of students with dyslexia as an important part of supporting them. P1’s response was therefore assigned to the same node, Building confidence, as P3’s focus group response. In all, a total of 10 responses from four out of five participants were assigned to this node. During Step 2 of the analysis overall, 219 data excerpts were assigned to 23 initial codes.

In the third step of the analysis, related codes were grouped into themes (Braun et al., 2014). Different codes were identified as related when they indicated different components of a single, overarching pattern in the data. For example, the initial code building confidence was grouped with eight other initial codes, including but not limited to: extra support with foundational skills, communication with parents, culturally sensitive teaching practices, and student underpreparedness. The data in this group of codes converged on the overarching idea that first grade students with dyslexia were often perceived as underprepared with phonemic awareness, and that teachers addressed this skills deficit by devoting extra time and attention to building foundational skills through teaching practices such as small groups, repetition, and positive reinforcement. The nine codes that were grouped to form this theme were assigned as child nodes in NVivo under the same parent node, which represented the theme. The theme was given the preliminary label, Extra support. Overall, the 23 initial codes were grouped into three major themes.

In the fourth step of the analysis, the themes were reviewed and refined (Braun et al., 2014). The themes and codes were reviewed individually to ensure that the data in them was appropriately clustered. Individual review of themes and codes was also used to ensure that they were sufficiently cohesive and more appropriately presented as a single idea rather than split into two or more smaller categories. The themes and codes were also compared to one another to ensure that they did not have significant overlap, which would have indicated that they might be more appropriately presented if combined into a single, larger theme or code. The themes and codes were also compared to the original data to ensure that they accurately reflected patterns in participants' responses.

The fifth step of the analysis involved naming and defining the themes through further review and refinement (Braun et al., 2014). The themes were compared to the research question used to guide this study, which was: How do first grade teachers support students with dyslexia in acquiring early foundational literacy skills? The theme labels were replaced with related phrases that clarified the significance of the theme to address the research question. For example, the theme with the preliminary label extra support was named: student skill deficits are addressed through extra support for foundational skills. In step six of the analysis, the presentation of findings that forms the rest of this chapter was produced (Braun et al., 2014). Table 2 indicates how the initial codes were grouped to form the finalized themes.

Table 2

Grouping of Related, Initial Codes into Finalized, Emergent Themes

Theme Initial code grouped to form theme	*n* of data excerpts from focus group	*n* of data excerpts from individual interview	*n* of data excerpts from member check	Total
Theme 1. Student skill deficits are addressed through extra support for foundational skills	13	73	1	87
Building confidence	4	6		10
Culturally sensitive teaching practices		5		5
Daily time devoted to providing phonemic and phonological awareness instruction	1	6		7
Drawing on teacher motivation		4		4
Extra support with foundational skills	1	21	1	23
Screening and referral	2	7		9
Student underpreparedness	1	9		10
Using district supported curriculum	5	11		16
Watching for red flags		5		5
Theme 2. Teacher training deficits are addressed through experience and self-directed learning	6	60	9	75
Comfort with district specific curriculum		8		8
Drawing understanding from personal experience		6	1	7
Dyslexia-specific training and support is needed	2	16	4	22
Initial education and training does not prepare teachers	1	8	3	12
Learning on the job	1	6		7
Minimal training for district-specific curriculum	1	5		6
Self-teaching	1	4	1	6
Teacher confidence and efficacy increases with experience and training		9		9

Theme Initial code grouped to form theme	*n* of data excerpts from focus group	*n* of data excerpts from individual interview	*n* of data excerpts from member check	Total
Theme 3. The barrier of insufficient access to the dyslexia specialist is addressed through communication and collaboration	14	32	7	53
Collaboration and information-sharing	10	12	3	25
Communication with parents		3		3
Needing more classroom support	1	1		2
Resources supporting culturally sensitive instruction		11		11
Time as a barrier		4	2	6
Using manipulatives and movement	3	1	2	6

Data Analysis Findings

This presentation of the findings from the data analysis is organized by theme. The themes were used to address the research question, which was: How do first grade teachers support students with dyslexia in acquiring early foundational literacy skills? The three themes used to address the research question were: (Theme 1) student skill deficits are addressed through extra support for foundational skills, (Theme 2) teacher training deficits are addressed through experience and self-directed learning, and (Theme 3) the barrier of insufficient access to the dyslexia specialist is addressed through communication and collaboration. The following subsections are discussions of these themes.

Theme 1: Student Skill Deficits Are Addressed Through Extra Support for Foundational Skills

Participants reported that students with dyslexia could develop significant deficits in foundational skills unless they received extra support in acquiring those skills. Extra supports in the classroom consisted of devoting additional time to reinforcing foundational skills for small groups of students, using positive reinforcement to build confidence, and screening and referring students for additional supports outside the classroom. Participants indicated that a strong indicator of dyslexia was otherwise developmentally normal cognitive functioning combined with foundational skill deficits specific to reading and writing. Difficulties in foundational skill acquisition could have causes other than dyslexia, and extra support was provided in the classroom for all students who exhibited them. Differentiating dyslexia from learning difficulties with other causes through teacher observation and testing was necessary to engage more narrowly targeted supports outside the classroom, such as meetings with a dyslexia specialist.

Participants provided daily instruction in and reinforcement of phonemic awareness to all first grade students. P1 stated that daily instruction for the entire class included foundational skill-building: “As a whole group, we have 30 minutes in the morning, and we start our day off with phonics or foundational skills. I also implement it into every guided reading lesson.” P3 stated that foundational skills were taught to the whole class daily, followed by small group instruction in which students with difficulties received extra support: “We do foundations, which is about 20 minutes, and then we do the WIN [‘What I Need,’ or extra support,] time and that’s 45 minutes, and I see two

groups during that time." Support for foundational skills for all students was part of a district initiative to introduce and reinforce those skills as early as Pre-K, participants stated. All five participants spoke enthusiastically in focus group responses about the potential benefits of early introduction and reinforcement of foundational skills. As part of the district initiative, additional teaching strategies were introduced into the first grade curriculum to build all students' foundational skills. In a representative focus group response, P5 described those additional, general supports as:

> Practice with our intervention with mCLASS this year, having those hands-on slides and manipulatives. And they weren't just a line, you know, when we're going to drag our words, and here's our sounds, but they had fun little characters and the things that you're teaching them are things that they think is fun. And I think at this age, they need to know that reading can be fun, even if they're struggling. So again, just tying all those foundations in with the fun and building that confidence. It's a win-win.

When students showed difficulties in acquiring foundational skills, all five participants stated, the difficulties could have causes other than dyslexia. In a focus group, P5 stated, "Having these kids coming in and not knowing if it's just developmental, or if it's truly one of those red flags for dyslexia," indicating that developmental delays could have symptoms that overlapped with those of dyslexia. Students' lack of preparedness could also result from a lack of preparation in the home. P1 indicated in an interview response: "I think a lack of reading at home is definitely a hindrance on a lot of students . . . if they're not getting that full [recommended] 80 minutes, you can definitely see a difference in those kids." As P1's response suggested,

student underpreparedness was not always associated with a learning disability, and contextual factors could account for skill deficits. In an interview response, P4 cited language barriers as an additional source of skill deficits that could be difficult to distinguish from dyslexia: “You can have an ESL student, that their primary language is a different language. So that would be very hard to detect whether or not it’s a language acquisition issue or a dyslexic or reading difficulty issue.” P2 stated in an interview response that learners with dyslexia were often as intellectually capable as their peers and were frustrated by their specific learning difficulties:

> A lot of times students with dyslexia are on the same intellectual level as everyone else. But basically, the students with dyslexia start to realize that they are having that harder time when they feel like they shouldn’t. So, a lot of times they can get a little bit frustrated. They can get a little bit insecure.

Participants did not perceive cultural or social differences other than language barriers as likely to interfere with students’ acquisition of foundational skills, in part because of district support for culturally sensitive instruction. P1 spoke of using culturally diverse teaching materials: “As far as like culture and ethnicity goes, . . . it’s providing all students with culturally rich books, which our curriculum is amazing at, and just exposing them to all different kinds of books.” P5 reported that culturally sensitive instruction also involved sensitivity to the diverse environments that students returned to after school. P5 indicated that this awareness led to providing extra support to compensate for resource deficits in some students’ homes: “Kids that don’t have what they need at home, you kind of pack a goodie bag and send the [learning] tools home that they’re going to need to practice at home.” Thus, participants did not perceive cultural

insensitivity in curriculum or instruction as likely to contribute to learning difficulties that might resemble dyslexia.

To distinguish dyslexia from difficulties with other causes, participants reported that they watched for "red flags," or differential indicators of dyslexia. According to all five participants, the most reliable red flag was otherwise developmentally appropriate cognitive functioning combined with difficulties specific to reading and writing. P2 indicated that deficits in foundational skills were a red flag that might indicate the need for a student to be tested for dyslexia: "When [students] come to first grade and they're still struggling with letters and sounds, that's a red flag." However, P2 emphasized that red flags for dyslexia typically occurred in students who were intellectually on the same level as their peers: "They're like everybody else, but whenever you put print in front of them, they struggle a little more . . . They're kind of stuck. They need those extra strategies and that extra pullout time." In an interview response, P5 corroborated P2's perception that students who might have dyslexia were typically differentiated from their classmates not by global learning delays, but by normal development in other areas, in combination with difficulties specific to reading and writing: "The vocabulary is so high, and they can hold a conversation, but then when you give them something to read or to write, they're not able to do it." P3 spoke of student frustration with reading and writing as a red flag, saying in an interview response, "I watch them when they have their reversals, and usually whenever I sit down and talk with them, the ones that I suspect that do have dyslexia get very frustrated and unmotivated because it's hard for them." To begin the process of assessing students for dyslexia-specific supports, P2 said in an interview response, "The first thing would be to just collect some data just from guided

reading." P2 added that if a red flag she observed was consistent in a student over time, "I would definitely bring it up to the SST [Student Success Team] committee. And then also the reading specialist to figure out and the dyslexia specialist to figure out when are we screening for dyslexia."

All five participants indicated that they provided extra supports daily in the classroom to students who had foundational skill deficits consistent with dyslexia. P2 spoke in an interview response of the need to provide extra support in the form of extra repetition and reinforcement: "Whenever you have students with dyslexia, we just make sure it's a small group, that we reinforce those foundational skills to try to give them a little extra practice and help on getting some of that stuff down." P1 corroborated P2's response in stating in her interview that extra support in foundational skill acquisition was provided to students with dyslexia in a small group setting: "We focused heavily on phonics and foundational skills, in which those students would be pulled to an extra small group with me, or it could be that they are receiving services from our dyslexia specialist." Of the specific teaching strategies used to reinforce foundational skills for learners with dyslexia, P1 added in a representative interview response:

> First is letter sound identification and then beginning sounds, and if the student is capable from moving and separating, manipulating medial sounds, or ending sounds. But I always start with the letter sound recognition first and then move to beginning sounds. And then as far as the sight words go, which is kind of how I've been able to help identify students, is using the snap cards. So having that visual and kinesthetic motion to go with common words that they're going to find in all of their reading books.

P4 also referred to providing extra time and support to students with dyslexia in an interview response: “Interventions a dyslexic student would receive [include] extra time, reading it to them, and giving them extra phonics and phonemic support.” P5 spoke specifically in an interview response of identifying and remediating foundational skill deficits for learners with dyslexia through extra time and support:

> I try to go back to the foundation to see where and what steps in their foundation that they’re missing. Is it going back to the true basic phonemic sounds that they don’t know or is it not being able to segment the sounds that they don’t know? Or just going back to the blends and the digraphs. What are they missing and where can we go back, to kind of build that foundation back up?

All five participants indicated that extra supports provided to students who exhibited learning difficulties consistent with dyslexia served a dual purpose. First, the reinforcement of foundational skills was necessary to mitigate the widening of a skill-acquisition gap between the student with the learning difficulty and their peers. Second, extra support was delivered to build confidence in students whose learning difficulties might otherwise reduce their self-efficacy and future learning. P3 based her perception of the importance of building confidence in students on her own experiences of having dyslexia as a child; she said in a focus group response: “I would say the most important thing is building their confidence, and especially at [first grade] age. I was diagnosed with dyslexia in first grade, so I know the struggle and how it’s very hard to deal with.” P2 suggested in a focus group response that building confidence in students with dyslexia was necessary to protect their self-esteem as they became more aware of themselves as learning differently than their peers: “Building that confidence, I believe, definitely at the

very beginning, in kindergarten and first grade is key, because they definitely start becoming more aware of [learning differences] when they get older." One strategy used to support confidence-building in students with dyslexia was assigning them to small groups with other, similar learners. P4 said in a focus group response: "They're overwhelmed in the larger group. They see their peers sitting around them, writing more than they are, they're struggling just to spell the one word. But to come to a small group, and then start building that confidence." Another strategy for building confidence, P1 said in an interview response, was to provide praise and recognition for students' achievements: "We do a lot of affirmations in my classroom . . . just give [students] lots of praise for even the smallest accomplishments . . . every celebration that you can have, take that opportunity for them."

In summary, all students received district-guided instructional support in foundational skill development. Learning difficulties with environmental or other causes, including dyslexia, could result in deficits in foundational skill acquisition in first grade students. A strong indicator of dyslexia was foundational skill acquisition deficits, confined specifically to reading and writing, in students who were otherwise as cognitively advanced as their peers. When participants observed and documented that indicator in a student consistently over time, they would refer the student for testing for dyslexia to determine whether additional supports would be appropriate. Additional supports might include interventions with a dyslexia specialist. To address foundational skill deficits in the classroom, participants provided extra support daily, typically in the form of small group repetition and reinforcement. Extra support was used both to

strengthen foundational skills and to build confidence in learners whose difficulties might otherwise lower their self-efficacy.

Theme 2: Teacher Training Deficits Are Addressed Through Experience and Self-Directed Learning

Participants indicated that a barrier to providing support to first grade students with dyslexia was that teacher education and training did not adequately prepare teachers to provide that support. Additionally, participants reported that they received minimal training in delivering district-specific curriculum. To compensate gaps in their initial education and training in order to provide support to first grade students with dyslexia, participants reported that they relied on experience and self-directed learning. Self-directed learning consisted of participants doing their own research on their own time using sources that provided them with direction in how to support learners with dyslexia. The experience participants drew from to improve their support for students with dyslexia was both personal and on-the-job. Personal experiences associated with having or knowing people who had dyslexia facilitated participants' understanding of and empathetic connection for students with dyslexia. On-the-job experience allowed teachers to learn support skills and to become comfortable in delivering district curriculum.

All five participants indicated that their preparation programs to become a teacher provided them with little or no preparation for supporting students with dyslexia. P1 provided a representative interview response in stating that through her alternative certification program, "We did not touch heavily on the subject of dyslexia . . . that's something that I had to learn once in the position." P3, who took a traditional route to certification, also reported during her interview that training in supporting students with

dyslexia was minimal: “I feel that my educational process or program prepared you as much as possible . . . but I do feel that the training in dyslexia was lacking.” P3 added during her second interview, “I did not have much experience other than my personal experience working with dyslexic students until I was placed in my own classroom setting.” P4 stated during her interview that when she was in her traditional certification program, “There was actually no preparation for teachers working with students with dyslexia at that time.” In an interview response, P5 expressed the perception that teachers needed more training related to supporting students with dyslexia: “I think more first grade and kindergarten teachers should be fully trained in just more of what to look for when you see a kid struggling. I’ve never truly been trained to identify a dyslexic child.”

All five participants also stated that the professional development and training they received from their district to help them support students with dyslexia was minimal. P2 described the training in stating in an interview response,

> We were given the books [to support students with dyslexia] and we were told that we could look up the videos on how to do [the Heggerty program]. This is what my recollection is. And then the dyslexia specialist did come, and she answered all of our questions that we had after that, because we were like, “We needed more.” And so she modeled it for us and modeled the hand movements. So that helped us.

Asked if training of this kind was sufficient, P5 described it as, “Minimal training, yes. I think as a district, it was just a quick day.” During her second interview, P5 elaborated on this response in stating of the “quick day” of training: “The new curriculum was a full day of just going over where to find different resources in the online

curriculum. We never went into detail on how to use the materials. It was a ‘learn as you go’ feeling.” P3 said in an interview response of the perceived insufficiency of the district-provided training, “I don’t feel like they’re very strong. I don’t think I have received training or a good training over dyslexia through the district.” P1 reported receiving no training from the district in how to support students with dyslexia, adding in an interview response, “I’m probably not aware of any [trainings] that we have for supporting. It would be, more or less, helping to identify and recognize students with signs of dyslexia.” P4 reported a desire for additional training in an interview response: “I think there could have been a little bit more professional development in implementing the activities for specific students.”

One of the ways in which participants compensated for gaps in their education and training related to supporting students with dyslexia was self-directed learning. After describing district professional development in supporting students with dyslexia as insufficient (“just a quick day”), P5 added that her own competence came instead from, “Just going on[line] myself and watching videos and seeing how words were supposed to be presented to the kids, I think that’s helped.” P5 added of the effect of her self-directed learning on her confidence in administering a specific program, “In using Heggerty, I’m very comfortable with it. Like I said, going back and self-teaching and self-watching and researching some of the videos in the program.” P1 reported in a focus group response that she developed competence in supporting students with dyslexia primarily through, “Just seeking out other teachers, whether it be from Twitter or Instagram, and just reading on our own. That’s where a lot of our ‘self-professional development’ came from.” P1

added in an interview response, “Honestly, most of my knowledge has come through personal research.”

All five participants also drew from personal experience to develop their competence in supporting students with dyslexia. One form of experience from which all five participants drew was the personal experience of having dyslexia or being close to someone who had it. In response to a question regarding her ability to support students with dyslexia, P5 stated, “I think just having three kids of my own. My oldest struggled a little bit with being able to write.” P4 reported in an interview response that she had a family member and a friend who had dyslexia, and she said that her contact with the learning disability through those individuals gave her “just a better understanding of the difficulties that they’ve had, and so then you reflect that on your kids that may also have an issue.” P3 stated in an interview response that sharing her own experiences of struggling with dyslexia with students who were similarly struggling helped her to connect with them empathetically and build their confidence:

> I know how hard [dyslexia] is. So, I try to be open and transparent with [students]. It’s hard for them to wrap their brains around it at this age. It’s oftentimes quite funny when I tell them, “Hey, I struggled with this, and I even had to do fourth grade twice.” I mean everyone has struggles, and they’re like, “Wait, really, you?” So, I do have those conversations with them, and I try to just build them up.

All five participants also drew extensively on their own on-the-job experiences to overcome the barriers associated with insufficient training and provide adequate support to students with dyslexia. P2 stated of her competence in supporting students with dyslexia, “It’s all on-the-job training on that.” P3 stated in an interview response that she

learned specific skills for supporting students with dyslexia "through my years here teaching reading," and P4 referred to training shortfalls in her interview in stating, "Since [supporting students with dyslexia is] not directly taught to you in the education process of getting a degree, it is on-the-job training." P4 added of the effect of on-the-job training on her ability to use a specific program (mCLASS): "After using it for a year, I feel fairly confident that it is a good program, and I can implement it." P5 added in an interview response that on-the-job training was enhanced through "experience in watching teachers that I have seen with a higher success rate in their classroom and just asking lots of questions."

In summary, whether participants obtained their certification through a traditional or alternative program, their education included little or no instruction in how to support students with dyslexia. District-sponsored professional development in how to support students with dyslexia was perceived as minimal and as consisting more of instruction in how to locate resources than in how to utilize them. To address their training gaps in order to support their students with dyslexia effectively, participants learned through their own research and through on-the-job experience.

Theme 3: The Barrier of Insufficient Access to the Dyslexia Specialist Is Addressed Through Communication and Collaboration

Participants reported that they occasionally encountered barriers to supporting students with dyslexia associated with insufficient access to the dyslexia specialist, due to the specialist's demanding schedule and limited availability. Participants wanted to collaborate more closely with the dyslexia specialist to support effective implementation of appropriate, targeted interventions for students with dyslexia in their classrooms.

Participants partly overcame this barrier through collaboration and communication with other teachers, but that they felt that additional access to the dyslexia specialist would further improve their own support for their students with dyslexia. It should be noted in relation to the responses quoted as evidence of this theme that participants used the titles "dyslexia specialist," "dyslexia interventionist," and, "dyslexia teacher" interchangeably and that all three titles refer to the same specialization.

A support barrier cited by all five participants was that students with dyslexia were most effectively supported by working directly with a dyslexia specialist, but that students did not have constant access to that specialist. Instead, students were occasionally pulled out of class to work with the dyslexia specialist. This created communication barriers because participants were not with the student when he or she met with the dyslexia specialist, and the dyslexia specialist was not with the student in class to observe challenges there and suggest solutions. P2 expressed the perception in a focus group response that it would be beneficial to students with dyslexia if a specialist could observe them in the classroom and communicate regularly with the teacher about solutions:

> It would be ideal for the dyslexia specialist to be able to see how the student is performing across all subjects to just get a better sense of where the kid is at and what they need help with. And that instant help with tips for the teacher [if the dyslexia specialist visited the classroom to observe] would be amazing because I know every teacher wants their kids to be successful, and sometimes, we don't know exactly the specific thing to do.

However, P2 added in the same focus group response that these proposed enhancements to the support teachers received was “a thing that no one ever talks about.” P3 corroborated P2’s perception that collaboration between teachers and dyslexia specialists was insufficient in stating in a focus group response, “The collaboration with the dyslexia specialist, I think that that needs to happen more.” P3 said in an interview response of students with dyslexia in relation to the supports they needed, “I don’t feel like they have that many resources. I feel like they get quite a bit going to their dyslexia teacher, but in the classroom, I don’t feel as if there is as much as there should be.” P3 added that classroom support deficits for students with dyslexia existed in part because, “I would say that the communication between me and that dyslexia teacher is not as strong as I would like . . . what was lacking was the communication between her and I.” P5 expressed concern that she did not have knowledge of narrowly targeted instructional methods that the dyslexia specialist was able to use when she stated, “I just feel like I’m cheating them because I don’t have all those magic tricks.” P4 provided a representative response in expressing in her member check the perception that collaboration between teachers and the dyslexia specialist should be far more in-depth than at present:

> The support for students with dyslexia should be a collaboration between the dyslexia interventionist and the classroom teacher. This would enable the student to be best supported and achieve success in reading as well as to increase their self-confidence. This can be achieved by the continuous communication between the interventionist and the classroom teacher . . . I think the time that would be the best to be doing that is the small group . . . [but] I don’t know how the interventionist can fit that in their schedule.

As P4's response suggested, participants did not associate their insufficient access to the dyslexia specialist with any dereliction on the specialist's part but with the many competing demands on the specialist's time. Participants partly compensated for the lack of the level of collaboration described in P4's quoted interview response by taking every opportunity to seek the dyslexia specialist's advice. In a focus group response, P1 stated of the dyslexia specialist, "She's been an amazing resource for us," and she reported speaking with the specialist whenever an opportunity arose. P1 reported that she obtained a valuable instructional resource by asking the dyslexia specialist ("a simple, little phonemic awareness packet. It's on a ring you can take"), but that her access to this resource depended on her occasional, chance opportunities to ask questions of the specialist: "I've used that [resource] a lot, like prior to doing our mCLASS activities, but I would have never known about that had I not asked." In an interview response, P1 said of her ability to support a student with dyslexia in her classroom, "That has just been picking the brain of our dyslexia specialist." P2 said of her ability to support students with dyslexia in her classroom, "It's always good to have that communication open with the dyslexia specialist. I've been able to get tips from them." P5 said in an interview response of her collaborations with dyslexia specialists,

> I have found that where students are struggling it sometimes helps try different "tricks" to try in your own class. I have been lucky enough to have formed relationships with the current dyslexia teacher, as well as the incoming dyslexia teacher. I know that when I question the work or reading mistakes of my students, these two ladies most often have an idea to help.

When participants could not gain all the access they needed to the dyslexia specialist, they partly compensated by collaborating and communicating with other teachers. P5 reported in a focus group response on valuable collaborations with other participants in this study:

> Collaboration is huge. If I had not had Participant 4 and Participant 2, with some of my kiddos, I know I would have just been beside myself. And those kids would not have benefited. And sometimes I know we fight it, but trading kids and sharing what I see and just having like Participant 4 confirm, "Yes, [dyslexia] is definitely what we see with this kid," or Participant 2 going, "Yep," and Participant 2 was good about like just walking in my room. I think that collaboration is huge. It's tremendous . . . I know that I can go ahead and pick your brains.

In summary, participants described their limited collaboration with dyslexia specialists as highly beneficial in enabling them to better support their students with dyslexia. During brief encounters, specialists were able to provide teachers with valuable strategies and resources that helped participants support the success of students with dyslexia more effectively in their classrooms. All five participants found the dyslexia specialist's advice so helpful that they wanted more contact with the specialist, including for the specialist to visit their classrooms and observe their students during small group time. Participants perceived the specialist's demanding schedule as prohibiting this level of support, however. To partly compensate for the dyslexia specialist's limited availability, participants collaborated and communicated with other teachers.

Summary

The research question used to guide this study was: How do first grade teachers support students with dyslexia in acquiring early foundational literacy skills? Three themes were identified during data analysis to address the research question. The first theme was: student skill deficits are addressed through extra support for foundational skills. Findings indicated that all students received district-guided instructional support in foundational skill development. Learning difficulties with environmental or other causes, including dyslexia, could result in deficits in foundational skill acquisition in first grade students. A strong indicator of dyslexia was foundational skill acquisition deficits, confined specifically to reading and writing, in students who were otherwise as cognitively advanced as their peers. When participants observed and documented that indicator in a student consistently over time, they would refer the student for testing for dyslexia to determine whether additional supports would be appropriate. Additional supports might include interventions with a dyslexia specialist. To address foundational skill deficits in the classroom, participants provided extra support daily, typically in the form of small group repetition and reinforcement. Extra support was used both to strengthen foundational skills and to build confidence in learners whose difficulties might otherwise lower their self-efficacy.

The second theme was: teacher training deficits are addressed through experience and self-directed learning. Participants indicated that a barrier to providing support to first grade students with dyslexia was that teacher education and training did not adequately prepare teachers to provide that support. Additionally, participants reported that they received minimal training in delivering district-specific curriculum. To

compensate gaps in their initial education and training in order to provide support to first grade students with dyslexia, participants reported that they relied on experience and self-directed learning. Self-directed learning consisted of participants doing their own research on their own time using sources that provided them with direction in how to support learners with dyslexia. The experience participants drew from to improve their support for students with dyslexia was both personal and on-the-job. Personal experiences associated with having or knowing people who had dyslexia facilitated participants' understanding of and empathetic connection for students with dyslexia. On-the-job experience allowed teachers to learn support skills and to become comfortable in delivering district curriculum.

The third theme was: the barrier of insufficient access to the dyslexia specialist is addressed through communication and collaboration. Participants reported that they occasionally encountered barriers to supporting students with dyslexia associated with insufficient access to the dyslexia specialist, due to the specialist's demanding schedule and limited availability. Participants wanted to collaborate more closely with the dyslexia specialist to support effective implementation of appropriate, targeted interventions for students with dyslexia in their classrooms. Participants partly overcame this barrier through collaboration and communication with the dyslexia specialist and other teachers, but that they felt that additional access to the dyslexia specialist would further improve their own support for their students with dyslexia. Chapter 5 includes a discussion and recommendations based on these themes.

Chapter V

Summary, Implications, Recommendations, and Conclusions

The problem addressed in this study was that despite its high prevalence and associated adverse effects on academic and future career success, little was known about how educators support students with dyslexia to improve their academic outcomes. In addition, the study sought to investigate the extent to which knowledge gaps among teachers regarding dyslexia influence their support level to students. Failure to address the current problem could result in low academic performance and underachievement in students compared to their typical counterparts.

The purpose of this qualitative case study was to examine how first grade teachers support students with dyslexia in developing early foundational literacy skills. Additionally, the researcher sought to investigate the importance of teacher preparation and culturally responsive pedagogy in an effort to identify the specific needs of students with dyslexia. The study was guided by the following research question: How do first grade teachers support students with dyslexia in acquiring early foundational literacy skills?

A qualitative research methodology was selected to guide the study. The researcher selected a qualitative research methodology because the intent was to investigate the participants' views, opinions, perceptions, and experiences in supporting first grade students with dyslexia in developing early foundational literacy skills. Therefore, a qualitative case study approach allowed the researcher to offer in-depth descriptions of the strategies that first grade teachers use to support students with dyslexia. The study findings revealed that first grade teachers provide support to their

students with dyslexia in various ways including repetition and reinforcement of foundational skills during small group times. To address the knowledge gap in their practice, first grade teachers consulted with professionals and other teachers to gain a detailed understanding of dyslexia and the unique needs that students have, as well as the possible resources to be used to address the identified needs.

Discussions and Interpretations

In this section, the researcher presents a discussion and interpretation of the study findings. To achieve this, the researcher will address the study findings thematically. Guided by the research question, the researcher will present several themes that emerged from the participants' responses and the extent to which the themes address the research question.

RQ: How do first grade teachers support students with dyslexia in acquiring early foundational literacy skills?

In an effort to address the research problem, the researcher sought to address the following research question: How do first grade teachers support students with dyslexia in acquiring early foundational literacy skills? The focus of this research question was to identify various ways in which first grade teachers support their students in developing early literacy foundational skills when a student has dyslexia or is suspected of having dyslexia. Based on the study findings, three themes emerged from the data analysis: student skill deficits are addressed through extra support for foundational skills, teacher training deficits are addressed through on-the-job experience and self-directed learning, and the barrier of sufficient access to the dyslexia specialist is addressed through

communication and collaboration. Each of the themes is discussed below and how it addresses the research question.

Theme 1: Student skill deficits are addressed through extra support for foundational skills.

The first theme revealed that first grade teachers identified and addressed students' skills and deficits using small group time to provide support for foundational skills. The study findings suggest that students with dyslexia or suspected of having dyslexia receive accommodations and instruction for foundational skills development. Study findings revealed that difficulties in foundational skills acquisition could potentially result in difficulty meeting grade level expectations in reading among students with dyslexia or suspected of having dyslexia.

To increase early foundational literacy skills in students with dyslexia or students suspected of having dyslexia, first grade teachers offered them daily instruction and reinforcement. According to the findings, first grade teachers support students with dyslexia or suspected of having dyslexia to improve their reading skills by providing reading interventions.

The study findings imply that first grade teachers could support phonemic awareness in students with dyslexia by supporting them, to develop foundational skills in reading and pronouncing words on their own. This can be done through dedicating extra support to the acquisition of phonemic awareness through reinforcement techniques, screening and referring students for external support for further development, using instructional strategies that improve students' confidence, and instructing students with dyslexia in small groups for easy management, identification, and remediating deficits.

The theme addresses the research question that sought to address ways in which first grade teachers support early foundational literacy skills development among students with dyslexia. In particular, the researcher established the reinforcing of foundational skill development, building of confidence, using student-centered instruction of phonemic awareness, using short duration and small groups, screening and referring students for external support, and dedicating more time to help students becoming more phonemically aware as the major ways through which first grade teachers supported early foundational literacy skills among students with dyslexia.

Theme 2: Teacher training deficits are addressed through experience and self-directed learning.

The second theme revealed that the major barrier to offering support to first grade students with dyslexia or suspected having dyslexia is limited skills or tools among teachers. According to the findings, study participants revealed that they receive limited training in delivering specific district programs to students. To address this gap in skills, first grade teachers preferred relying on their experiences and self-directed learning. Participants noted that through the self-directed learning process, they would conduct research on their own on dyslexia to understand the challenges students face and approaches that can be used to support early foundational literacy skills development among learners.

Additionally, participants noted that they would use their experience obtained from teaching to support phonemic awareness and other early foundational literacy skills in students with dyslexia or suspected of having dyslexia. According to the study findings, their experiences teaching students over the course of their careers partially

helped in their ability to teach students with dyslexia or suspected of having dyslexia to learn the early foundational literacy skills as well as become confident in delivering district curriculum. Important to emphasize from the study findings is that initial training had limited effects on the support that teachers could provide to students with dyslexia. In this regard, the study findings revealed the need for extra training, including job training, mentorship, and professional development. Additionally, the study findings revealed that teachers would address their skill gap through personal experience.

Theme 3: Barriers to insufficient access to dyslexia specialists are addressed through communication and collaboration.

The last theme of the study demonstrated that due to limited access to dyslexia specialists for support, teachers would communicate and collaborate with other teachers. In view of the study findings, participants revealed that they often encountered multiple barriers in supporting students with dyslexia, including limited access to dyslexia specialists. The majority of the study participants noted that dyslexia specialists' schedules were highly demanding, making them less available for consultation on key issues relating to early foundational literacy skills in students with dyslexia in their classrooms.

However, limited access with dyslexia specialists was addressed through communication and collaboration with other teachers. Based on the study findings, participants were willing to collaborate to effectively implement various support processes that would help students with dyslexia or suspected of having dyslexia improve their academic outcomes. The lack of meetings with dyslexia specialists could be addressed through means such as collaboration and communication with other teachers to

improve teachers' knowledge base in helping students with dyslexia or suspected of having dyslexia. Through communication and collaboration, teachers would increase their knowledge base on dyslexia and effective interventions that can be used to address foundational literacy skill deficits in students with dyslexia.

The analysis conducted revealed that there are different strategies that teachers use to support students with dyslexia or suspected of having dyslexia. These supports included: addressing skill deficits through support for foundational skills that include screening and referring for external support, using the district-supported curriculum, using instructional approaches that support students' confidence, dedicating more time for reinforcement of skills, and remaining culturally sensitive throughout the instructional process.

In addition, the study findings revealed that teachers' training deficits are another major issue that affects their ability to help students with dyslexia or suspected of having dyslexia to gain early foundational literacy skills. To address this problem, teachers preferred using their teaching experiences and self-directed learning to gain additional knowledge on how to support students with dyslexia or suspected of having dyslexia. Lastly, the researcher found that barriers to access dyslexia specialists by first grade teachers could be addressed through communication and collaboration with other teachers.

Implications of the Study Findings

The study results have several implications both for practice and social change. The study results suggested that students' skill deficits could be addressed through extra support for foundational skills. The main forms of extra support include using district-

guided instructional support to increase foundational skills in students with dyslexia or suspected of having dyslexia, devoting more time to develop phonemic awareness and other foundational literacy skills among students, meeting frequently and collaborating with dyslexia specialists and other teachers, and being culturally sensitive throughout the teaching process.

The study findings imply that first grade teachers must use different ways to identify several problems inhibiting early foundational literacy skills among students with dyslexia. Teachers could use the study results to implement student-centered strategies that promote phonemic awareness and other foundational literacy skills in students with dyslexia or suspected of having dyslexia. Second, the study results imply that the acquisition of foundational skills plays an important role in students with dyslexia or suspected of having dyslexia in meeting expected grade level reading proficiency.

To achieve the acquisition of foundational skills in students with dyslexia or suspected of having dyslexia, the study findings imply that teachers need to build confidence in students, devote more time to reinforce early foundational literacy skills, screen and refer students to external support, and use district-supported curriculum.

The study findings also imply that there are several strategies that teachers can use to reduce the skill gap among students with dyslexia or suspected of having dyslexia. In particular, the study findings revealed that a lack of teacher training could be addressed through their experiences teaching over the course of their careers in working with students with dyslexia and self-directed learning. The implication is that teachers could use their own experiences teaching students as well as self-directed learning

experiences to improve their knowledge base in supporting students with dyslexia or suspected of having dyslexia.

Limitations

The study had several limitations. The first limitation of the study relates to the use of a qualitative case study design that was used to guide the study. A qualitative case study design was used to allow participants to share their thoughts, experiences, and perceptions. The problem with qualitative research design is that participants use self-reported data that could be prone to bias. The second is the use of a small sample size. The researcher used a sample of five participants which can be considered limited. In addition, all of the teachers work in a public suburban school district and were from the researcher's professional/social network, which may mean that their experiences may not be representative of the experiences of teachers in other districts.

Recommendations

Policy-makers

Based on the findings, it is recommended that more training be provided to pre-service teachers as well as those currently teaching to ensure that students with dyslexia or suspected of having dyslexia are receiving the supports they need to develop early foundational literacy skills that will enable them to become effective readers. To accomplish this, more efforts should be made to require teacher preparation programs and school districts to provide comprehensive training to enable teachers to meet the needs of students with dyslexia or suspected of having dyslexia. Moats (2009) has expressed concern with the preparation and professional development of teachers responsible for preventing and remediating reading and spelling disabilities, as she has found many

teachers who feel unprepared to meet the needs of students experiencing difficulties with learning how to read. The findings in the current study continue to support previous literature regarding this issue.

Principals

The results of this study indicate that there is a need for campus principals to create opportunities for first grade teachers to be able to regularly consult with dyslexia specialists for the purpose of identifying additional strategies, supports, and resources that can be used to support early literacy foundational skills development in students with dyslexia or suspected of having dyslexia. It is recommended that campus principals take steps to ensure that collaboration and communication occurs between supporting staff members.

Teachers

For teachers, it is recommended that they continue to seek out opportunities to collaborate and communicate with knowledgeable teachers when they are unable to consult with dyslexia specialists and other reading specialists. In addition, it is recommended that teachers share their areas of weakness or areas in which they are not as comfortable teaching with their campus principals to ensure that training and mentorships can be provided. This will allow teachers to grow professionally and help ensure that students with dyslexia or suspected of having dyslexia are being educated by teachers who are effective in remediating reading difficulties.

Parents

Participants in this study shared how important it is for communication and collaboration to occur between teachers and parents to increase reading proficiency. In

addition, it was shared that students should be reading at home in order to help obtain a recommended number of minutes per day. Therefore, it is recommended that parents seize every opportunity to communicate with teachers to ensure that their children are making adequate progress in developing early foundational literacy skills, and that strategies and resources are being shared for children to utilize at home with their parents.

Future Research

This study recruited participants using a convenience sampling from the researcher's professional/social network. Due to the small sample size in this study, it is recommended that future studies recruit more participants. Small sample size has limitations when it comes to transferability or generalizability to other settings. To address this, it is recommended that future researchers replicate the current study using a diverse sample. In addition, it is recommended that in the replication of the current study that the researcher recruit participants that are not part of the researcher's professional/social network.

Conclusion

There are millions of children in the United States that have dyslexia and experience challenges developing or acquiring basic academic skills. Despite the prevalence of dyslexia among children, teachers and educators often lack adequate knowledge in supporting students with dyslexia. The purpose of this qualitative descriptive study was to identify the strategies first grade teachers use to support students with dyslexia in acquiring early foundational literacy skills. A qualitative case study design was selected to understand the potential experiences of first grade students with dyslexia through the perceptions of teachers that support and manage their instruction.

The findings indicated that participants provided extra support to their students with dyslexia, particularly through repetition and reinforcement of foundational skills during small group time. However, participants encountered barriers in supporting students with dyslexia associated with inadequate education and training and with the limited availability of the dyslexia specialist. Participants partly overcame education and training gaps through self-directed learning and on-the-job experience, and they partly overcame support gaps through collaboration with other teachers and initiating as much contact as possible with the dyslexia specialist to seek guidance and resources.

It is evident from this study that teachers of students with dyslexia try to provide adequate instruction. However, teachers of students with dyslexia could benefit from additional support and collaboration from supporting staff members as teachers responsible for teaching children to read have not received adequate education and training to be effective when faced with students that have dyslexia. A critical element in enhancing the reading performance of children is to improve the teaching of teachers (Treiman, 2018).

References

Adams, M. J. (1990). *Beginning to read: Thinking and learning about print*. Cambridge, MA: The MIT Press.

Al-Bataineh, A., & Sims-King, S. (2013). The effectiveness of phonemic awareness instruction to early reading success in kindergarten. *International Journal of Arts & Sciences*, *6*(4), 59–76.

Alhumsi, M. H. (2020). THE INFLUENCE OF PHONEMIC AWARENESS INSTRUCTION ON EFL EMERGENT READERS'WORD RECOGNITION. *Language Literacy: Journal of Linguistics, Literature, and Language Teaching*, *4*(1), 1-14.

American Institutes for Research (2019). *Dyslexia and related disorders reporting study*. https://tea.texas.gov/sites/default/files/DyslexiaIDReportStudyReport-508Compliant.pdf

Ansari, D., De Smedt, B., & Grabner, R. H. (2011). Neuroeducation – a Critical overview of an emerging field. *Neuroethics*, *5*(2), 105–117. https://doi.org/10.1007/s12152-011-9119-3

Antonacci, P. A. & O'Callaghan, C. M. (2012). Multisensory mapping. In *Promoting literacy development: 50 research-based strategies for K–8 learners* (pp. 10-13). Thousand Oaks, CA: SAGE Publications, Inc. doi: 10.4135/9781452230634.n2

Antonacci, P. A. & O'Callaghan, C. M. (2012). Picture card snap. In *Promoting literacy development: 50 research-based strategies for K–8 learners* (pp. 14-17). Thousand Oaks, CA: SAGE Publications, Inc. https://doi.org/doi: 10.4135/9781452230634.n3

Austin, M., & Morrison, C. (1963). *The first R: the Harvard report on reading in elementary schools*. New York: Macmillan.

Banks, J. A., & Banks, C. A. M. (Eds.). (2019). *Multicultural education: Issues and perspectives*. John Wiley & Sons.

Barnes, T. N., & McCallops, K. (2019). Perceptions of culturally responsive pedagogy in teaching SEL. *Journal for Multicultural Education*, *13*(1), 70–81. https://doi.org/10.1108/jme-07-2017-0044

Brady, S. (2011). Efficacy of phonics teaching for reading outcomes: Indications from post-NRP research. In S. Brady, D. Braze, & C. Fowler (Eds.), *Explaining individual differences in reading: Theory and evidence* (pp. 69–96). New York, NY: Psychology Press.

Brady, S., Moats, L., & International Dyslexia Association, B. (1997). *Informed Instruction for Reading Success: Foundations for Teacher Preparation. A Position Paper of the International Dyslexia Association*. International Dyslexia Association.

Braun, V., Clarke, V., Terry, G., Rohleder, P., & Lyons, A. (2014). Qualitative research in clinical and health psychology. *Qualitative research in psychology*, *3*(2), 77-101.

Brulé, E., Bailly, G., Brock, A., Gentès, A., & Jouffrais, C. (2018). An Exploratory Study of the Uses of a Multisensory Map—With Visually Impaired Children. *Multimodal Technologies and Interaction*, *2*(3), 36. https://doi.org/10.3390/mti2030036

Castillo, A., Gilger, J.W. Adult perceptions of children with dyslexia in the USA. *Ann. of Dyslexia* 68, 203–217 (2018). https://doi.org/10.1007/s11881-018-0163-0

Castle, J. M., Riach, J., & Nicholson, T. (1994). Getting off to a better start in reading and spelling: The effects of phonemic awareness instruction within a whole language program. *Journal of Educational Psychology*, *86*(3), 350–359. doi: 10.1037/0022-0663.86.3.350

Cheesman, E. A., Mcguire, J. M., Shankweiler, D., & Coyne, M. (2009). First-Year Teacher Knowledge of Phonemic Awareness and Its Instruction. *Teacher Education and Special Education: The Journal of the Teacher Education Division of the Council for Exceptional Children*, *32*(3), 270–289. doi: 10.1177/0888406409339685

Cheesman, E., & Pry, R. D. (2010). A Critical review of culturally responsive literacy instruction. *Journal of Praxis in Multicultural Education*, *5*(1). https://doi.org/10.9741/2161-2978.1034

Clymer, T. (1963). The Utility of Phonic Generalizations in the Primary Grades [with Comment]. *The Reading Teacher*, *16*(4), 252–258.

Cohen, R. A., Mather, N., Schneider, D. A., & White, J. M. (2016). A comparison of schools: teacher knowledge of explicit code-based reading instruction. *Reading and Writing*, *30*(4), 653–690. doi: 10.1007/s11145-016-9694-0

Creswell, J. W. (2014). *Research design: qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.

D'Mello, A., & Gabrieli, J. (2018). Cognitive Neuroscience of Dyslexia. (Tutorial Report). *Language, Speech, & Hearing Services in Schools*, *49*(4), 798–809. https://doi.org/10.1044/2018_LSHSS-DYSLC-18-0020

Day, L., & Beard, K. V. (2019). Meaningful inclusion of diverse voices: The case for culturally responsive teaching in nursing education. *Journal of Professional Nursing*, *35*(4), 277-281. https://doi.org/10.1016/j.profnurs.2019.01.002

Dejerine, J. (1891). Sur un cas de cécité verbale avec agraphie suivi d'autopsie. *Mémoires de la Société de Biologie, 3*, 197-201. https://pure.mpg.de/rest/items/item_2310098/component/file_2453477/content

Dessemontet, R. S., Chambrier, A.-F. D., Martinet, C., Moser, U., & Bayer, N. (2017). Exploring Phonological Awareness Skills in Children With Intellectual Disability. *American Journal on Intellectual and Developmental Disabilities*, *122*(6), 476–491. https://doi.org/10.1352/1944-7558-122.6.47

Dyslexia International. (2014). Better Training, Better Learning.

Ehri, L. C. (2014). Orthographic mapping in the acquisition of sight word reading, spelling memory, and vocabulary learning. *Scientific Studies of Reading*, 18(1), 5–21.

Ehri, L. C., & Flugman, B. (2017). Mentoring teachers in systematic phonics instruction: effectiveness of an intensive year-long program for kindergarten through 3rd grade teachers and their students. *Reading and Writing*, *31*(2), 425–456. doi: 10.1007/s11145-017-9792-7

Ehri, L. C., Nunes, S. R., Stahl, S. A., & Willows, D. M. (2001). Systematic Phonics Instruction Helps Students Learn to Read: Evidence from the National Reading Panel's Meta-Analysis. *Review of Educational Research, 71*(3), 393–447. doi: 10.3102/00346543071003393

Emans, R. (1968). History of Phonics. *Elementary English, 45*(5), 602–608.

Feifer, S. G., & Della Toffalo, D. A. (2007). *Integrating Rti with cognitive neuropsychology: a scientific approach to reading*. Middletown, MD: School Neuropsych Press.

Felton, R. H., & Pepper, P. A. (1995). Early Identification and intervention of phonological deficits in kindergarten and early elementary children at risk for reading disability. *School Psychology Review*, *24*(3), 405–414.

Gabrieli, J. D. (2009). Dyslexia: A New Synergy Between Education and Cognitive Neuroscience. *Science*, *325*(5938), 280–283. https://doi.org/10.1126/science.1171999

Garland, K., & Bryan, K. (2017). Partnering with families and communities: Culturally responsive pedagogy at its best. *Voices from the Middle*, *24*(3), 52. https://search.proquest.com/docview/1876465387?pqorigsite=gscholar&fromopenview=true

Glazzard, J. (2017). Assessing reading development through systematic synthetic phonics. *English in Education*, *51*(1), 44–57. https://doi.org/10.1111/eie.12125

Goswami, U. (2004). Neuroscience and education. *British Journal of Educational Psychology, 74*(1), 1–14. https://doi.org/10.1348/000709904322848798

Gough, P., & Hillinger, M. (1980). Learning to read: an unnatural act. Bulletin of the Orton Society, 30(1), 179–196. https://doi.org/10.1007/BF02653717

Graaff, S. D., Bosman, A. M., Hasselman, F., & Verhoeven, L. (2009). Benefits of Systematic Phonics Instruction. *Scientific Studies of Reading*, *13*(4), 318–333. doi: 10.1080/10888430903001308

Handler, S. M. (2016). Dyslexia: What you need to know. *Contemporary Pediatrics*, *33*(8), 18.

Hanford, E. (2020, June 19). *States' laws to support dyslexic children mostly lack funding, accountability, training mandates*. Hard to Read | APM Reports. https://www.apmreports.org/story/2017/10/24/dyslexia-laws-by-state.

Hulme, C., & Snowling, M. J. (2016). Reading disorders and dyslexia. *Current Opinion in Pediatrics*, *28*(6), 731–735. https://doi.org/10.1097/mop.0000000000000411

Individuals with Disabilities Education Act (IDEA). (2020). *About IDEA.* https://sites.ed.gov/idea/about-idea/#:~:text=The%20Individuals%20with%20Disabilities%20Education,related%20services%20to%20those%20children.

Indrarathne, B. (2019). Accommodating learners with dyslexia in English language teaching in Sri Lanka: Teachers' knowledge, attitudes, and challenges. *Tesol Quarterly*, *53*(3), 630-654. https://doi.org/10.1002/tesq.500

International Dyslexia Association. (2019). *IDA dyslexia handbook what every family should know.* International Dyslexia Association

Islam, C., & Park, M. H. (2016). Strategies to enhance kindergarten children's reading comprehension. *International Journal of Language and Linguistics*, *3*(2), 39-43.

Johnson, K. (2020, July 8). *Senator Robert E. Antonacci*. NY State Senate. https://www.nysenate.gov/senators/robert-e-antonacci.

Johnston, R., McGeown, S., & Watson, J. (2012). Long-term effects of synthetic versus analytic phonics teaching on the reading and spelling ability of 10 year old boys and girls. Reading and Writing, 25(6), 1365–1384. https://doi.org/10.1007/s11145-011-9323-x

Joshi, R. M., Dahlgren, M., & Boulware-Gooden, R. (2002). Teaching reading in an inner city school through a multisensory teaching approach. *Annals of Dyslexia*, *52*, 229–242. https://doi.org/10.1007/s11881-002-0014-9

Kapon, S. (2016). Doing research in school: Physics inquiry in the zone of proximal development. *Journal of* Research *in Science Teaching*, *53*(8), 1172-1197. https://doi.org/10.1002/tea.21325

Knoop-van Campen, C. A., Segers, E., & Verhoeven, L. (2018). How phonological awareness mediates the relation between working memory and word reading efficiency in children with dyslexia. *Dyslexia*, *24*(2), 156–169. https://doi.org/10.1002/dys.1583

Laird, D. (1985). *Approaches to training and development* (Second edition.). Addison-Wesley Pub. Co.

Lederberg, A. R., Branum-Martin, L., Webb, M.-young, Schick, B., Antia, S., Easterbrooks, S. R., & Connor, C. M. D. (2019). Modality and Interrelations Among Language, Reading, Spoken Phonological Awareness, and Fingerspelling. *The Journal of Deaf Studies and Deaf Education*, *24*(4), 408–423. https://doi.org/10.1093/deafed/enz011

Martin, F., Pirbhai-Illich, F., & Pete, S. (2017). Beyond Culturally Responsive Pedagogy: Decolonizing Teacher Education. *Culturally Responsive Pedagogy*, 235–256. https://doi.org/10.1007/978-3-319-46328-5_11

McCandliss, B. D., & Noble, K. G. (2003). The development of reading impairment: A cognitive neuroscience model. *Mental Retardation and Developmental Disabilities Research Reviews*, *9*(3), 196–205. https://doi.org/10.1002/mrdd.10080

McGeown, S., Johnston, R., & Medford, E. (2012). Reading instruction affects the cognitive skills supporting early reading development. Learning and Individual Differences, 22(3), 360–364. https://doi.org/10.1016/j.lindif.2012.01.012

McGraw Hill. (2021). *House bill 3: Texas curriculum and programs*. https://www.mheducation.com/prek-12/explore/states/texas/house-bill-3.html.

Mellom, P. J., Straubhaar, R., Balderas, C., Ariail, M., & Portes, P. R. (2018). "They come with nothing:" How professional development in a culturally responsive pedagogy shapes teacher attitudes towards Latino/a English language learners. *Teaching and Teacher Education*, *71*, 98–107. https://doi.org/10.1016/j.tate.2017.12.013

Moats, L. (2009). Knowledge foundations for teaching reading and spelling. *Reading and Writing*, *22*(4), 379–399. doi: 10.1007/s11145-009-9162-1

Moats, L. (2009). Still Wanted: Teachers with knowledge of language. *Journal of Learning Disabilities*, *42*(5), 387–391. doi: 10.1177/0022219409338735

Moats, L. C. (2020). *Speech to print: Language essentials for teachers* (3rd ed.). Paul H. Brookes Publishing.

Morin, A. (2019, October 4). *Dyslexia Laws: What They Are and How They Work*. Understood. https://www.understood.org/en/school-learning/your-childs-rights/basics-about-childs-rights/dyslexia-laws-what-they-are-and-how-they-work.

Moustafa, M., & Maldonado-Colon, E. (1999). Whole-to-Part Phonics Instruction: Building on What Children Know to Help Them Know More. *Reading Teacher*, *52*(5), 448–458.

National Reading Panel. (2000). *Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction*. (NIH Publication No. 00-4754). Washington, DC: U.S. Government Printing Office

Ndemanu, M. T., & Jordan, S. (2018). Culturally responsive pedagogy for African immigrant children in US P-12 schools. *Journal of Black Studies, 49*(1), 71-84. https://doi.org/10.1177%2F0021934717736065

O'Byrne, C., Jagoe, C., & Lawler, M. (2019). *Experiences of dyslexia and the transition to university: a case study of five students at different stages of study. Higher Education Research & Development, 1–15.* doi:10.1080/07294360.2019.1602595

Patscheke, H., Degé, F., & Schwarzer, G. (2018). The effects of training in rhythm and pitch on phonological awareness in four- to six-year-old children. *Psychology of Music*, *47*(3), 376–391. https://doi.org/10.1177/0305735618756763

Pfost, M. (2015). Children's Phonological Awareness as a Predictor of Reading and Spelling. *Zeitschrift Für Entwicklungspsychologie Und Pädagogische Psychologie*, *47*(3), 123–138. https://doi.org/10.1026/0049-8637/a000141

Poldrack, R. A., & Sandak, R. (2004). Introduction to this special issue: The cognitive neuroscience of reading. *Scientific Studies of Reading*, *8*(3), 199–202. https://doi.org/10.1207/s1532799xssr0803_1

Rack, J., Hulme, C., Snowling, M., & Wightman, J. (1994). The role of phonology in young children's learning of sight words: The direct-mapping hypothesis. *Journal of Experimental Child Psychology*, 57, 42–71.

Rayner, K., Foorman, B., Perfetti, C., Pesetsky, D., & Seidenberg, M. (2001). How psychological science informs the teaching of reading. *Psychological Science in the Public Interest*, 2, 31–74.

Roth, W. M. (2020). Zone of proximal development in mathematics education. *Encyclopedia of mathematics education*, 913-916. https://doi.org/10.1007/978-3-030-15789-0_156

Rubin, H. J., & Rubin, I. S. (2012). Qualitative interviewing: The art of hearing data (3rd ed.). Thousand Oaks, CA: Sage.

Scarborough, H. S., Ehri, L. C., Olson, R. K., & Fowler, A. E. (1998). The Fate of Phonemic Awareness Beyond the Elementary School Years. *Scientific Studies of Reading*, *2*(2), 115–142. doi: 10.1207/s1532799xssr0202_2

Schoenherr, J. R. (2020, July). Adapting the zone of proximal development to the wicked environments of professional practice. In *International Conference on Human-Computer Interaction* (pp. 394-410). Springer, Cham. https://doi.org/10.1007/978-3-030-50788-6_29

Seidman, I. (2012). *Interviewing as qualitative research: A guide for researchers in education and the social sciences* (3rd ed.). New York, NY: Teachers College.

Senarath, S. Teachers' Knowledge about Dyslexia in Sri Lanka.

Shankweiler, D., & Fowler, A.E. (2004). Questions people ask about the role of phonological processes in learning to read. *Reading and Writing*, 18, 483-515.

Shaywitz, S., & Shaywitz, B. (2007). What neuroscience really tells us about reading instruction: A response to Judy Willis. Educational Leadership, 64(5), 74–73.

Snider, V. E. (1997). The Relationship Between Phonemic Awareness and Later Reading Achievement. *The Journal of Educational Research*, *90*(4), 203–211. doi: 10.1080/00220671.1997.10544574

Society for Neuroscience. (2020) *Dyslexia: What brain research reveals about reading*. http://www.ldonline.org/article/10784/#:~:text=A%20staggering%205%20to%2015,intelligent%20he%20or%20she%20is.

Suggate, S. P. (2014). A Meta-Analysis of the Long-Term Effects of Phonemic Awareness, Phonics, Fluency, and Reading Comprehension Interventions. *Journal of Learning Disabilities*, *49*(1), 77–96. https://doi.org/10.1177/0022219414528540

Sümer Dodur, H. M., & Altindağ Kumaş, Ö. (2020). Knowledge and beliefs of classroom teachers about dyslexia: the case of teachers in Turkey. *European Journal of Special Needs Education*, 1-17. https://doi.org/10.1080/08856257.2020.1779980

Stake, R. E. (1995). *The art of case study research*. Sage.

Texas Education Agency. (2020). *Guidelines for Examining Phonics & Word Recognition*. https://tea.texas.gov/sites/default/files/redbk3.pdf.

Texas Education Agency. (2020). *House bill 3*. https://tea.texas.gov/about-tea/government-relations-and-legal/government-relations/house-bill-3.

The Royal Society. (2011, February). *Brain Waves Module 2: Neuroscience: implications for education and lifelong learning*. Excellence in Science. https://www.interacademies.org/sites/default/files/publication/4294975733.pdf.

Tibi, S., & Kirby, J. R. (2017). Investigating Phonological Awareness and Naming Speed as Predictors of Reading in Arabic. *Scientific Studies of Reading*, *22*(1), 70–84. https://doi.org/10.1080/10888438.2017.1340948

Treiman, R. (2018). What Research Tells Us About Reading Instruction. Psychological Science in the Public Interest, 19(1), 1–4. https://doi.org/10.1177/1529100618772272

Tunmer, W. E., & Nicholson, T. (2011). The development and teaching of word recognition skill. In M. L. Kamil, P. D. Pearson, E. B. Moje, & P. P. Afflerbach (Eds.), *Handbook of reading research* (*Volume IV*) (pp. 405–431). New York, NY: Routledge.

Villaume, S., & Brabham, E. (2003). Phonics instruction: beyond the debate. (Question and Answer). *The Reading Teacher*, *56*(5), 478–482.

Volpe, G., & Gori, M. (2019). Multisensory Interactive Technologies for Primary Education: From Science to Technology. *Frontiers in Psychology*, *10.* https://doi.org/10.3389/fpsyg.2019.01076

Vygotski, L. S. (1978). *Mind in society: the development of higher psychological processes*. Harvard University Press.

Walsh, K., Glaser, D., Wilcox, D., & National Council on Teacher Quality. (2006). *What Education Schools Aren't Teaching about Reading and What Elementary Teachers Aren't Learning*. National Council on Teacher Quality.

Warren, C. A. (2017). Empathy, Teacher Dispositions, and Preparation for Culturally Responsive Pedagogy. *Journal of Teacher Education*, *69*(2), 169–183. https://doi.org/10.1177/0022487117712487

Washburn, E. K., Joshi, R. M., & Binks-Cantrell, E. S. (2011). Teacher knowledge of basic language concepts and dyslexia. *Dyslexia*, *17*(2), 165-183. https://doi.org/10.1002/dys.426

Wearmouth, J. (2017). Employing culturally responsive pedagogy to foster literacy learning in schools. *Cogent education*, *4*(1). https://doi.org/10.1080/2331186X.2017.1295824

Yin, R. (2014). *Case study research: Design and methods* (5th ed.). Sage.

Yoshikawa, L., & Yamashita, J. (2014). Phonemic Awareness and Reading Comprehension among Japanese Adult Learners of English. *Open Journal of Modern Linguistics*, *04*(04), 471–480. https://doi.org/10.4236/ojml.2014.44039

Youman, M., & Mather, N. (2012). Dyslexia laws in the USA. *Annals of Dyslexia*, *63*(2), 133–153. https://doi.org/10.1007/s11881-012-0076-2

Zirkel, P. A. (2020). Legal Developments for Students With Dyslexia. *Learning Disability Quarterly*, *43*(3), 127–139. https://doi.org/10.1177/0731948720931538

Appendix A

Institutional Review Board (UH)

UNIVERSITY of HOUSTON
DIVISION OF RESEARCH
Institutional Review Boards

APPROVAL OF SUBMISSION

November 4, 2020

Matthew Morris
mdmorris2@uh.edu

Dear Matthew Morris:

On October 28, 2020, the IRB reviewed the following submission:

Type of Review:	Initial Study
Title of Study:	First Grade Teachers' Support of Students with Dyslexia
Investigator:	Matthew Morris
IRB ID:	STUDY00002613
Funding/ Proposed Funding:	Name: Unfunded
Award ID:	
Award Title:	
IND, IDE, or HDE:	None
Documents Reviewed:	• IRB Appendix B.pdf, Category: Study tools (ex: surveys, interview/focus group questions, data collection forms, etc.); • IRB Appendix A.pdf, Category: Study tools (ex: surveys, interview/focus group questions, data collection forms, etc.); • IRB Appendix D.pdf, Category: Recruitment Materials; • IRB Appendix C.pdf, Category: Study tools (ex: surveys, interview/focus group questions, data collection forms, etc.); • Matthew Morris IRB Application.pdf, Category: IRB Protocol; • Informed Consent for Morris Study HRP-502a.pdf, Category: Consent Form; • Matthew Morris Letter Addressing Changes.pdf, Category: Other;
Review Category:	Expedited
Committee Name:	Designated Reviewer
IRB Coordinator:	Maria Martinez

UNIVERSITY of HOUSTON
DIVISION OF RESEARCH
Institutional Review Boards

The IRB approved the study on October 28, 2020; recruitment and procedures detailed within the approved protocol may now be initiated.

As this study was approved under an exempt or expedited process, recently revised regulatory requirements do not require the submission of annual continuing review documentation. However, it is critical that the following submissions are made to the IRB to ensure continued compliance:

- Modifications to the protocol prior to initiating any changes (for example, the addition of study personnel, updated recruitment materials, change in study design, requests for additional subjects)
- Reportable New Information/Unanticipated Problems Involving Risks to Subjects or Others
- Study Closure

Unless a waiver has been granted by the IRB, use the stamped consent form approved by the IRB to document consent. The approved version may be downloaded from the documents tab.

In conducting this study, you are required to follow the requirements listed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system.

Sincerely,

Research Integrity and Oversight (RIO) Office
University of Houston, Division of Research
713 743 9204
cphs@central.uh.edu
http://www.uh.edu/research/compliance/irb-cphs/

Appendix B

Individual Interview Questions

1. Describe how you became a teacher.
    a. Did you take a traditional or alternative route?
        i. Can you tell me a little bit about the training you received to be a teacher?
    b. Were you teaching other subjects or grade levels before becoming a first grade teacher?
        i. How many years were you a teacher of record before becoming a first grade teacher?
    c. What were your motivations into being a first grade teacher?
        i. Did you choose to be a first grade teacher or were you assigned the position?

2. How do you feel your teacher education program prepared you for working with students with dyslexia? Or- what do you think was lacking in the preparation program?

3. Approximately how many students are you currently serving with dyslexia or how many students do you currently think have dyslexia in your classroom?

4. On a scale of 1-10, one being the lowest and ten being the highest, how would you rate your self-efficacy in guiding successful outcomes for students with dyslexia or suspected of having dyslexia in developing the reading skills they need to become effective readers, including phonemic and phonological awareness?
    a. Can you share why you rated yourself the way that you did?

5. Can you describe how you feel about your abilities to effectively instruct students with dyslexia in comparison to other students in your classroom?

6. What is your understanding of phonemic and phonological awareness?
    a. How did you develop this knowledge (college, professional development, etc.)?
    b. Do you feel that your district provides sufficient training for first grade teachers in phonemic and phonological awareness instruction?

7. What is your understanding of phonics instruction?
    a. How did you develop this knowledge or understanding?

    b. Do you feel that your district provides sufficient training for first grade teachers in delivering quality phonics instruction?

8. What is your understanding of dyslexia?
    a. What signs do you look for or what do you notice about your students with dyslexia or suspected of having dyslexia?
    b. How did you develop this knowledge or understanding?
    c. Do you feel that your district provides sufficient training for teachers in supporting students with dyslexia in first grade classrooms?

9. What are the biggest challenges that students with dyslexia?
    a. In a school setting.
    b. In the family setting.
    c. In the social setting.

10. In your experience, how does dyslexia affect your students in other academic areas?
    a. What do you do to support them in other academic areas?
    b. Do you feel that these supports or strategies are effective?

11. In your experience, how much emphasis is placed on identifying students with dyslexia in your district?
    a. Do you think that most students are identified or do you think many of your students go undiagnosed?

12. Thinking back to when you first became a first grade teacher, were more or less students identified with dyslexia?
    a. Why do you think that is?

13. Do you feel adequately prepared to address the challenges and needs students with dyslexia or suspected of having dyslexia face?

14. Could you describe your experience supporting students who have dyslexia or who may have dyslexia?
    a. Are there specific strategies you use to support these students?
    b. Are there specific accommodations that you provide them in your classroom?

15. What steps do you take when you see a student is struggling with phonemic and phonological awareness?

16. Could you describe how you develop phonemic and phonological awareness in your students, particularly with students who struggle with this skill or who have dyslexia?
    a. Does your district use a specific curriculum or program to teach phonemic and phonological awareness?
        i. Do you feel that the curriculum or program is culturally responsive to the needs of students from different backgrounds?
    b. Did you receive specific training to use the curriculum or program?
    c. How comfortable are you with using the curriculum or program?
    d. Do you believe it is effective or are you seeing improvements in your students' phonemic and phonological awareness skills?
    e. How much time do you spend each day providing phonemic and phonological awareness instruction?

17. Could you describe an instance where you had success helping a student develop phonemic and phonological awareness?

18. What are your feelings on the reading interventions and instructional strategies that you are expected to implement for your students with dyslexia or suspected of having dyslexia?
    a. Do you believe students are learning, making progress, and getting the reading interventions and support they need in your first grade classroom?
    b. Do you believe that other first grade teachers in your district are providing instruction and interventions targeted at remediating the deficits students with dyslexia or suspected of having dyslexia in their first grade classrooms?
    c. What are the biggest strengths and weaknesses you have experienced with supporting these students in your classroom?

19. Are there any barriers you are currently facing or have faced supporting students with dyslexia?
    a. Do you believe the challenges you face directly impact your students with dyslexia or suspected of having dyslexia?

20. Could you describe an instance where you believed a child needed additional support developing phonemic and phonological awareness?
    a. Were you able to support that child, or do you think anything could have been done differently to better support that child?

21. What school resources are available to support a student that is struggling with phonemic and phonological awareness?

a. What resources do you think should be available but may not be?
b. Do you feel that the resources that are available are sensitive to the needs of culturally diverse student populations in your classroom and district?

22. How do you work with other supporters in a child's life (school administration, parents, etc.) to develop reading and writing skills when a child may be struggling with those skills?

23. How effective are your district's professional development offerings in regards to supporting students with dyslexia?
24. For your students with dyslexia that have had different cultural backgrounds from yourself, what culturally responsive teaching practices did you implement to bridge the gap to be a more effective teacher?
    a. If you have not experienced this, is your district offering professional development opportunities to help teachers support students from different cultures?

25. In what areas do you feel that you need more training in supporting students with dyslexia?

26. What are your goals for your students with dyslexia?
    a. How productive do you feel in meeting your goals?
    b. Is there anything preventing you from meeting the goals you have for your students?

27. How has COVID-19 impacted your first grade students with dyslexia or suspected of having dyslexia and your instruction?
    a. What are ways that you and your students are supported during this time?
    b. What are ways you need to feel supported?

28. Do you think there are any other factors that assisted in preparing you to work with students with dyslexia or suspected of having dyslexia?

29. Is there anything else you would like to discuss about the challenges you face teaching students with dyslexia in your first grade classroom or challenges your students with dyslexia face in your classroom?

Appendix C

Focus Group Questions

1. Most of you shared that you would like to have more training to better support students with dyslexia or suspected of having dyslexia. What are some trainings or professional development sessions you would be most interested in attending and what do you think would be helpful to you as a first grade teacher?

2. Some of you thought it would be important to collaborate with the campus dyslexia specialist when it comes to supporting students with dyslexia in your classrooms. What would be the most productive use of your time or what do you think would ensure that you are supporting your students with dyslexia by collaborating with the dyslexia specialist?

3. Some of you discussed the importance of having a program that teaches phonics explicitly and systematically. How important do you think this is and do you feel that having the opportunity to provide input to how first grade students should be taught foundational reading skills is imperative?

4. Most of you shared that your understanding of phonemic and phonological awareness, phonics, and dyslexia was developed on the job. However, you also shared that your training and professional development was minimal in these areas. Why do you think this is the case?

5. What do you believe is the best way for students with dyslexia or suspected of having dyslexia to be supported in the first grade general education classroom?

6. Some of you talked about hands-on resources or kinesthetic approaches. Do you believe hands-on resources or kinesthetic approaches to teaching foundational reading skills are effective at remediating deficits students with dyslexia have?
    a. If so, provide some examples of what you use in your classrooms.

7. What supports do you feel are most important in supporting students with dyslexia in your classrooms? Are there specific strategies or supports you use on a daily basis to help these students?

8. How important is it for you to have autonomy in teaching students with dyslexia the foundational skills they need to be successful readers? Do you think you should be able to use any resources that you feel would be effective for students?

9. Some of you mentioned that age is a barrier or challenge that you face in supporting students in your classroom. Is it hard for you to identify whether a student should be referred for dyslexia testing due to development factors? Please elaborate.

10. What is your biggest takeaway from this experience as far as how the district or campus can support you in feeling effective with teaching students with dyslexia or students suspected of having dyslexia.

Appendix D

List of Tables

Table D1

Participant Demographics

Partici-pant	Gender	Age range	Ethnicity	Certification route	Years of teaching experience	Years of first grade teaching experience	Self-efficacy rating
P1	Female	40-49	White	Alternative	3	3	< 5
P2	Female	30-39	White	Alternative	12	10	7.5
P3	Female	20-29	White	Traditional	3	3	6
P4	Female	50-59	White	Traditional	26	16	7
P5	Female	50-59	White	Alternative	23	17	8

Table D2

Grouping of Related, Initial Codes into Finalized, Emergent Themes

Theme Initial code grouped to form theme	*n* of data excerpts from focus group	*n* of data excerpts from individual interview	*n* of data excerpts from member check	Total
Theme 1. Student skill deficits are addressed through extra support for foundational skills	13	73	1	87
Building confidence	4	6		10
Culturally sensitive teaching practices		5		5
Daily time devoted to providing phonemic and phonological awareness instruction	1	6		7
Drawing on teacher motivation		4		4
Extra support with foundational skills	1	21	1	23

Theme Initial code grouped to form theme	*n* of data excerpts from focus group	*n* of data excerpts from individual interview	*n* of data excerpts from member check	Total
Screening and referral	2	7		9
Student underpreparedness	1	9		10
Using district supported curriculum	5	11		16
Watching for red flags		5		5
Theme 2. Teacher training deficits are addressed through experience and self-directed learning	6	60	9	75
Comfort with district specific curriculum		8		8
Drawing understanding from personal experience		6	1	7
Dyslexia-specific training and support is needed	2	16	4	22
Initial education and training does not prepare teachers	1	8	3	12
Learning on the job	1	6		7
Minimal training for district-specific curriculum	1	5		6
Self-teaching	1	4	1	6
Teacher confidence and efficacy increases with experience and training		9		9
Theme 3. The barrier of insufficient access to the dyslexia specialist is addressed through communication and collaboration	14	32	7	53
Collaboration and information-sharing	10	12	3	25
Communication with parents		3		3
Needing more classroom support	1	1		2
Resources supporting culturally sensitive instruction		11		11
Time as a barrier		4	2	6
Using manipulatives and movement	3	1	2	6