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IDENTIFYING TEACHERS' PERCEPTIONS AND BELIEFS OF DYSLEXIA AND THE  
INCLUSION OF STUDENTS WITH DYSLEXIA IN GENERAL EDUCATION

by

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## **Dedication**

My family whose words of encouragement and push for success guided me along the way. I also dedicate this dissertation to my many friends who have supported me through this process. I am extremely appreciative for all that they have done.

### **In Honor of**

My children, Clayton and Connor. You have made me stronger, better, and more fulfilled than I could have ever imagined. I love you both more than words could express.

To those who inspired it and will never read it...

Taurean D. Branford and Braylon E. Wilcott

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## ABSTRACT

### IDENTIFYING TEACHERS' PERCEPTIONS AND BELIEFS OF DYSLEXIA AND THE INCLUSION OF STUDENTS WITH DYSLEXIA IN GENERAL EDUCATION

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The purpose of this study was to investigate the perceptions of dyslexia and the beliefs of inclusion of students identified with dyslexia in the general education setting. The perceptions of general education and special education teachers were analyzed. Beliefs of inclusion held by general education teachers and dyslexia intervention specialists were also identified through face-to-face interviews. Analysis of the data revealed five themes which included general knowledge, training, instructional skills and strategies, programming, and social and emotional support. The findings from the study revealed that that teachers do not have a strong background knowledge of dyslexia, which indicates that additional work is necessary to support the teachers that work with students that have been had identified with dyslexia.

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## CHAPTER I

### INTRODUCTION

Each year schools put an emphasis on closing the achievement gap for their students. Struggling students are placed in a variety of interventions to assist them with meeting the rigorous educational expectations. Through targeted and intentional reading instruction, most children who have are having difficulties with reading will make growth. However, even with intentional, targeted instruction, there remains a group of students, who will continue to struggle and not make gains in their reading. Those students tend to fall further and further behind.

One in five students, or approximately 15% to 20%, of the population has a language-based learning disability (Moats & Dakin, 2008). Under the federal law, Individuals with Disabilities Education Act of 2004 (IDEA, 2004), a specific learning disability is one of the thirteen categories of disability (United States Department of Education, 2006). "Learning Disabilities" is an "umbrella" term describing many other, more specific learning disabilities, such as dyslexia and dysgraphia (Learning Disabilities Association of America, 2017). The most common of the language-based learning disabilities is dyslexia (Moats & Dakin, 2008). Dyslexia is defined as a specific learning disability that is neurobiological in origin (Lyon, Shaywitz, & Shaywitz, 2003). Dyslexia occurs in people of all backgrounds and intellectual levels (International Dyslexia Association, 2012).

## **Research Problem**

All research suggests that early identification of dyslexia is the key to providing students with early interventions that will lead to future academic success. Significant numbers of students with dyslexia go undiagnosed and their symptoms unaddressed, with tragic results, due largely to global lack of awareness and knowledge about this common learning difference (Dyslexia International, 2014). In the United States, the National Institute of Health research has shown that dyslexia affects five to 10 percent of the population; yet only one in 10 people with dyslexia receive services to needed to help support their reading (Dyslexia Help, 2015).

The challenge begins with teachers who, charged with recognizing and acting on early symptoms, become gatekeepers of the initial diagnosis. This is a problem because they are often overwhelmed by their other responsibilities and underprepared to recognize the symptoms of dyslexia (Whaley, 2014). Identification is also hindered by misguided beliefs and attitudes that can prevent teachers from taking steps towards a dyslexia diagnosis. Some of the thoughts and misconceptions included thinking that if a student is well behaved, but having academic challenges, they should not be told that they are failing. Resulting in the child being passed along. Many teachers also identify letter reversals as one of the symptoms of dyslexia. If teachers believe this is the primary symptom to look for, they will not identify many dyslexic students (Whaley, 2014).

Historically, educators diagnose reading disabilities when there is a significant discrepancy between the intelligent quotient (IQ) and reading performance (Vaughn & Fuchs, 2003). However, a teacher must have extensive content knowledge of reading skills and applying assessment data to drive instruction in order to change the outcomes for dyslexic students (Roehrig, Duggar, Moats, Glover, & Mincey, 2008). In the past teachers referred students for testing based upon difficulties in reading. However, a significant reading discrepancy occurs after second or third grade (Dunn, 2007). Thus, leaving many students undiagnosed, even though they had shown difficulties in reading since Kindergarten.

In an urban school district in Texas, the number of students diagnosed with and receiving services for dyslexia is below the average national average. Because of the district having numbers below average, teachers are now being required to conduct universal screening tests on all students in Kindergarten. While there is an effort to identify and diagnose students earlier on, there are still discrepancies within the identification process related to several factors. Factors that may have contributed to the problem in this district include a lack of training and awareness for all teachers, teachers' misconceptions about what they think they know about dyslexia, and their thoughts and feelings about inclusion of students with dyslexia.

### **Significance of the Study**

With the wide range of statistical data regarding the diagnosis of dyslexia, there are additional questions as to why more of the population is not diagnosed. There are many myths and misconceptions that surround dyslexia. Although there are over 30 years

of documented, scientific evidence and research related to understanding dyslexia, many individuals go undiagnosed (Dyslexia Help, 2015). The Dyslexia Research Institute states that only five percent of individuals with dyslexia are ever diagnosed and given help (2015). Less than one-third of the students with reading disabilities are receiving school services for their disability (International Dyslexia Association, 2012).

Identification of dyslexia early on is essential in helping students become academically successful. Early identification is critical because the earlier the intervention, the easier it is to remediate (Hall & Moats, 1999). According to the Texas Dyslexia Handbook (TEA, 2014), it is important that school districts do not delay the identification and intervention process until second or third grade for students suspected of having dyslexia.

Teachers have varying abilities when it comes to dealing with students who have learning disabilities. The level of ability is based upon the background knowledge of the learning disability, as well as the perceptions that are held regarding the specific learning disability. What matters most for the learning of children with learning difficulties and disabilities are the commitments and capabilities of their teachers (Mills, 2006). The Individuals with Disabilities Education Act (IDEA, 2004) requires that students with disabilities be educated in the least restrictive environment. This means placement in the least restrictive environment where the student can benefit most in a setting most like the regular classroom (Mastropieri & Scruggs, 1997). The decision for placement should be based on the individual needs of the learning-disabled child (Yell, 1995; Smith & Dowdy, 1998; Havey, 1998). Inclusion of students with special needs in regular

education classrooms has become a major focus of current educational reform, and regular education teacher's acceptance is a critical component in how this type of service delivery will play out (Treder, Morse, & Ferron, 2000).

According to Wadlington and Wadlington (2005) there are significant misperceptions and lack of awareness about dyslexia among educators. By conducting this study, the researcher will be able to identify overall perceptions and beliefs about dyslexia among all teachers. The findings from this study will provided school districts with insight into teachers' knowledge and perceptions, and then use the information to develop professional developments that will increase awareness of dyslexia so that proper identification can occur at an earlier stage in a students' educational journey.

### **Research Purpose**

The purpose of this study is to identify the perceptions of dyslexia of general education and special education teachers. In addition to the identifying the perceptions, the beliefs of inclusion held by both general and special education teachers within a public-school setting will be identified. Once the perceptions and beliefs have been identified, the implications as to how those perceptions and beliefs affect the identification of students will be addressed.

### **Research Questions**

- R1: What percentage of students in receives special education receive services for dyslexia?
- R2: Are general education teachers' perceptions about students with special needs in the inclusive classroom different than special education teachers?



- R3: Are general education teachers' perceptions about inclusion of students with disabilities in the general education inclusive classroom different than special education teachers?
- R4: What is the relationship of teachers' knowledge of dyslexia and their beliefs about inclusion of students with dyslexia?
- R5: What training have teachers been given regarding dyslexia and regarding the inclusion of students with dyslexia?
- R6: In what ways, if any, has professional staff supported students with dyslexia?

### **Definitions of Key Terms**

*Dyslexia* is defined as “a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge” (Lyon, Shaywitz, & Shaywitz, 2003)

*Student achievement* measures the amount of academic content a student learns in a determined amount of time. Each grade level has learning goals or instructional standards that educators are required to teach. Successful instruction of those standards results in student achievement (Carter, 2015).

A *learning disability* is defined a neurologically-based processing problem. These processing problems can interfere with learning basic skills such as reading, writing, and/or math. They can also interfere with higher level skills such as organization, time planning, abstract reasoning, long or short term memory, and attention (Learning Disabilities Association of America, 2015).

*Specific Learning Disabilities (SLD)* are a group of disabilities outlined in the Individuals with Disabilities Education Act (IDEA, 2004). The term refers to a disorder in one or more of the basic psychological processes used to understand language either written language or spoken language (Logsdon, 2017). The term includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia (American Speech-Language-Hearing Association, 2017).

The *Individuals with Disabilities Education Act of 2004 (IDEA)* is a federal law that requires schools to serve the educational needs of eligible students with disabilities (Lee, 2014).

*Inclusion* is defined as a term which expresses commitment to educate each child, to the maximum extent appropriate, in the school and classroom he or she would otherwise attend (Wisconsin Education Association Council (WEAC), 2001).

*No Child Left Behind Act of 2001 (NCLB)* is a federal law that attempts to accomplish standards-based education reform. The law reauthorized federal programs meant to hold primary and secondary schools measurably accountable to higher standards (U.S. Department of Education, 2010).

*Every Student Succeeds Act of 2015 (ESSA)* The Every Student Succeeds Act is a US law passed in December 2015 that governs the United States K–12 public education policy. The law replaced its predecessor, the No Child Left Behind Act (NCLB), and modified but did not eliminate provisions relating to the periodic standardized tests given to students (U.S. Department of Education, 2015).

*Response to Intervention (RTI)* is a multi-tier approach to the early identification and support of students with learning and behavior needs (National Center for Learning Disabilities, 2015).

### **Conclusion**

Dyslexia is lifelong condition that makes it difficult for people to read. Despite the many misconceptions, being diagnosed with dyslexia does not mean low intelligence; in fact, individuals with dyslexia can be of high intellectual capabilities (Dyslexia Help, 2015). As with most disabilities, dyslexia is a lifelong diagnosis (International Dyslexia Association, 2012). Over time, the symptoms may change, but the origin of the disability will remain the same. Moats and Dakin (2008) estimate that 15% to 20% of the population to be diagnosed with dyslexia, many more continues to go undiagnosed from the lack of clarity when it comes to identifying the characteristics associate with dyslexia.

After reviewing the literature, there is a clearly defined need for further studies to be conducted to determine why so many children fail to receive the assistance they need. In addition to identification, those diagnosed must also receive adequate support to ensure that further damage is not done. Studies show that 74% of children who are poor readers in third grade will remain poor readers in ninth grade (International Dyslexia

Association, 2012). Early diagnosis is essential. For the identification process to take place, professionals must be trained to identify the signs and symptoms related to this disorder.

This research is intended to identify the perceptions of school personnel regarding dyslexia and their perceptions of inclusion of students with dyslexia. In light of the findings, further steps can be taken to share information that would bring awareness to an area of need within the educational system. The data is also intended to a catalyst for opening doors to ensure that school personnel receive adequate professional development, as it relates to working with students identified as dyslexic. An additional goal of this research would be to provide data that can be used to drive the creation of programs that can benefit students diagnosed with dyslexia.

To be successful, children must first be diagnosed. After diagnosis, students must then receive services that address their individual personal needs. For this to become the norm, awareness must be to present. The expectation is that all students regardless of their learning disability are able to can grow academically.

## CHAPTER II

### REVIEW OF LITERATURE

Having the ability to read is a function necessary in today's developed society. While it is a skill that most people need, it is not an ability that naturally occurs, like walking and talking. Reading is a learned process. According to Moats (1999), "Research now shows that a child who doesn't learn the reading basics early is unlikely to learn them at all" (p. 5). How well a child flourishes in school and life is dependent upon learning the reading basics at an early age (Moats, 1999).

This study seeks to understand general and special education teachers' perceptions of dyslexia. In understanding these perceptions, this study will identify myths and misconceptions associated with dyslexia, examine perceptions the characteristics that are exhibited by those diagnosed with dyslexia, and beliefs teachers have regarding inclusion in the general education setting. The goal of this study is to make professionals in the education sector more aware of the need understand the nature of this learning disability, so that students can be identified, and then appropriately served in inclusive classes to meet their academic needs.

#### **Specific Learning Disabilities**

Specific Learning Disabilities (SLD) are a group of disabilities outlined in the Individuals with Disabilities Education Act (IDEA, 2004). The term refers to a disorder in one or more of the basic psychological processes used to understand either written

language or spoken language (Logsdon, 2017). The term includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia (American Speech-Language-Hearing Association, 2017). IDEA's definition of SLD does not include visual, hearing, or motor disabilities as a cause. SLD also does not encompass intellectual disabilities, emotional disturbance, disabilities of environment, culture, or economic disadvantage (Cortiella & Horowitz (NCLD), 2014). A person can have one or more learning disabilities. Combined, SLDs counted for nearly one half of the students identified disabled students (U.S. Department of Education, National Center for Education Statistics, 2016; Digest of Education Statistics, 2015).

Children diagnosed with a SLD may experience difficulty in one or more of the areas of reading, writing, listening, speaking, reasoning, and math (National Dissemination Center for Children with Disabilities, 2017). According to the National Center for Learning Disabilities (2014), a SLD is best described as unexpected, significant difficulties in academic achievement and related areas of learning and behavior in individuals who have not responded to high-quality instruction, and for whom struggle cannot be attributed to medical, educational, environmental or psychiatric causes. Learning disabilities are not a prescription for failure. With the right kinds of instruction, guidance and support, there are no limits to what individuals with a SLD can achieve (Cortiella & Horowitz, 2014).

Although there are several SLDs, there are few that are more prevalent than others. These SLDs would include, but aren't limited to dyslexia, dyscalculia, and

dysgraphia. Although there are other disorders and deficits also associated with SLDs, dyslexia is the most common of them (International Dyslexia Association, 2012). It is associated with a learning disability in reading. Dyscalculia is associated with a learning disability in math. Dysgraphia is associated with a learning disability in writing, which pertains to the physical aspect, as well as the written content of this disability. Features of the SLD will vary from person to person at different ages and stages of development (NCLD, 2014).

### **History of Dyslexia**

Dyslexia is a term that has been used over many years to describe literacy difficulties found in children. For some, the word dyslexia is considered to be synonymous with the term 'specific learning difficulty' (Rutter and Yule, 1975), while others use the term 'specific developmental dyslexia'. While the term has been widely debated, there is a very specific history documented on the evolution of the term.

The research of dyslexia dates back to 1869, when Sir Francis Galton, an English psychologist, began looking into the individual differences of the academic abilities of children. Apart from the pioneering work of Galton, neither psychology, nor the teaching profession, made significant contributions to the study of childhood learning difficulties (Lawrence, 2009). These learning difficulties were thought to be caused by underlying medical conditions.

Adolph Kussmaul (1878) a German neurologist, concluded that adults with reading problems were demonstrating neurological impairment. Through his research, Kussmaul, recognized that his patients were unable to read, and used words in the wrong

order. Because of the findings, he introduced the term 'word-blindness' as a way of describing their difficulties. The term began to be used regularly to describe adults and children who had difficulty learning to read. This term also conveyed the fact that these patients were neurologically impaired (Lawrence, 2009). In 1887, German ophthalmologist, Rudolf Berlin, was accredited with first using the term dyslexia (Smythe, 2011). Despite the term's introduction in 1887, it would not come into common usage throughout literature until the twentieth century (Lawrence, 2009).

In 1891, Dr. Dejerne authored a report in *The Lancet*, a medical journal. His hypothesized conclusion was that those who had suffered injury to the left occipital lobe, of the brain, acquired dyslexia (Smythe, 2011). Dr. Dejerne's research supported Kussmaul's conclusion that reading difficulties were associated with underlying neurological impairments (Henry, 2010) (Lawrence, 2009). While the theory was hypothesized, there was no researched-based evidence that supports the theory (Lawrence, 2009).

The first documented case of dyslexia in the English language was published in the *British Medical Journal* in 1896 by medical doctor Morgan Pringle (Smythe, 2011). By acknowledging the term, Morgan Pringle set the precedence of using intelligence and word reading ability discrepancy as the model to define dyslexia. In the early twentieth century, dyslexia was still under the purview of the medical community. A Scottish eye surgeon, Dr. James Hinshelwood, published his findings based upon his study of a patient that had reading difficulties and a congenital defect in the brain related to eyesight. He concluded that the cause of the patient's reading difficulty was a malfunction of eyesight



caused by a brain defect (Lawrence, 2009). The work of Dr. Hinshelwood continued to reinforce the use of the term word-blindness.

Additional terms began to emerge as attention to reading difficulties grew. Several terms were presented in association with dyslexia. Dr. Samuel T. Orton (1937), a famous Iowa neurologist, did not believe that dyslexia is the root of reading problems. It was his belief that many disabled readers possessed "strephosymbolia," a deficiency which caused children to reverse common words such as saw and was (Cushenberry, 1981). He also introduced the term developmental alexia to describe these children with reading difficulties (Lawrence, 2009).

By the mid-1930s dyslexia began to be perceived as an educational rather than medical concern (Lawrence, 2009). Educational and psychological research began to accumulate, thus broadening understanding of the learning disability, as well as the development of the child. Learning difficulties diagnosed in children were now being recognized in education. Even when the child was medically diagnosed, it was agreed that the management of the problem would best be conducted within the educational environment (Lawrence, 2009).

### **Definitions and Characteristics of Dyslexia**

Many children, while they have the intellectual capacity, struggle with the ability to read for many reasons associated with learning disabilities. A learning disability is a neurological condition that interferes with an individual's ability to store, process, or produce information (Learning Disabilities Association of America, 2015).

Approximately 2.4 million students are diagnosed with Specific Learning Disabilities

(U.S. Department of Education, National Center for Educational Statistics, 2016). This represents 41% of all students receiving special education services (National Center for Education Statistics, 2015).

Diagnosing students with a SLD is key in their overall academic success and achievement. Dyslexia is a learning disability with much controversy and many questions surrounding its definition, identification procedures, and educational implications (Zambo, 2004). Researchers concerned with dyslexia have concentrated their efforts on answering three key questions: What is it? What causes it? What can be done about it? (Tunmer & Greaney, 2010).

Despite over 100 years of research, dyslexia continues to be controversial because of the failure to agree on a definition and underlying causes, as well as the funding implications (Smythe, 2011). Some definitions that are associated with dyslexia focus on difficulties with reading and writing. According to the British Dyslexia Association (2009), dyslexia is a specific learning difficulty which mainly affects the development of literacy and language related skills. The International Dyslexia Association (Lyon et al., 2003) defines dyslexia as a specific learning disability that is neurological in origin. Dyslexia is a learning disability that primarily affects the skills involved in accurate and fluent word reading and spelling (Rose, 2009). Each of the definitions identified focuses on the impact on literacy, but do not define what dyslexia is. Also including the phrase 'is neurological in origin' does not support defining the term, since any individual difference, whether the result of nature or nurture, is 'neurological in origin' (Smythe, 2011).

Many international organizations, such as the International Dyslexia Association, have an agreed upon definition for this learning disability (Lyon, Shaywitz, & Shaywitz, 2003). Their goal was to develop a working definition for dyslexia, as it had just been identified as a condition of learning. To support their finding, Tunmer and Greaney, (2010) identified four components to support their definition of dyslexia. The four components were (a) persistent literacy learning difficulties (b) otherwise typically developing children (c) despite exposure to quality literacy-based instruction (d) and impairment in the phonological processing skills required to learn to read and write.

Persistent literacy learning difficulties is inclusive of word recognition, spelling and phonological decoding. Dyslexia, in the past, has been defined as a discrepancy between reading achievement and intellectual potential. Because of this definition, many children were not identified until they had received two to three years of reading instruction. Students who do not learn to read adequately are more likely to have pervasive academic difficulties and are at high risk for school dropout (Alliance for Excellent Education, 2002). The “wait to fail” approach to identification is antithetical to early intervention and the prevention of negative Matthew effect in reading (Fuchs & Fuchs, 2006). The Matthew effect refers to the phenomenon that performance differences between good and poor readers may increase over time (Stanovich, 1986). For those learning to read, the Matthew Effect in reading is not only about the progressive decline of slow starters, but also about the widening gap between slow starters and fast starters (Stanovich, 1986). What this means is that the students who are strong in reading get stronger, while those who are weak continually get weaker (Stanovich, 1986).

Matthew Effects have been investigated in children with poor word reading (Juel, 1988; Scarborough & Parker, 2003). Over the course of a person's life, reading practice is the variable that influences the development of reading and language. Differential practice in reading is one factor that might lead to Matthew Effects (Cain & Oakhill, 2011). Language comprehension skills may also lead to Matthew Effects because they influence the ability to acquire new information when reading (Kintsch, 1998; Nagy, Herman, & Anderson, 1985).

Dyslexia not only affects one's ability to read, but also one's ability to speak, write, and spell (International Dyslexia Association, 2002). Some research refers to dyslexia as a language-based learning disability. The most common of the language-based learning disabilities is dyslexia (Moats & Dakin, 2008). Because of the research conducted for the study, Tunmer & Greaney (2010) argue that the solution to the problem is to incorporate causal factors that have been supported into the definition of dyslexia. The sectors would serve as the basis for incorporating preventive measures not only for students with dyslexia, but for other groups of students with learning disabilities. This could include English Language Learner students, as well as students who come from economically disadvantaged homes and communities.

Also included in the definition were the factors that say what dyslexia is not. Factors that could not be included were those that were preexisting prior to the child being formally educated. These factors included, but were not limited to attentional deficit disorders, oral communication impairments, intellectual disabilities, and/or emotional and behavioral disabilities (Tunmer & Greaney, 2010). The underlying

disabilities do not influence a child's intelligence quotient (IQ); therefore, it cannot be ruled as the catalyst for their reading difficulties. Therefore, intervention programs for children with specific reading comprehension difficulties may need to focus attention on motivating these children to increase both the amount and range of their personal reading (Tunmer & Greaney, 2010).

Research also determined that IQ was not a factor in the abilities of students with dyslexia, therefore the third component, instruction and intervention, was a key in the development of the definition (Tunmer & Greaney, 2010). There are many factors that may impede a student's ability to read. Difficulties in young children can be assessed through screening of phonemic awareness and other phonological skills (Sousa, 2005). Early identification is critical because the earlier the intervention, the easier to remediate (Hall and Moats, 1999). With the appropriate and timely interventions, such as those provided during the Response to Intervention process, students with reading disabilities can be taught strategies for using their brains more effectively (Learning Disabilities Association of America, 2017). As Shaywitz (2003) concluded, the results of brain activation studies leave no doubt that "the core problem in dyslexia is phonologic: turning print into sound" (p.87).

Inclusionary factors were the fourth component cited in Tunmer and Greaney's (2010) study. The study stated that the factors also included learning difficulties that remained constant despite research-based interventions and quality instruction. Inclusionary factors would include impairment to the phonological processing of a student. Due to the impairment, a child's ability to read and write is impeded. Based on

the definition from the International Dyslexia Association, literacy learning difficulties of children with dyslexia “typically result from a deficit in the phonological component of language” (Catts & Kamhi, 2005, p. 62). Catts & Kami (2005) also state that the longer the delay in providing remedial assistance, the greater the likelihood that reading problems will become more severe and difficult to remediate.

With a disorder such as dyslexia, it is important to consider the aforementioned characteristics are variable, and each characteristic may or may not present itself in every child diagnosed (Frith, 1985). Most research agrees that characteristics of dyslexia include the inability to process phonological sounds, the deficit in the working ability of the short-term memory, difficulty with visual processing, and automatizing skills (Learning Disabilities Association of America, 2017). There are many characteristics that one can use to identify dyslexia. Given that dyslexia affects many different areas, characteristics can vary depending upon the severity of the disorder. In grade school children, some of the characteristics may include, but are not limited to, the inability to connect letters with the corresponding sounds, slow pacing while reading orally, and the disconnect between oral reading and comprehension, and the mispronunciation of common words (Understood.org, 2014). One of the major distinguishing characteristics of struggling readers is their tendency to rely heavily on sentence context cues to compensate for their deficient alphabetic coding skills (Stanovich, 1986). In addition to the referenced characteristics, research has shown that there is often a genetic link as well. Parents who have dyslexia are very likely to have children with dyslexia (International Dyslexia Association, 2002). Students with dyslexia also show comorbidity

with other behaviors not associated with academics, the most common being attention deficit hyperactivity disorder (ADHD) and/or specific language disorders (Snowling & Stackhouse, 2006).

### **Myths and Misconceptions of Dyslexia**

Dyslexia has always been associated with many myth and misconceptions that concern the characteristics associated with the disability (Washburn, Joshi, & Binks-Cantrell, 2011; Gray, 2008; Hudson, High, & Al Otaiba, 2007; Washburn, Joshi, & Binks-Cantrell, 2011). The confusion around dyslexia often begins with the contradictory terminology used to describe it, assess it, and understand it (Wadlington & Wadlington, 2005; Currie & Wadlington, 2000; Ker, 1998). As a result of the misunderstandings, students go unidentified. Some misconceptions addressed will include gender, visual perceptions, reading reluctance, and spelling, dyslexia as an adult and academic achievement. There is research that has been scientifically evaluated and documented, to aid in the understanding of dyslexia (Dyslexia Help, 2015). Early identification provides individuals with access to accommodations that “level the playing field,” which enhances the student’s likelihood of experiencing academic success at a young age (Shepard, 2009).

### **Dyslexia and Gender**

There has been much speculation about gender bias in dyslexia, with more boys than girls generally identified (Smythe, 2011). A study presented in the Journal of the American Medical Association (1990), found that both males and females can be diagnosed as dyslexic. The study showed dyslexia affects both genders, but boys tend to

be referred at a higher rate by teachers (Shaywitz, et al., 1990). Shaywitz et al. (1990) found that the boys were identified because of externalizing behavioral difficulties in the classroom, which drew the teachers' attention to them. The girls were much less likely to have behavior problems, and thus, were not identified as having reading difficulties, although they were almost as likely as boys to have a disability. Siegel and Smythe (2005) highlight that if there were differences at the cognitive level, and then they were not yet proved. Hawke, et al. (2009) suggests that the norms for boys and girls may be equal, however the variance for boys is greater, and this may account for some of the gender bias that is found.

### **Visual Perception and Letter Reversals**

Visual perception is typically associated with dyslexia. Some individuals believe that students that reverse letters, do so a result of visual perception problems (Gray, 2008; Hudson, High, & Al Otaiba, 2007; Washburn, Joshi, & Binks-Cantrell, 2011). The American Academy of Pediatrics, The American Academy of Ophthalmology, and The American Association for Pediatric Ophthalmology and Strabismus (1998) state that defects related to the eye do not cause individuals to experience letter reversals, words of numbers. The myth is that the only identifying characteristic of dyslexia is for students to write their letters backwards, specifically the letters b, d, p, and q (Porch and Gilroy, 2003).

During the developmental stages of writing, many students reverse their letters; therefore, this is not a clear indicator of dyslexia. One of the most enduring misconceptions is that dyslexic children see letters and words backward and that reversals



(writing letters and words backward) are an invariable sign of dyslexia (Shaywitz, 2003). Reversals are common in children who have not established orthographic representation (letter–sound representation or spelling) and can be age-related (Hudson, High, & Al Otaida, 2007). However, letter reversal at the age of nine or above can be a warning sign of dyslexia (TEA, 2014).

### **Reading Achievement**

It is a misconception that students with dyslexia cannot learn to read (Spafford & Grosser, 2005). Everyone with dyslexia can read to some degree. However, students will only get to a certain point before they begin to plateau despite having instruction with a phonological background. When a child struggles to read, that is the first sign that the child may have dyslexia. Diagnosis of dyslexia is typically made when individuals' reading achievement is found to be significantly below the level expected given an individual's cognitive abilities and motivation to read (Shaywitz et al., 2003).

It is important to test a child early in his/her school career to identify any problems and attempt to prevent major reading difficulties before they even start (Bryan, 2015). Phonological awareness appears to be the most important core skill deficit observed in individuals diagnosed with dyslexia (Fletcher et al., 1994). This skill represents the ability to learn and use sound and/or symbol relationships needed to decode words and has repeatedly been found to be the most consistent predictor of reading difficulties (Report of the National Reading Panel, 2000). This ability is largely missing in dyslexic children and can affect the development of reading comprehension skills as well as overall academic achievement (Bryan, 2015).

However, the key to dyslexia is not poor reading performance; rather, it is poor reading performance in the face of effective reading instruction (VanDerheyden & Burns, 2017). Remediation for dyslexia has focused on early identification and intensive early intervention to improve the core deficits (Dick, Caplan, & Crawford, 2006). Individuals with dyslexia can become proficient readers with the appropriate intervention (i.e., systematic, explicit, and research-based) (Thomson, 2010).

### **Spelling**

Dyslexia impacts more than just reading in students. Spelling is also an indicator that can distinguish dyslexic students from poor readers. Although students can learn to spell for a short period of time, dyslexic students have difficulty retaining the words for longer periods of time (Bright Solutions for Dyslexia, 2014). Students with dyslexia also struggle with spelling when writing sentences or paragraphs, especially high frequency words. Extreme difficulty with spelling is a warning sound for dyslexia. Difficulties for beginning spellers are a burden for children with dyslexia whose poor phonological skills make the acquisition of inconsistent sound-to-letter mappings extra hard (Cassar et al., 2005). Spelling problems are particularly relevant for students because poor writing skills not only have implications for functioning in day-to-day tasks (Gerber, 2009; Maughan et al., 2009) but also may affect the marks students get on written reports, which often form the basis of student assessments and evaluations (Whitehurst & Lonigan, 1998).

Effective support begins with sound knowledge of the difficulties students with dyslexia are facing (Gerber, 2009; Henneman, 1994). Unfortunately, the mapping between sounds and letters is not always regular or predictable (Tops, Callens, Evi Bijl,

& Brysbaert, 2014). One of the major distinguishing characteristics of struggling readers and spellers is their tendency to rely heavily on sentence context clues to compensate for their deficient alphabetic decoding skills (Stanovich, 1986).

Given that spelling is a developmental skill, it seems appropriate that the bulk of spelling-related studies involve children (Coleman et al., 2009). Numerous studies have documented the important link between phonological awareness/processing and literacy development and spelling achievement (e.g., Allyn & Burt, 1998; Bruck & Waters, 1990; Burden, 1992; Burt & Shrubsole, 2000). Phonological awareness can be loosely defined as one's facility with language sounds (Coleman et al., 2009). Studies have also been conducted to examine the spelling difficulties and concerns among dyslexic children who are in the early stages of spelling instruction (Bourassa et al., 2006; Cassar et al., 2005).

Bourassa et al. (2006) found that both typically developing children, and children with dyslexia used morphology in their spellings to some extent, but neither group used it as much as they could have given their knowledge of stems. The authors concluded that older children with dyslexia have morphological awareness skills like those of younger normal children (Tops, Callens, Evi Bijn, & Brysbaert, 2014). Cassar et al. (2005) also conducted a study that compared the spellings of dyslexic and non-dyslexic children. The argument presented was that children with dyslexia had difficulties with the same linguistic structures as typically developing (but younger) spellers (Tops, Callens, Evi Bijn, Brysbaert, 2014). The study concluded that phonology is more delayed than impaired in spelling.

## **Academic Achievement of Dyslexic Students**

Students who are smart or students who do well in school cannot be dyslexic. This is an inaccurate thought. Dyslexia can occur in students at any stage in a person's life (International Dyslexia Association, 2012). Dyslexic students also do well in college and post-graduate studies. Intelligence is in no way related to phonological processing, as there have been scores of brilliant and accomplished dyslexics – among them William Butler Yeats, Albert Einstein, George Patton, John Irving, Charles Schwab, and Nicholas Negroponte-attest (Shaywitz, 1996). A study was conducted on the spelling skills of children with dyslexia as it relates as a predictor for difficulties with spelling as an adult. The authors of the study recognized that there were a growing number of students entering college and universities who that came with the diagnosis of dyslexia. In Flanders, Belgium, the number of students with dyslexia in higher education is estimated at 4,000, or 2 percent to 5 percent of the student population (Onderwijsraad et al., 2006).

Another myth is that students cannot be twice-exceptional students. Within the field of giftedness, there is increasing interest in understanding twice-exceptionality, the occurrence of both giftedness and a learning disability within one child (Brody & Mills, 1997). A study investigated how children who are labeled as both gifted and dyslexic, can hide their literacy deficits. The hypothesis of the study was that students who were gifted with dyslexia would outperform their counterparts who were dyslexic, but not gifted on standardized literacy tests. Nielsen estimates that the prevalence of giftedness and a learning disability range from 1 to 5% of the total population of children with a learning

disability (2002). This is comparable to the estimated number of children within the population.

For this study, the researchers defined dyslexia as a learning disability characterized by severe reading and/or spelling difficulties at work level (Snowling, 2000). Gifted children who often show specific academic and cognitive strengths are also relevant to the weaknesses that are characteristics of dyslexia (van Viersen et al., 2014). The study found that gifted children with dyslexia outperformed other children also diagnosed with dyslexia without the gifted label. The study also found that although the students outperformed the other group, they still displayed deficits related to dyslexia, and their strengths associated with giftedness masked their deficits (van Viersen et al., 2014).

### **Identification of Students with Dyslexia**

With the plethora of information available regarding dyslexia, teachers should be able to recognize the signs of a child who may be at risk, but many often do not and students go on for years undiagnosed. Early identification of dyslexia would allow students to receive the appropriate interventions much sooner. With early identification, students would not have to suffer emotionally due to underachievement. The self-esteem of the students would not have to be diminished, and students would be more motivated to strive for success. Zambo (2004) stated to bring focus to the experiences of the students who were diagnosed later in their educational years, and the impact the delayed identification of the disability had on their lives from a social stand point, rather than looking at the academic achievement of the student. If educators and researchers merely look at scores and numbers, we may miss what reading and a reading disability are all

about for children (Zambo, 2004). When dyslexia was defined by Tunmer and Greaney (2010), they made it a point to also note in their findings that although diagnosed, students with dyslexia could make progress in learning to read, but they required more intensive instruction of a longer duration.

The early identification of students with any suspected learning disability, including dyslexia, is very important. The most frequently cited reason for the importance of early identification is that many of the interventions for dyslexia appear to be most effective in early childhood (Foorman & Torgeson, 2001; Shepard et al., 2009). School districts should not delay the identification process until students are in later grades. The identification should be based on an individual student evaluation, rather than by a screening process. The evaluations should be conducted through 504 procedures or through Individuals with Disabilities Education Act (IDEA 2004). The identification and intervention process have many components that involve both state and federal requirements (Texas Education Agency Dyslexia Handbook, 2014).

### **Wait to Fail**

One of the first early interventions was the IQ- Achievement discrepancy-based formula used to identify students with reading disabilities had become a “wait to fail” model (L. S. Fuchs & Fuchs, 1998; Lyon, 1995; Vellutino et al., 1996). Using this model posed several concerns for the identification of students. The first concern was that students, on average, were not identified as having a learning disability until the age of 10 (Al Otaiba, et al., 2014). This was the method used, despite converging evidence indicating that prevention was easier and more effective than remediation (Torgersen,

2000). Additionally, there were discrepancies about the level of interventions the students had received. When the students were tested, none of the instruments used to determine the IQ-Achievement discrepancy provided adequate formative data-based guidance to help educators select and differentiate interventions (Fletcher et al., 1998).

The IQ-discrepancy criterion was harmful to students as it resulted in delaying intervention until the student's achievement was sufficiently low that the discrepancy was achieved. For most students, identification as having an SLD occurred at an age when the academic problems were difficult to remediate with the most intense remediation efforts (Torgersen, et. al., 2001). As a result, the "wait to fail" model did not lead to closing the achievement gap for most students placed in special education. Many students placed in special education as SLD showed minimal gains in achievement and few left special education (Donovan & Cross, 2002). The lack of progress for students under the approach, allowed for the momentum to build in support of the response to intervention model.

### **Response to Intervention**

Response to Intervention (RTI) is an approach with multiple tiers (typically three) designed to target struggling learners and provide them with interventions. There are several components that are required to be implemented for the process to be effective. Each component must be implemented with fidelity. The components include having high quality classroom instruction, ongoing assessment, tiered instruction, and parental involvement (RTI Action Network, 2015). Through the tiered intervention process, schools document students' learning disabilities, provide ongoing assessment, and

monitor reading achievement progress for students at risk for dyslexia or other reading disabilities (Texas Education Agency Dyslexia Handbook, 2014, p. 14). At any time, parents have the right to request a full evaluation, under the IDEA law, through the school if they suspect a disability (International Dyslexia Association, 2012).

When addressing the identification of dyslexia, there are three questions that must be addressed: how dyslexia is defined, what the causes are, and what can be done to help students. Through the RTI process, all three questions can be answered at the same time. The RTI process has procedures for identification of the disability, progress monitoring for literacy skills, and research -based interventions. RTI uses evidence-based instruction for continuous progress monitoring across multiple tiers to provide early intervention for children at risk for reading failure (Turner & Greaney, 2010). Students who show little to no progress in reading performance after multiple interventions in the RTI process would be candidates for identification. These students would also qualify for continued service through the multi-tier process.

In Tier, I of the RTI process the literacy skills taught mirror what is taught in the classroom. The skills introduced and reinforced address the needs of all children within the classroom. Here classroom teacher is using research-based materials and strategies to provide differentiated instruction for all students. Aaron, Joshi, Gooden, and Bentum (2008) reported evidence supporting an approach to the differential diagnosis and treatment of early reading difficulties in which children are identified as having reading problems mostly relating to comprehension process, mostly to decoding processes, or to both components of reading.



Tier II of the RTI process typically involves explicit small group instruction. The students participating in this tier have been identified through the rate at which they progress in Tier I. Due to slow progress; these students are identified as at-risk for reading difficulties that are now in need of additional support. As in the first tier, progress monitoring of the student continues. If it is found that students are still making minimal progress in Tier II, students are then moved to the intensive Tier III. At this level of intervention students are receiving very specific, one-on-one intervention while progress monitoring continues.

Tier III is the most intense of the three tiers and provides the most comprehensive evaluation of a students' progress. It typically serves the needs of approximately five percent of the student population. In most models, this third tier involves high-intensity, longer duration individualized instruction and frequent progress monitoring (Berkley et al., 2009). Progress of the student is monitored, and for those who do not respond to the intervention, or do not reach a designated level of progress, are referred for a comprehensive evaluation, typically to identify a specific learning disability under the Individuals with Disabilities Education Improvement Act of 2004 (IDEA 2004). In some models of RTI, Tier III is considered to be special education (Mellard & Johnson, 2007).

There are advantages to identifying students through the RTI process. By utilizing such a structured approach as a basis for differentiating instruction, and the level of intensity to which the instruction is provided leads to the improvement of outcomes for all students with difficulties in reading. This process also allows schools to avoid the common pitfalls, such as all-inclusive remedial instruction programs, or programs like

Reading Recovery, where struggling readers must qualify for services. Because at-risk and struggling readers are already behind in the development of reading and reading-related skills, they must improve their reading skills at a faster rate than their typically achieving peers to close the gap in literacy achievement (Torgersen, 2004).

### **Inclusion**

Inclusion allows all students, including those with specific learning disabilities, the opportunity to learn along with their non-disabled peers in a general education classroom setting. According to the Individuals with Disabilities Education Act (IDEA, 2004), students identified as having special needs have the right to receive in the least restrictive environment and with necessary accommodations and/or modifications to the curriculum.

### **Section 504 of the Rehabilitation Act of 1973**

Section 504 of the Rehabilitation Act of 1973 (Section 504) is a civil rights law that prohibits discrimination against people with disabilities in federally funded programs and activities (National Center for Learning Disabilities, 2013). Individuals with a mental or physical impairment that hinders one or more major life activities are eligible for services through Section 504. Reading is now a major life activity (TEA, 2014). This act also allows students who have been identified under Section 504 to participate in all regular activities, while removing obstacles that could prevent identified students from participating in services and programs provided in the school.

If a student is suspected of having a disability within the scope of IDEA, all special education procedures must be followed. IDEA (2004) procedures meet the

requirements of Section 504 (TEA, 2014). The identification of dyslexia is made in the 504 committee. Committee members include the campus principal, assistant principal, the guidance counselor, the campus 504 coordinator (which may include the counselor or assistant principal), the dyslexia and reading intervention teacher, the classroom teacher, and the parent or guardian of the student identified with dyslexia (IISD, 2007). Members of the committee should be knowledgeable about the identified student, the assessment used to diagnose the student, and the meaning of data collected (TEA, 2014). Knowledge of the reading process, dyslexia, instruction, as well as district, state, and federal guidelines. Students with a 504 plan should be frequently monitored for academic success. If at any time, the student is not being successful with the plan and accommodations in place, any member of the 504 committee can request a meeting to discuss the struggles the student is experiencing and make changes to the educational plan (IISD, 2014).

### **Texas Identification Requirements**

Research shows that children who read well in the early grades are far more successful in later years, and those who fall behind often stay behind when it comes to academic achievement (Snow, Burns, and Griffin, 1998). The identification process for dyslexia can be multifaceted in the state of Texas (TEA, 2014). In Texas, the identification of dyslexia often occurs in the general education setting, rather than in special education. The Dyslexia Handbook (TEA, 2014) is the state law and the requirements that school boards and school districts must follow when identifying, assessing, and instructing students with dyslexia.

The Texas Education Agency (TEA) requires that students receive reading instruction and have progress monitoring throughout the school year (TEA, 2014). This allows for data collection prior to the school formally assessing a student for dyslexia. Data collection should include a hearing and vision screening, documentation of concerns from the general education teacher, reading assessments, previously attempted accommodations provided in the general education classroom, report cards, work samples, evidence of parent conferences, testing for English language proficiency, and the state assessment results (TEA, 2014). Schools are required to assess both academic and cognitive skills. There are five academic categories of assessment required by TEA. The areas are letter knowledge, word reading in isolation, reading fluency, reading comprehension, and written spelling. Each of the areas should be evaluated according to the age of the students and the current phase of reading development (TEA, 2014). Cognitive assessments are required in phonological awareness, and rapid naming. Additional testing is recommended, but not required. The additional assessments may include vocabulary, listening comprehension, oral and written expression, handwriting, orthographic processing, mathematical reasoning, and intelligence (TEA, 2014).

Once diagnosed with dyslexia, a student is required by the state of Texas to receive intervention to help remediate reading difficulties that the student has (TEA, 2014). The state also requires that students be taught by a certified teacher because there are currently no computer programs proven to be effective in remediating the reading ability of students with dyslexia (Institute for Education Services, 2007). The recommended program for students with dyslexia is a pull-out program for students in

second grade through twelfth grade that was developed by the State Regional Education Service Agency (Region IV, 2004). The agency states the Texas Essential Knowledge and Skills (TEKS) were aligned to the Dyslexia Intervention Program (2004).

### **School Personnel Perceptions of Dyslexia**

Dyslexia is a specific learning disability that is unexpected given the readers' age and intelligence and the absence of other possible explanatory factors (Shaywitz et al., 1992; Stanovich 1991). With no visible features or symptoms, dyslexia is a complex condition to understand. It is a lifelong developmental disorder that affects a child's learning ability (Basu, Beniwal, 2014). There are many misconceptions about dyslexia as it is defined, how it is identified, and how students who have been diagnosed receive services. For example, Hill, Rowan, and Ball (2005) used quantitative analysis because they looked for a correlation between student test scores and teacher knowledge. Alternately, Taylor, Ahlgirm-Delzell, and Flowers, (2010) used qualitative analysis because the purpose of their study was to examine teachers' perceptions of literacy curriculum.

### **Perceptions of Dyslexia as a Specific Learning Disability**

Historically and currently, a great majority of research on dyslexia has been based on a biological or intrinsic model of dyslexia (Worth et. al, 2016). An examination of dyslexia-based research published between 1960 and 2011 found that the top ten most published authors of dyslexia research were not educators, but those in the medical and psychology fields of study (Lopes, 2012). As a result, much of the research that is referenced by educators does not come from the perspective of educators, with

background knowledge or experience in teaching. Gibbs and Elliott (2015) examined another perspective. Their survey of teachers' beliefs about working with struggling readers, they found that the way students were labeled influenced the feelings of teachers related to efficacy. Basu, Poonam, & Beniwal (2014) conducted a study to investigate the perceptions of teachers toward children with dyslexia. The study concluded that most of the general education teachers thought children with dyslexia have difficulties in orientation, problems with concentration and distractibility and inconsistencies of performance.

### **Perceptions of the Identification Process**

Shaywitz (2003) describes teachers as “critical when it comes to identifying students who are at risk for dyslexia” (p. 47). However, there are variations between federal and state laws that leave room for school district discretion which sometimes extends a blatant disregard for dyslexia as a learning disability and provides a gap in services and resources needed by students with dyslexia (Wisconsin Department of Public Instruction, 2010; Katz, 2001). Parents and educators find laws frustrating and difficult to understand and navigate through when trying to advocate for students (Antonoff, Olivier, & Norlander, 1998). Even among legislators and policy makers there is an ongoing question of how to determine specific learning disabilities (Tillotson, 2011).

Despite the lack of consensus, there has been a profusion of legislative attention to dyslexia since 1985, when Texas became the first state to pass legislation concerning its screening and treatment (Worthy et al., 2016). Since that time, 22 additional states

have approved similar legislation, which Yoman and Mather (2012) describe as, “characterized by variability and inconsistency” (p. 133). Federal requirements specify that state local education agencies must permit the use of an identification process that is based on a child’s response to scientific, researched-based intervention to determine whether a child has a specific learning disability rather than a severe discrepancy process (Wisconsin Department of Public Instruction, 2010).

Following decades of inconsistent approaches to identification procedures for students with dyslexia and the practices for determining eligibility (Aaron, 1997; National Joint Committee on Learning Disabilities, 2005; Ysseldyke, Algozzine, & Epps, 1983), a multi-tiered system of instruction called Response to Intervention (RTI) emerged as an alternative approach (Werts, Carpenter, & Fewell, 2014). Most states have now adopted the RTI process as a means for identifying students. Swanson et al. (2012) investigated to identify the perceptions of general education and special education teachers’ perceptions of the RTI framework. The purpose was to identify what teachers perceived to be beneficial or challenging about the RTI framework. The top three perceived benefits of RTI cited by teachers were access to early intervention, meeting unique student needs, and collaboration with other staff members (Swanson et al., 2012). Teachers also perceived challenges with the identification process. The top four challenges were scheduling challenges, increased paperwork, increasing number of students, and a need for additional staff (Swanson et al., 2012).

## **Perceptions of Inclusion**

Under the guidelines of IDEA, students are to be served in the least restrictive environment (LRE). For many students with specific learning disabilities, including dyslexia, this means their academic needs are met in the general education classroom. Although the students are to be served within the classroom, the implementations of their specific learning needs are not implemented with fidelity. Often, the children are serviced by the classroom teacher. However, Kauffman, Gerber and Semmel (1988) recommend that caution was warranted regarding inclusion due to lack of support among those charged with its implementation.

Inclusion of students with special needs in regular education classrooms has become a major focus of current educational reform, and regular education teachers' acceptance is a critical component in how this service delivery will play out (Treder, Morse, & Ferron, 2000). Lerner (1997) noted that the nationwide prevalence of general education placements for students with learning disabilities – the largest group of students with mild disabilities- increased 95% in between 1987 and 1993. Many countries have adopted legislation and practices favoring inclusive education for children with intellectual disabilities (Ferguson, 2008), and the topic has received much academic attention over the last 40 years (Shorgen et al., 2012). Research has also argued that educational policies which support inclusion of students with intellectual disabilities in mainstream settings should commit to training general education teachers, providing resources, along with tools and strategies to support and encourage the inclusion process (Shorgen et al., 2015).



Findings of studies regarding teachers' perceptions on the subject of inclusion have revealed a confusing picture (De Boer et al., 2011). While the majority of teachers appear to approve of inclusion (Rose, 2001), when it comes to their own teaching practice, most do not like to be involved in inclusive education (Anderson et al., 2007). In addition, teachers' attitudes toward inclusion were found to be related to specific types of learning disabilities (Avramidis et al., 2000), experience with inclusion (Avramidis & Norwich, 2002), and class size (Moberg, 2003).

A study conducted by Malki and Einat (2017) examined the perceptions and attitudes related to inclusive education held by general education and special education teachers. The attitudes of both general education and special education teachers are also a factor with identifying the perceptions held by both groups. Positive attitudes of key school personnel are seen as key requirements for successful inclusion (Horne, 1985; Semmel, 1986; Villa, Thousand, Meyers, & Nevin, 1996).

Cornoldi et al. (1998) examined the viewpoints of 523 general education teachers working with students with intellectual disabilities. Their findings showed that 77.6% of research participants supported inclusion of students with intellectual disabilities in the general education classroom. Dissatisfaction concerning the amount of time available for implementing inclusion was expressed by 81.4% of the study participants. Soodak et al. (1998) also conducted a study in the New York metropolitan area on the inclusion of students with learning disabilities. The findings of their study revealed that general education teachers had openness toward inclusion, and it was associated with higher

teacher efficacy, the type of learning disability, teaching practices and collaboration, and class size.

Special education teachers are also included when developing a plan to service students identified with learning disabilities, including dyslexia. Cole (2005) examined the attitudes of special education teachers, she found that most participants were concerned about their lack of knowledge in the area of inclusion and the shortage of means for proper implementation in inclusion polices. Special education teachers also expressed feelings of powerlessness. Takala et al. (2009) conducted a similar study and found that the teachers saw inclusion as problematic. This was primarily due to the lack of consultation time with general education teachers, ambiguity of their job definition, and excessive workloads (Malki & Einat, 2017).

### **Theoretical Framework**

There are several theories of dyslexia that have been documented in the research. Most theorists agree that dyslexia is a disability with a neurological origin with a genetic link (International Dyslexia Association, 2012). The debate begins with understanding the mechanics of dyslexia, and how those mechanics effect the cognitive processing of those diagnosed. Just as there are different types of specific learning disabilities, there are likely to be different causes for the perceptions held by teachers (Heward, 2010). Teachers often use causal attributions when searching for reasons for these negative or unexpected outcomes in their students (Clark, 1997). It is important to identify factors that influence the perceptions of general and special education teachers that work with students diagnosed with specific learning disabilities in inclusive classroom

environments. How comfortable a teacher feels around people with disabilities in general is also likely to have some impact on his/her attitudes towards teaching children with learning support needs (Brady & Woolfson, 2008).

Bernard Weiner developed the theoretical framework that attempts to explain and determine the cause of an even or behavior (Weiner, 1972). Attribution theory explains two kinds of attributional motivation: intrapersonal and interpersonal (Weiner, 1979). It is believed an individual seeks to understand attributions (or causes) that explain why an event occurred (Schuster, Forsterlung, & Weiner, 1989). Attribution theory offers a conceptual framework that examines teachers' beliefs about the specific learning disabilities of children. The theory contends that teachers' perceptions of their students' behavior can influence their future expectations and responses to students (Vialle & Woodcock, 2011). In the educational arena, Weiner's (1979, 1985, and 1986) attribution theory of motivation has made a significant influence, particularly with regard to individuals' perceptions and behaviors in academic-related events (Linnenbrink & Pintrich, 2002; Tollefson, 2000; Zhou, 2006)

Reyna and Weiner (2001) emphasized that the emotional and behavioral cues conveyed by the observer may affect the actors' attribution and emotions. In this sense, teachers' attributional beliefs of students with learning disabilities and dyslexia may play an important role in relation to these students' motivations, behavior, and outcome in learning (Wookcock & Jiang, 2016). Teachers can often base these interpretations on their prior knowledge and experiences (Woodcock & Jiang, 2016).

Teachers often use causal attributions when searching for reasons for these negative or unexpected outcomes in their students (Clark, 1997). It is important to identify factors that influence the perceptions of general and special education teachers that work with students diagnosed with specific learning disabilities in inclusive classroom environments. How comfortable a teacher feels around people with disabilities in general is also likely to have some impact on his/her attitudes towards teaching children with learning support needs (Brady & Woolfson, 2008). Attribution theory offers a conceptual framework that examines teachers' beliefs about the specific learning disabilities of children. Bar-Tal (1978) defined attributions as 'the inferences that observers make about the causes of behavior, either their own or those of other people.

### **Conclusion**

Dyslexia is a condition that those diagnosed must live with their entire lives (International Dyslexia Association, 2012). It is not something that will ever go away. Despite the diagnosis, people can learn to read and write, and they can become successful. Early identification is key to that success. In addition to dealing with academic needs of students, schools may also have to address the emotional scars that were created because of years of academic struggles many students endure.

Educators must look beyond the myths and misconceptions that have been created over the years, and really get to know the individual student and their needs. Being a part of a gender group, or writing with one hand versus the other, or simply being more rambunctious than other students, are not clear indicators that students should be evaluated for a learning disability. The expectations of teachers can have an effect

academic achievement of students with dyslexia. While not intentionally have a direct effect on student achievement, the attitudes of teachers do indirectly impact students. To determine if the perceptions of teachers directly play a part in the identification, and subsequent academic success of students, further research must be conducted.

Chapter III will look at the methodology associated with completed this study. The population and sample used in this study will be identified, as well as the location where the study will be conducted. The specific research design will be defined, as it is used in this study. Data collection procedures and data analysis will also be addressed.

## CHAPTER III

### METHODOLOGY

The purpose of this mixed methods study is to identify the perceptions teachers have about dyslexia and inclusion of students with dyslexia. The researcher is interested in teachers' perceptions of dyslexia based upon their prior knowledge, interactions, and level of expertise. Given that much is potentially misunderstood about dyslexia, many students go undiagnosed. Data was collected from surveys and interviews from a purposeful sample of general education teachers as well as special education teachers, dyslexia specialists, general education interventionists, and administrators that are employed in a large urban school district located in southeastern Texas. Quantitative data was collected from the University of Teachers Perception Inclusion Scale (UTPIS) (Mamah, Deku, Darling, & Avoke, 2011). The Dyslexia Belief Index (DBI) was also used as a tool to quantitatively identify differences in beliefs (Tillotson, 2011; Wadlington & Wadlington, 2005). Qualitative data was collected through face to face interviews. The data was collected, examined, and analyzed for common themes. This chapter will provide an overview of the research problem, operational theoretical constructs, the research purpose, and questions, research design, population and sampling selection, instrumentation, data collection procedures, data analysis, privacy and ethical considerations, and research design limitations.

#### **Overview of the Research Problem**

The simple definition for dyslexia is that it is an inherited condition that makes it extremely difficult to read, write, and spell in your native language, despite at least

average intelligence (Bright Solutions for Dyslexia, 2014). Seventy to eighty percent of people with poor reading skills are likely dyslexic (Dakin & Moats, 2008). It affects people in a variety of ways, spanning from mild to severe. No two people diagnosed with dyslexia are the same, which makes it difficult for teachers to truly recognize the signs and symptoms of dyslexia. In addition to a wide range of symptoms, there are also several myths that hinder identification. Although dyslexia is the most researched of the all learning disabilities (National Institutes for Health, 1994), identifying the perceptions that general education teachers have about dyslexia, and teachers' perceptions about inclusion of diagnosed students in general education classrooms could support schools in diagnosing students and intervening earlier.

### **Operationalization of Theoretical Constructs**

This study consisted of four constructs: (a) perceptions of students with special needs, (b) perceptions about inclusion of students with dyslexia in general education classrooms, (c) perceptions of support from designated services staff, and (4) teachers' beliefs and knowledge of dyslexia. Each construct was measured on a Likert scale where participants indicated the extent of which they agree. The constructs were measured by University of Teachers Perception Inclusion Scale (UTPIS) (Mamah, Deku, Darling, & Avoke, 2011), and the Dyslexia Belief Index (Wadlington & Wadlington, 2005).

### **Research Purpose and Questions**

The purpose of his study was to examine the perceptions and understandings of general education teachers towards students with dyslexia in their classes. The study addressed the following research questions:

### **Quantitative Research Questions**

- R1: What percentage of students in special education receives services for dyslexia?
- R2: Are general education teachers' perceptions about students with special needs in the inclusive classroom different than special education teachers?
- R3: Are general education teachers' perceptions about inclusion of students with disabilities in the general education inclusive classroom different than special education teachers?
- R4: What is the relationship of teachers' knowledge of dyslexia and their beliefs about inclusion of students with dyslexia?

### **Qualitative Research Questions**

- R5: In what ways, if any has professional staff supported students with dyslexia?
- R6: What training have teachers been given regarding dyslexia and regarding the inclusion of students with dyslexia?

### **Research Design**

This study addressed teachers' perceptions of students with dyslexia. An explanatory sequential mixed methods design was used, and it involved collecting quantitative data first and then explaining the quantitative results with in-depth qualitative data. The quantitative phase used the University of Teachers Perception Inclusion Scale (UTPIS) and the Dyslexia Belief Index (DBI) data collected from teachers in a large urban school district in Texas to assess whether general education teachers and special education teachers' perceptions were different regarding students



with dyslexia, and their beliefs on inclusion. The qualitative phase was conducted as a follow up to the quantitative results to help explain the quantitative results. In this exploratory follow-up, the researcher examined whether general education and special education teachers had training that specifically addressed dyslexia, and how that training was used to support students in the classroom. Quantitative data were analyzed using independent samples t tests as well as Pearson's r, while qualitative data were analyzed using an inductive coding process.

### **Population and Sample**

The population of this study was comprised of K-12 general education and special education teachers employed within an urban school district located in southeastern Texas. The district operates 24 elementary schools, 6 intermediate schools, 6 middle schools, and 5 high schools. The population of the district is extremely diverse, serving students with over 80 different native languages. The total population for the district is approximately 46,000 students in grades Pre-Kindergarten through 12th (National Center for Education Statistics, 2015).

The district employs approximately 6,000 employees. Of the total number of employees, approximately 3,000 are full time teachers. The average years of teaching experience for full time teachers is 10.8 years, with 7.9 years employed in the district. The study involved Pre –Kindergarten-12th grade teachers who serve general education and special education students in the district. The participants included teachers such as classroom teachers, push in and/or pull out general education interventionists, and special education teachers.

The total student population of the district is 80.4% economically disadvantaged. The district also has a high Limited English Proficient (LEP) population (39.8%), and an at-risk population of 71.6%. Table 3.1 details the demographic information of the school district was collected from the District Profile.

*Table 3. 1*

*District Student Demographic Information*

	<b>Students (n)</b>	<b>%</b>
Total Students	47,000	100
Race/Ethnicity:		
African American	14,000	29.6
Hispanic	25,000	52.6
White	1,700	3.7
American Indian	500	1.1
Asian	5,800	12.3
Pacific Islander	70	0.2
Two or More Races	300	0.6
Economically Disadvantaged	38,000	80.4
Non-Economically Disadvantaged	9,000	19.6
At-Risk	34,000	71.6
English Language Learners	19,000	39.8

A purposeful sample of teachers from all Pre-K through 12th grade campuses in the district was solicited to participate in this study. Campuses were selected because they served both general education and special education students. Table 3.2 details the demographics of the employees in the district, which was gathered from the Texas Education Agency’s Texas Academic Performance Report for 2014-2015.

*Table 3.2*

*Employee Demographics*

	<b>Staff (n)</b>	<b>%</b>
Total Staff	6,500	100.0
Professional Staff		
Teachers	3,400	52
Support Professional Staff	500	8
Administration	260	4
Education Aide	500	8
Auxiliary Staff	1,800	28
Males	750	23
Females	2,500	77
Highest Degree Held		
No Degree	20	>1
Bachelors	2,200	71
Masters	880	27
Doctorate	35	1
Years of Experience		
Beginning Teachers	680	21
1-5 Years’ Experience	720	22
6-10 Years’ Experience	740	23
11-20 Years’ Experience	800	25
Over 20 Years’ Experience	300	10

## **Instrumentation**

### **University of Teachers Perception Inclusion Scale**

This study utilized the University of Teachers Perception Inclusion Scale (UPTIS) to measure the perceptions of general and special education teachers' perceptions about inclusion. The UPTIS was designed and validated by the researchers (Mamah, Deku, Darling, & Avoke, 2011) and included 28 items. The first seven items of the survey were used to collect demographic data from the participants. Remaining questions were divided into three categories that measure the perceptions of teachers in general, on inclusion, and about support services. The survey was designed on a Likert Scale, where participants indicated the extent to which they agree. The participants were asked to respond to the question with agreement or disagreement by selecting one of four responses: Strongly Agree (SA), Agree (A), Disagree (D), or Strongly Disagree (SD). The survey was validated by a study on the perceptions of inclusion by teachers conducted by Mamah, Deku, Darling, and Avoke (2011) for use with students with visual impairments. This study changed the wording of the survey to determine perceptions of inclusion for students with dyslexia. The items for the survey were created through literature review of the researchers. UPTIS was tested for reliability through Cronbach's reliability co-efficient. The overall scale measured 0.76.

### **Dyslexia Belief Index**

Wadlington and Wadlington (2005) developed a research instrument called the Dyslexia Belief Index (DBI) to study the beliefs about dyslexia among pre-service teachers. The DBI was also adapted and administered by Tillotson (2011) to specifically

identify differences in beliefs about dyslexia based on several factors. Participants were asked to respond to the 30 items using a Likert scale based on the belief and level of knowledge by selecting one of four responses: (1) know it's true, (2) probably false, (3) probably true, or (4) know it's true. The survey was validated in a study by Wadlington and Wadlington (2005). For the purposes of this study, the replicated DBI (Tillotson, 2011) was used, and the DBI statements were added to the Qualtrics system for inclusion on the survey.

### **Interview**

Based upon the systems theory theoretical framework (Owens & Valesky, 2007), the interview protocols were designed by the researcher Kempf (2015). The original interview questions had a total 43 interview questions that examined the perceptions of dyslexia programming from teachers. The first 13 questions of the interview protocol were used to collect demographic data from the participants. Remaining questions were divided into four categories that measured the perceptions of teachers in general, perceptions of academic practices, emotional effects, communication, and future considerations.

For the purposes of this study, the ten questions were selected for general education teachers, and a ten selected for dyslexia intervention teachers. The questions asked were specifically aligned to research questions five and six that addressed training and support. Of the questions asked, four were the same for both general education teachers and dyslexia interventionists. In addition to the ten interview questions, each participant also completed a background information form.

This interview protocol was appropriate because systems theory examines the behaviors, structures, and interactions within organizations (Owens & Valesky, 2007). Questions are aimed at providing information that will contribute to a more comprehensive understanding of the districts' dyslexia programming (Kempf, 2015). The interview questions were selected by the researcher based on key factors that make up dyslexia services and literature review. To ensure validity, each interview was tape recorded and transcribed. A detailed examination of the data allowed for the coding of common themes and/or categories (Kempf, 2015).

### **Data Collection Procedures**

The researcher obtained approval to conduct the study from the University of Houston-Clear Lake (UHCL) Committee for the Protections of Human Subjects (CPHS) and the participating school district's the Institutional Review Board (IRB) before collecting any data. Following permission being granted from both institutions, the researcher met with the Director of Leadership and the District Coordinator for RtI and Dyslexia to share the purpose of the study, and to present a cover letter and survey that was distributed to the building principals in the district via email. Each principal then shared the email that included the link to the survey, with staff at their respective campuses.

### **Quantitative**

An email with a link to the survey was sent out simultaneously to all campuses with the cover letter to solicit volunteers to participate in the quantitative study. The email included an electronic consent form as well as instructions outlining the survey

instrument and timeline for completion of the data completion process. Appendix B displays a copy of the survey cover letter that was emailed to participants.

### **Qualitative**

During the survey, participants were solicited to participate in face to face interviews. The survey participants that were interested provided their contact information at the end the of the survey. Interview participants were then randomly contacted by the researcher to participate in the interviews. Individual interviews were then set up based upon the availability of the interview participant. Each interview was led by guiding questions, but participants were given the autonomy to speak beyond the scope of questioning, if they felt inclined to do so, and as it pertained to the guiding question. By providing contact information, each interview participant also gave consent to be contacted for participation in the face to face interview process.

Each interview was contacted individually via email, at which time, each participant responded with written consent to participate further in the interview process. Each interview was conducted in a secure room at the designated meeting time. All interviews were audio recorded with the knowledge of the interview participant. The researcher also took scripted notes. A total of eleven face to face interviews were conducted.

Upon completion of each interview, the recordings were transcribed. Data collected from the audio taped interviews (see Appendix D) was collected, transcribed, coded, and analyzed to find emergent themes among the responses of participants. The data collected are stored electronically on a desktop computer and a flash drive, both are

which password protected. Results of the study will be kept for five years before destruction.

## **Data Analysis**

### **Quantitative**

Question one was answered by comparing the total number of students registered in the district against the total number of students that receive special education services for dyslexia are identified as dyslexic. To answer questions two, and three, and four all data were uploaded using SPSS for analysis. An independent samples t-test was conducted four questions two and three to determine if there is a statistically significant mean difference between the perceptions of dyslexia and the beliefs of inclusion of general and special education teachers. The independent variable, assigned to subject matter, was divided into two categorical groups: (a) general education teachers, and (b) special education teachers. The dependent variable, general perceptions and inclusion beliefs, were the continuous variables. Cohen's *d* was used to calculate effect sizes (Cohen, 1998). To answer question 4, to identify the relationship between what teachers know and their feelings about inclusion a Pearson's *r* correlation coefficient was conducted.

### **Qualitative**

The qualitative data for questions five and six was analyzed using an inductive coding process. The process identified emergent themes based on participant responses from individual face to face interviews. Information gathered was sorted and categorized



by themes. Data were organized and simplified based upon the response of the participants during data reduction.

### **Validity**

Validity of the content was determined by performing member checking and peer review throughout the data collection and data analysis phases. As the data were collected, the focus groups were recorded and transcribed verbatim to ensure that all responses were examined during analysis. All data were organized into themes or categories, paying special attention to those that reoccurred. Member checking of data was established by sharing the transcribed interviews with focus group participants to ensure accuracy.

### **Privacy and Ethical Considerations**

The researcher gained approval from UHCL's CPHS and the Institutional Review Board (IRB) of the participating school district before collecting data. An email was sent out to all teachers in the district. Included in the email will be the survey cover letter that states the purpose of the study, ensuring that all participants would be aware that participation is voluntary, and that their responses and identities would remain anonymous. Completion of the survey by the participants will imply consent. All quantitative data will be loaded into SPSS and verified for accuracy.

Methods to protect confidentiality will be utilized by the researcher for the qualitative study. The researcher will request that confidentiality from the participants be in place, by not having conversations with one another outside of the focus group. While the confidentiality is not guaranteed, participants will be assigned pseudonyms to assist in

protecting their identity and ensuring confidentiality. The researcher will keep all data confidential by storing it in a locked filing cabinet, and that all electronic data will be password protected for five years after the study. At the end of the five years, all data will be destroyed.

### **Research Design Limitations**

There are several factors that posed as limitations to the study. The survey was sent out via email to all Pre-K through Twelfth grade building principals. Although a directive was given to share the survey with all campus professional staff, the survey was not sent out at each campus. By not having the survey shared, the number of potential participants was limited. The researcher requested for many participants, however, the response rate was between 15 and 18 percent of the total professional staff population.

The sample sizes for general education and special education teacher's responses to the survey were very unequal. Also, the researcher faced some response bias from some participants. There will be participants who varied on opposite ends of extremes during the time of the study. Because this study was not experimental, causation could not be inferred by the findings. The instrument used in the study was a self-reporting form.

There was a limitation based upon the validity of the participant's answers to certain questions. Also, the number of incomplete responses collected hindered the data collection process. Of the responses received, there were some that were not completely filled out. The data from those surveys was discarded, and not used for the data analysis. In addition to limitations with the instruments, there was also a factor of time that limited the research moving forward. The research district ran a climate survey prior to the

perceptions survey being shared. Due to an extension with the climate survey, the distribution date was pushed back.

### **Conclusion**

Dyslexia is a learning disability that affects many people worldwide. Although there are many generations that have been diagnosed, there are quite a few that still have not been identified. The purpose of this study was to interview teachers in an urban school district. The district was chosen because of established relationships with others district employees, as well as of knowledge of the practices that have taken place within the district in regard to servicing dyslexic students.

The researcher chose to use a survey as the primary source of quantitative data collection. This method was chosen because; many of the teachers employed in the district have had annual training on the signs of dyslexia yet fail to recognize them in students. Many of the students go undiagnosed for many years, which have an adverse effect on the academic success of the students. The goal was to identify the perceptions of the school personnel, so that training can be effectively created to answer those lingering questions that prevent staff from taking students through the identification process. All the data was analyzed based on transcribed notes, audio recordings, and scripted notes. The researcher will leave out all personal biases that may have an affect the analyzation of the data. Moving forward in Chapter Four, the researcher will present the actual interview questions presented to district staff, the data that supports why the questions were asked, and the findings of the data once analyzed.

## CHAPTER IV

### RESULTS

The purpose of this mixed methods study was to identify the perceptions and the beliefs of inclusion held by general and special education teachers in a public-school setting. The quantitative data for this study consisted of archived dyslexia data from the school district, as well as data from the Dyslexia Perception and Belief Survey. The qualitative data consisted of individual interviews with five dyslexia intervention teachers and six general education teachers. Archived data that describes the structure of the districts' department that supports RtI and dyslexia was also collected. This chapter presents the results for each research question that guided this study.

#### **Demographic Characteristics of the Participants**

A survey was sent out to teachers who worked on Pre-Kindergarten through Twelfth Grade campuses. In addition to general education teachers, interventionists, content specialists, and special education teachers also participated in the survey. An analysis of the data revealed of those who participated in the survey, 84% of the participants were female, and represented five ethnic groups, based upon their written responses: African American, Asian, White, Hispanic, and Biracial. Some participants chose not to reveal their gender or ethnicity on the completed survey. Table 4.1 shows the comparison of each ethnic group and gender distribution of survey participants.

*Table 4.1*

*Gender and Ethnicity of the Participants*

	N	%
Gender		
Female	200	83.7
Male	39	16.3
Ethnicity		
African-American	54	26.5
Asian	8	3.9
White	94	46.1
Hispanic	40	19.6
Biracial	8	

The participants varied in age and years of experience. Participants ranged in age from 25 to 66, with an average participant age of 43.6, and years of teaching experience ranged from one year to thirty-two years with an average of 13.8. In addition to age ranges and total number of years teaching, the surveyed also analyzed the number of years in the school district and whether the participants had previously taught students that had been identified as dyslexic. Of the survey participants, N= 182 (77.5%) have had experience working with dyslexic students. Fifty-three (22.6%) of survey participants reported that they had not taught students diagnosed with dyslexia. Table 4.2 shows the average age of participants, the average number of years teaching, and years within the district. Table 4.3 shows the frequency and percentages of those who have taught students with dyslexia.

Table 4.2

*Average Age, Number of Years Teaching, and Years in the District*

	N	Minimum	Maximum	Mean
Age	239	25	66	43.6
Years Teaching	239	1	32	13.8
Years in District	239	1	27	11.1

Table 4.3

*Taught Students with Dyslexia*

	N	%
Student with Dyslexia	235	77.5
Student without Dyslexia	235	22.5

### **Research Question 1**

Research question one asked for the percentage of students that receive services for dyslexia. To determine the total percentage, archival data was collected from the school district, and then compared to the total number of students served by the district in Pre-Kindergarten through Twelfth Grade. The total number of students in the district used in this study is approximately 46,000 registered students in grades Pre-Kindergarten through Twelfth grade. Of those approximately 950 students have been identified as dyslexic. The percentage of students that receive services for dyslexia is 2.1% of the total

district population. This is significantly less than the statistical data that shows 1 in 5 people are dyslexic.

## Research Question 2

Research question 2 asked if there is a difference between general education and special education teachers' knowledge about dyslexia. Teachers' overall perception of their knowledge of dyslexia is important when identifying characteristics that may lead teachers to suspecting dyslexia as a possible cause for the difficulties children have while reading.

To determine whether there was a significant different between levels of knowledge about dyslexia based on the position, an Independent Samples T-test was conducted. Data from the Dyslexia Perception and Belief survey was used to identify the level of knowledge between special education teachers and general education teachers. The total score for the dyslexia assessment was examined by teacher's subject matter and it was found that there were no significant differences between general education and special education teachers' knowledge of dyslexia  $t(180) = -1.3, p > .05$ . However, the sample sizes for both groups were very unequal. See Table 4.4

*Table 4.4*

	Subject Taught	N	Mean	SD
Dyslexia Total	General Education	162	88.4	6.4
	Special Education	20	90.4	8.5

The findings also indicate that despite the position held or the students served in any grade level, teachers do not have adequate background knowledge needed to identify or service students with dyslexia. When asked if recognizing dyslexia as learning disability that affects language processing, 79.7% of both general education and special education teachers agreed. However, 50% of special education teachers agreed that they received intensive training to work with students diagnosed with dyslexia, and only 15% of general education teachers acknowledge having training to support students with dyslexia.

### **Research Question 3**

Research question 3 asked if there was a difference in general education and special education teachers' perceptions of inclusion of students with special needs. This question addresses the perceptions held by teachers of inclusive classrooms that service dyslexic students. An Independent Sample T-test was run to analyze the perceptions of general education and special education teachers.

The total score for the inclusion beliefs assessment was examined by teacher's subject matter and it was found that there were significant differences between general education and special education teachers' perceptions of inclusion  $t(187) = -2.3, p < .05$ , Cohen's  $d = .5$ ; which is a medium effect size. It should be noted that the sample sizes for both groups were very unequal. See Table 4.5



Table 4.5

	Subject Taught	N	Mean	SD
Inclusion Total	General Education	167	64.1	7.3
	Special Education	22	67.8	7.7

The findings of the inclusion section of the survey that most teachers, regardless of the position held have some general knowledge about dyslexia. Of those surveyed, 65.5% perceived an inclusive classroom as being a good idea to meet the needs of students. When asked if there were specialists within in the district that specifically work with dyslexic students, only 71% of those surveyed could accurately answer the question. Which is an indicator that, many teachers, both general education and special education, are unaware of the primary resources available to them within the district. When asked about professional development available to support all teachers that work with dyslexic students, 29% were aware of sessions offered, while 41% were unable to indicate whether sessions were offered or made available to teachers.

#### **Research Question 4**

Research question 4 asked what the relationship between what teachers is known about dyslexia and their perceptions about inclusion. Dyslexia is a specific learning disability that does not categorically fall under the special education umbrella for services; therefore, students are in an inclusive general education setting and taught by general education teachers. A Pearson's correlation coefficient was calculated to determine if there was a significant relationship between what teachers know about

dyslexia and their feelings about inclusion of students with dyslexia or other learning disabilities and it was determined that there was no significant relationship,  $r(192) = 0.1$ ,  $p > .05$ . See Figure 4.1

Figure 4.1

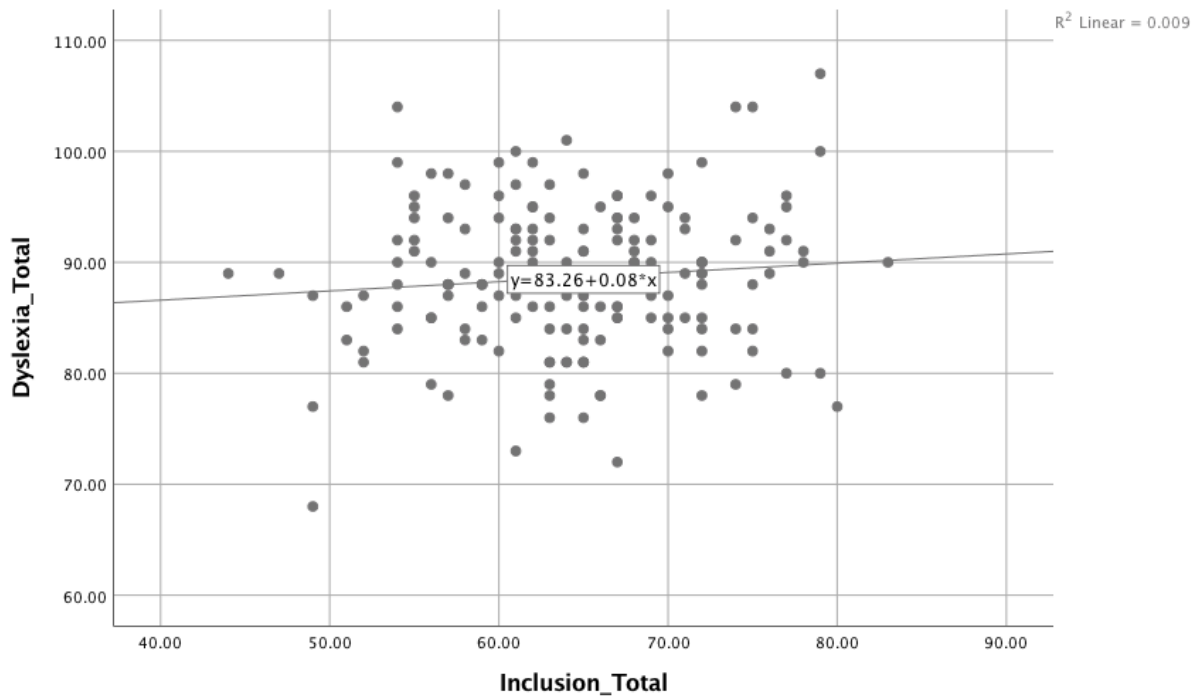


Figure 4.1 Scatterplot displaying the relationship between teachers' feelings about inclusion and their knowledge of dyslexia.

Findings indicate that for this sample, the knowledge of dyslexia as a learning disability is not related to the belief that students should be taught in an inclusive setting. Educational success of inclusion may depend on many factors, not only the disability of the student, but the also the expertise and willingness of the teacher to attend to the needs of these at-risk students (Lindsay, 2007).

During the qualitative analysis phase of this study, a total of eleven teachers were interviewed for this study. Each participant was given a pseudonym to protect their identities. Each interview consisted of ten questions related to the teachers' knowledge of dyslexia, their role in teaching dyslexic students, training and support provided, and the students served. While some of the questions asked were the same for both categories of teachers interviewed, there were some questions that were specifically related to the position held by the teacher interviewed. Data analysis of research questions five and six based on the interviews revealed a collective of five common themes among the general education and dyslexia intervention teachers. The five common themes that emerged from the data were: general knowledge, training, instructional skills and strategies, programming, and social-emotional support. Each of the five themes are interrelated.

### **Research Question 5**

Research question five qualitatively analyzed the support that dyslexic students received from the professional staff that service them. The quantitative findings from research question two showed that both general education and special education teachers' knowledge of dyslexia was about the same, while research question three showed significant differences in the perceptions of inclusion or students with learning disabilities. Qualitative data was collected through interviews with general education teachers and dyslexia intervention teachers that provide intervention services for dyslexic students. Data collected from the interviews provided insight into how training affects the abilities of teachers' that work with dyslexic students. It also provided insight into how the knowledge of teachers' affects their perceptions of inclusion for students diagnosed

with dyslexia. The two themes that emerged in research question five were general knowledge and training.

**General Knowledge.** When working with students who are dyslexic, a basic knowledge of the learning disability is key to the success of the instruction. General education teachers and dyslexia intervention teachers were asked to share their dyslexia definitions. The definitions included key components from definitions recognized in research and the common myths and misconceptions associated with dyslexia. Results for this research question are reported based on the two groups of teachers interviewed.

**General Education Teachers.** General education teachers are responsible for teaching dyslexic students in an inclusive learning environment. Based on the all respondents' definitions, two sub themes emerged in the findings: personal connection to dyslexia and myths and misconceptions. While some of the definitions provided only addressed dyslexia and the teachers' personal connections, other definitions also included references to common myths and misconceptions in addition to the personal connections that were made.

**Personal connection to dyslexia.** The depth of the definitions varied but did not depend on how long one had been teaching, but rather personal experiences by being diagnosed as dyslexics themselves, having a family history of the learning disability, or working directly with students. One of the general education teachers has been formally diagnosed with dyslexia. Two additional teachers have siblings that have been diagnosed with dyslexia. In addition to the three teachers that have a family connection to dyslexia, two of the general education teachers have personal connections through the students

they taught. Only one of the six general education teachers had no personal connection to dyslexia.

One of the six teachers, Shelly, a white woman in her late forties, had a formal dyslexia diagnosis. In addition to her personal diagnosis, she also shared, during the interview, that both of her children had also been diagnosed with dyslexia. She shared her definition of dyslexia by stating, “Dyslexia is a misfiring of the neurons in the brain. Part of the problem is that not any two (people) are the same.” Benjamin and Ava both based their definitions around their knowledge through their personal connections. Both teachers shared they had siblings diagnosed with dyslexia. He worked with students at the secondary level, while Ava taught students at the elementary level. Ava was a white female teacher in her early forties. She said, “My definition of dyslexia is that it is a learning disability that makes it hard for people to comprehend written language and sometimes spoken language.” Benjamin, a white male, stated that he has does not have an educational background. He shared:

Well, once again, coming from an engineering world and not having been exposed to it (in education), it guesses to me, it’s when people look at a word, like cat and they might see C-A-T or something. It’s not that they’re cognitively delayed, but it’s a learning disability that is specific to reading he printed word.

So, I guess that would be my definition of it.

He shared that his knowledge came from what he has seen about the disability over time through the struggles of his sibling.

Two of the remaining three general education teachers based their definitions on the knowledge received through some training, and from working directly with students over the course of their careers in education. Grace, a Hispanic, first year teacher shared her definition of dyslexia by stating:

Well, before doing any research, I just thought that children or adults with dyslexia just had a difficulty reading, and with numbers, and, basically, anything that was written on paper, I just thought that they had difficulty with it. I really didn't have a specific definition of it. I didn't know much about it.

The researcher asked for further clarification to the question, by asking, "And, has it changed?" Grace continued her definition:

Well, I've done some research just because we have a student, and I now understood that, yes, they do have a difficulty reading with words, but that doesn't mean that they are going to have a difficulty, for example, in math. They could be very sharp in math. It's just that when it comes to reading with words, they have a difficulty decoding or with vocabulary.

Grace's definition was based on the connections she has had to dyslexia through her personal research and the students she has taught. The other general education teacher, Darcy, a Hispanic woman in her late forties, taught at the secondary level. She defined dyslexia by saying, "They have trouble with the reading and with the writing." Sarah, the sixth general education teacher interviewed, did not have a personal connection to dyslexia, therefore her definition did not align with the personal connection sub theme.

The findings from the definitions provided by the general education teachers suggested there is an understanding that dyslexia affect the way the brain processes information.

*Myths and misconceptions.* All six of the general education teachers' definitions included the myths and misconceptions associated with dyslexia. Because of the teachers including the common myths, the sub theme myths and misconception emerged. Typically, dyslexia is only associated with letter reversals in spelling and reading difficulties. Each of the general education teachers included at least one myth or misconception in their definition of dyslexia as a learning disability. Definitions that included myths and misconceptions included references to letter reversals and spelling errors.

Three of the five general education teachers that had personal connections to dyslexia clearly identified specific deficits that aligned with their own personal experiences. Their definitions also included common misconceptions. Shelly, the dyslexic general education teacher, also included misconceptions associated the common misconception of spelling and dyslexia. She addressed the misconception by stating:

Some are great at math. Some can actually spell, which always amazes me because I can't. Oh, my spelling is atrocious. I know it's not an official thing, but most people that know that are dyslexic, we can read upside down and backwards, which is handy. But some of the things are that it can be explained and explained, and it can be the simplest explanation, and you just don't get it. You just don't get it, but then somebody will change just one way of doing something on one word, and you're like, "Oh!" And you've got it. We read slower than others, and that

may be an interpretation thing. I'm not sure. Or just you'll be reading, and suddenly, you're like, "Wait, what?" And you go back. Driving or directions, those can be fun. Yeah. But it does not affect intelligence. They're usually extremely intelligent students, and they begin to feel stupid because you can't catch things. You can't figure it out as fast as the others.

Shelly's definition was based on her personal experience with the learning disability.

Benjamin elaborated on his definition by saying, "The letters are jumbled in a different direction than what maybe somebody else might see. I guess that's my version of it. And they have trouble reading, I guess, with reading comprehension." Benjamin's definition included the myth that dyslexics see letter reversals while reading. Darcy elaborated on her definition saying:

My definition of dyslexia is when a student has trouble with reading text, and when they write, they might write letters backwards. And that's not necessarily a reason to be dyslexic, but I think when I first started learning about it that was one of the things that you can look for.

Darcy's misconceptions of letter reversals and visual perceptions as they are associated with dyslexia were based on her personal understanding, and interactions with her dyslexic student.

Sarah, an African-American woman, in her early forties was an elementary teacher. As she defined dyslexia, her response specifically identified the most common myths and misconceptions of dyslexia identified in research. During her interview, she shared that due to the grade level taught, she never had any formally diagnosed students



in her classes, and therefore did not have a personal connection to the learning disability.

She defined it as:

When a student switches letters around. When they're reading, when they're writing, they have trouble understanding or comprehending their reading and sounding out words, phonics. That's about it.

While the previous four general education teachers' definitions included the misconceptions that dyslexia is only associated with letter reversals in spelling and reading difficulties, the other two general education teachers addressed the disability as it is associated only with reading difficulties. Ava had sibling with dyslexia, she shared some symptoms that she associated reading achievement and dyslexia. She said, "They have difficulty with reading comprehension when they have really high oral comprehension, messy handwriting, and distractibility is also a kind of a signal to me, as well." Grace, the first-year teacher, also addressed reading achievement of dyslexics. While sharing her definition, she specifically addressed the misconceptions associated with phonological awareness, a deficit that is typically observed with students that have been diagnosed. She said:

They are going to have a hard time reading and decoding words. Probably spelling and, I mean, understanding any concept that you are explaining, especially if it's just written on the board. They're going to have a difficulty understanding any concept.

Grace identified difficulties dyslexia students have in the academic setting. The findings from the definitions provided by all the general education teachers suggested there is a

misunderstanding of the characteristics associated with dyslexia. With most of the associations of dyslexia only being the myths and misconceptions, the identification of students is hindered.

*Dyslexia Intervention Teachers.* Each of the general education teachers shared their personal definitions based on experiences working with students, and their perceptions about the learning disability. Each of the five dyslexia intervention teachers that participated in the interviews was also asked to share their definitions of dyslexia. The dyslexia intervention teachers responded with an understanding that was more aligned to the formally recognized definitions found in research and textbooks, however their definitions also included common myths and misconceptions. The two sub themes, personal connection to dyslexia and myths and misconceptions, also emerged in the findings from the responses from the dyslexia intervention teachers.

*Personal connection to dyslexia.* Each of the five dyslexia intervention teachers were personally connected to dyslexia through family or students they had taught. Although each personal connection was different, each intervention teacher associated their definition to personal experience. Of the five dyslexia intervention teachers interviewed, one was formally diagnosed with dyslexia. One of the five teachers had a familial connection, through a sibling that had been formally diagnosed, while the remaining three teachers had personal connections with students.

Tom, a Hispanic male in his late forties, worked at the secondary level. During his interview he shared that he has been formally diagnosed as dyslexic. Tom said:

Not being able to truly grasp what's in print. Not being able to truly define words or phrases as we read them in print. Dyslexia too means struggles in reading because we tend to predict a lot of what it's in print. And just trying to make connections between what's on text and what we are actually reading. And I know the different types of-- the way dyslexia affects many of us. I would talk about the fact-- I do have a student that-- she constantly sees letters falling off the page. I have another student that he can only read three sentences at a time. So, when I print something for him, I have to make it in large print because, again, that's the only way that he can actually perceive what he's actually reading. And, of course, with those strategies, it helps him a lot.

Not only did Tom share his own personal experience, he also shared experiences that he has while working as dyslexia interventionist. Kate, an African-American woman in her early fifties, shared that her definition and desire to know more about dyslexia had a more personal connection. During her interview, she shared that she had a sibling that has been diagnosed as dyslexic. Her definition centered more about what she does, taking on a more personal approach to defining the learning disability. When asked to define dyslexia, she shared:

If someone asked me about dyslexia, "Well, what do you do?" I say, "Well, I help children to learn to overcome reading difficulties. They're not going to overcome it and get on with it. I teach them how to cope with it, strategies to use to make their academic life a little easier. I see dyslexia not as a reading disorder, but as a different way of thinking."

Kate connected her definition to the experiences that she has had, just as Tom had done while defining dyslexia in his interview.

Emily and Mary were also African-American women in their mid-forties. Both ladies serviced elementary students. Their personal connections to dyslexia were also based on the interactions they have had with diagnosed students. Mary, an African-American woman, in her mid-forties serviced students at the secondary level. During her interview, Mary defined dyslexia as:

Dyslexia is neurological—I don't like to use the word disorder. It's categorized a disorder, but I don't like that. It's a neurological issue that affects the way the brain processes information. I like to tell my students that they just think and see things differently.

Emily's definition was based on research, but also included a personal connection. When asked to define dyslexia, Emily shared:

Well, my definition of dyslexia is a student who has expressive and receptive concerns or issues with processing information that's given to them. Because of the way a dyslexia brain functions when kids hear things or see things, you get a different – you may get a different oral response or written response.

Both women provided definitions that focused on information commonly found in research. Mary's definition made the personal connection by talking about how she defines dyslexia for her students.

Shelia has been a dyslexia intervention teacher for several years. She is in her mid-forties and works at the elementary level. She was also personally connected through

the role she as a dyslexia interventionist working with diagnosed students. As she defined dyslexia, she said:

Well, it's a learning disability, that they'll have forever, but it more involves reading, writing. They struggle with phonemes, biological awareness, putting words together, a lot of times with writing.

While giving her definition, Shelia referred to the students that she works with on a daily basis.

Being in a position that allows them to work closely with dyslexic students provided each dyslexia intervention teacher to have a personal connection. The position also allowed the teachers to share their definitions based on the level of knowledge they have being in such a specific role within a school setting.

*Myths and misconceptions.* Three of the five dyslexia interventionists also included common myths and misconceptions in their definition of the learning disability. Two of the three interventionists had also been in their role for less than five years. The myths and misconceptions that were shared by the interventionist included, the thought the dyslexia can be outgrown, visual perceptions, and letter reversals.

Kate, the dyslexia interventionist with a dyslexic sibling, and the most experience in the position addressed one of the common misconceptions in her definition. One of the myths addressed in research is that dyslexia can be outgrown. She said:

Parent, "Will they outgrow it?" "No. But I'm going to show you how to cope with it, some strategies you could use, and some things that are helpful. But you don't outgrow dyslexia."

She used her definition to address typical concern that had been addressed with parents and other adults inquiring about a student diagnosis.

The other two interventionists that included myths and misconceptions in their definitions were Tom and Shelia. After providing a partial definition found in research, Tom also addressed the misconception that visual perception is an indicator that a child may have dyslexia. In his response, Tom said:

For example, when we are reading, we could see that, in print, you have the word house. But then in our mind, we consistently see the words horse. So just like that, or when we know that something that truly makes sense in our mind or we cannot read something towards the end of a phrase, we tend to just predict what we think the last part of the phrase actually means.

Shelia concluded her definition by providing an example to further explain her definition. While elaborating on her definition, Shelia identified letter reversals, a common misconception, as a reason people assume a child has dyslexia.

“People tend to always think, “Oh, it’s flipping letters,” but it’s not always that. It’s really reading. They struggle with fluency. But like I said, with the strategies, they can, not overcome it, but it’ll help them.”

Both Shelia and Tom addressed the most common misconceptions found in research.

Each participant was asked to define dyslexia. Mary and Emily did not address common myths and misconceptions in their definitions. While analyzing the data, most teachers recognized that dyslexia is a learning disability that affects the way the brain processes information when one reads or writes.

**Training.** Several of the interview questions posed were asked to gain further insight into the level of training teachers have received to effectively support students with dyslexia. For the purposes of this study, training pertained to the professional development offered to all teachers. Professional development sessions included opportunities offered on campus, by the district, other districts in the surrounding area, and the state regional teacher training facilities. Examining training opportunities was also important; as it provided insight into how all teachers expanded their knowledge about dyslexia, research based instructional strategies, as well as testing and accommodations for students.

During the data collected about the dyslexia within the district used for this study. The district had a department that was specifically designated to identify and support students in need of additional assistance, RtI concerns, and dyslexia training and intervention. Documents obtained in the archival data collection revealed that through the department, each elementary and intermediate campus had designated support on site, while middle and high school campuses had designated supports that handle multiple campuses. There was also a central office team that supported clusters of campuses when additional needs arose.

Based on the information provided on the Background Information for All Interview Participants, only one out of eleven general education and dyslexia intervention teachers interviewed acknowledged that they received any training related to dyslexia through their college coursework. Prior to each interview, the participant was asked to complete the background information form in its entirety. Of the six general education teachers interviewed, only one teacher had taken a professional development course

related to dyslexia through the district, despite all six teachers having indicated that they had taught students diagnosed with dyslexia. Out of the five dyslexia intervention teachers interviewed, four of them indicated having had multiple professional development opportunities provided through the district and other teacher training agencies.

*General Education Teachers.* General education teachers were generally unsure about whether there was professional development offered, and if so, what those sessions were. They were asked about their knowledge of district staff development and/or training opportunities for teachers that facilitate the academic and emotional needs of students with dyslexia. In addition to sharing what opportunities are available, general education teachers were also asked to elaborate on those opportunities. Based on the responses of the general education teachers, two sub themes emerged: knowledge of professional development opportunities and willingness to seek additional training.

*Knowledge of professional development.* Continued professional growth is essential to teachers. While most training focuses on current instructional practices, general education teachers should also be trained to meet the instructional needs of students with learning disabilities. Of the six general education teachers that participated in the interviews, two shared that they were required to take a prescribed set of courses outlined by the district. The remaining four teachers were allowed to select the professional development courses they attended based on personal preferences.

The two teachers, Benjamin and Grace, were in their first year of teaching. Both of them were required to follow the district professional development course outline.



Benjamin, a white male in his late fifties, taught at the secondary level. When asked about professional development opportunities available to him, Benjamin stated:

I do not know. I would bet on it, but I can't say. I can't give you the name of the person that you'd need to go talk to or if I'm sure that it's there. But once again, you're dealing with first year teacher that just came over from the engineering world, so.

Grace, a Hispanic female, said, "I'm sure they do, but I haven't done enough research to know if they actually do and what the name of the programs is." Both Grace and Benjamin shared that their professional development hours were prescribed by the district, and therefore they did not seek out other professional development opportunities. They also shared that none of the prescribed courses addressed dyslexia.

The other four general education teachers were also asked to share their knowledge of professional development. Three of the four of the teachers had been teaching with district for a minimum of five years. Two of those four teachers also taught at the elementary level. Ava, a white female, said, "Probably. I would not have chosen to go any of them." Sarah, an African- American female, was the other elementary teacher. Her response was similar to Ava's. She responded by saying:

I guess. I'm going to say yes because, I mean, it's dyslexia, so they would need to have something to service the kids with or to train teachers of students with dyslexia.

Both women were sure courses were offered, but neither had sought out additional information regarding the course offerings.

Darcy and Shelly, the other two general education teachers, both serviced students at the secondary level. Both women were also asked about the professional development opportunities available to them. Darcy, a Hispanic female shared, “That I’m aware of, I don’t think we do.” She asked the researcher to clarify the question, by asking “Yearly? Are you speaking yearly?” Once clarified, she continued saying, “On a yearly basis, I don’t think we do.” Shelly, a white female, also serviced secondary students and has been diagnosed as dyslexic. She shared, “I’ve only been here three years. I do believe so. Yes.”

When asked, each of the six general education teachers assumed the district offered professional development courses related to servicing dyslexic students, however, none of the six teachers were able to give a definitive answer.

*Willingness to seek out additional training.* In addition to having knowledge of the professional development opportunities available to them, attendance of the sessions is subject to a teachers’ willingness to attend the sessions offered. All six of the general education teaches did not indicate in their responses, an interest in taking sessions that specifically addressed dyslexia.

While the two first year teachers were unable to specifically identify professional development opportunities, there was no indication, based on their responses, that they were unwilling to attend trainings. The other four general education teachers shared that the district had opportunities available, however, through their responses, it was evident that attending additional sessions directly related to dyslexia was a priority area for professional growth.

Although, Ava shared the district had opportunities, she elaborated on her response by saying, “I would have CLEP'd out. Dyslexia runs in my family. I have a lot of personal experiences that.” When asked to elaborate on the opportunities available, Shelly, a secondary teacher said:

No. For the first three years, we take a bunch of training, and I do apologize

That's one of the problems that I have is that if I don't have things listed in front of me, I may have taken the training and just filed it away as something I use, but not something I've classified as being towards this particular thing.

Shelly shared that having dyslexia, she struggled with recalling professional development sessions she had taken, or that had been offered. Sarah and Darcy provided insight into whether or not the district offered professional development opportunities, they also shared their feelings toward attending such sessions. While closing out her statement about whether or not the district offered professional development, Sarah said, “I've just never attended any of them.” Darcy did not indicate a willingness to attend dyslexia specific professional development sessions one way or another.

There was an uncertainty among general education teachers about the opportunities available to them regarding continued professional growth in dyslexia. While most responded, yes, the researcher recognized hesitation among the interview participants, and the responses they gave. In addition to definitively providing an answer, the veteran teachers also did not express a significant amount of interest to attend the trainings, whether available or not.

*Dyslexia Intervention Teachers.* According to the information provided to the researcher from the departmental coordinator, the structure of the department was such that, each campus had a program established to meet the various needs of campuses that address dyslexia and 504. Each of the five dyslexia intervention teachers shared that they regularly attended meetings conducted by the district coordinator that provided updated information and training. Professional development opportunities were also provided throughout the year. In turn the information received at the monthly district meetings, was to be shared at each home campus with the general education teachers and other professional staff.

As the primary line of communication between the district and the campuses, the dyslexia intervention teachers were asked, to share some of the practices the district or school implemented that contributed to the dyslexia program. Based on the responses from each of the five dyslexia intervention teachers interviewed, four sub themes emerged: departmental communication and training, individual campus professional development, research based instructional program training, and local and regional professional development opportunities.

*Departmental communication and training.* According information shared to the researcher by the departmental coordinator, to meet the growing needs of the district as it relates to dyslexia, 504, and RtI, a central office department was created. As the interventionists were interviewed about programming in place, four of the five interventionists shared that the district coordinator directly provided them with ongoing training.

Emily and Shelia were both elementary dyslexia intervention teachers. They indicated that the departmental coordinator was the source of communication and training opportunities. Emily, an African American dyslexia intervention teacher at the elementary level with approximately thirteen years of experience shared thoughts on the departmental communication and training offered. She had the least amount experience in the position of the five interventionists. Emily shared those thoughts on the communication and training by stating, “Well, the district contributes the position and the different trainings that we receive through the coordinator.” Sheila, an African-American, female also working at the elementary level, shared her personal insight into the training and communication provided by saying:

The coordinator, when you get the position, she will train you on testing students. And anything else that you need, she'll train you on or she always is open to question. She'll come to the campus. She'll help you with anything you need. There are two other people who she kind of has under her that any time we need help with even testing because I've had to have one of them come here and help me test a Spanish dyslexic student. So, I mean, any kind of support I think we need, we have.

Both women felt as though the creation of the dyslexia interventionist position, and the training provided to those teachers contributed to the over training and communication provided by the district.

Two of the dyslexia interventionists had been in the position long enough to provide in depth insight into the level of communication and training teachers, in the role,

received. Tom and Kate, both had been in the position for more than five years. Tom, a secondary interventionist shared what he believed the district contributed the program. While sharing his thoughts on the contributions made, he said, “District-wide, we get it through our central office, which is the district coordinator.” Kate, an interventionist at the elementary level, had been in the dyslexia interventionist shared her thoughts. She also responded by sharing what is done at the district level to support communication and training, by stating:

We have monthly meetings with our supervisor of campus. We have ongoing professional development. We have several people in our department that we can go to for help, and they'll come to us.

Based on the responses from the dyslexia interventionists, district provides support in the form of the designated position. Those selected received information and training via monthly meetings to support the in their roles. Each of the four-interviewed acknowledged that a lot of the training they received was from the departmental coordinator. Mary, a secondary interventionist, did not refer to any training or communication she had received from the departmental coordinator.

*Research based instructional program training.* Research-based programs are used to meet the wide range of student needs. In order to support the various needs of the students that are served, the dyslexia interventionists shared information about some of the program training they have received. Two of the five interventionists identified specific programs they were trained in that would support their intervention of dyslexic students.

Shelia and Kate, two of the dyslexia interventionists, have been in the position for three or more years. They shared that training had been provided to them on the LETRS program. LETRS was one of the two researched based programs they elaborated on in their responses. Kate had been trained and shared that it is a six-week training program held over the summer. While sharing her training experience, she said:

The coordinator has even flown people in to do a six-week training called LETRS. We encourage the teachers to take the same training that we had. We did LETRS for six weeks. We offer it to the teachers for three weeks. And she gave us the option of doing it in summer, but we do ongoing professional development. And, we also have an opportunity-- we can present to other campuses, or we can present over the summer. So not only are we reinforcing what we know, but what we're learning at the same time.

Shelia identified LETRS as one of the trainings that is offered to dyslexia interventionists. She said, "I know that LETRS has been offered a couple of times." In addition to being trained in LETRS, Kate and Shelia also shared that they had been formally trained in the Read Well and Success Ed. programs. Sheila spoke about a different program for which she had been trained. She said, "We also have the Read Well program. She trained us on Read Well." While Shelia shared that training had been provided on the Read Well program, Kate shared about the training receive for another program. She said, "We also did a program called Success Ed. while we were

implementing the information to the computer, so anyone or any campus could see it. We offered that to the teachers.”

While both of the interventionists shared program, specific trainings offered to them, the other three interventionists gave general responses to training they had received. The other three interventionists did not address specific, researched based programs, for which they had been trained. Their responses, along with the other two dyslexia interventionists agreed that the district does communicate and provide training opportunities for them the department.

*Campus and district professional development opportunities for general education teachers.* The interventionists also shared the opportunities for further growth that aligns to their position, as well as other professional staff in the district. They were also asked about professional development opportunities for general education teachers through the campus and district. All five of the dyslexia interventionists shared that the district did provide training opportunities for general education teachers. Four of the five teachers’ comments reflected an adequate amount of training opportunities provide by the district. Emily shared that there are district and campus professional development opportunities that existed for general education teachers to receive training about dyslexia. When asked what professional development opportunities existed, however, most general education teachers did not take advantage of those sessions and relied on her to provide training. She responded by saying:

None. And I really believe there needs to be more because that's the only way that our dyslexia population and program will grow. And campus-wise, they just kind



of rely on me because that's my position, and they kind of wait until it's brought up by me.

Tom, an interventionist at the secondary level, also shared that he provided training for the general education teachers.

District-wide, I'm not real certain. But like I said previously, in my campus, I do provide the training at the beginning of the year. I provide it with a PowerPoint, talk about what dyslexia is, and provided them with hard copies and examples of what to look for.

Kate had been a dyslexia interventionist since the position became available in the district. Her response aligned with that of Tom and Emily:

at my campus, because I'm the only dyslexia person on campus. We do campus training. I hold many professional developments for new teachers have through training, old teachers get a refresher, but the same opportunities that are important to me at a district level, is afforded to the teachers. Can we make them go? No.

But you have these needs in your classroom; you really need to sit through them.

Three of the four of the interventionists responses were in consensus that there were some district opportunities available for teachers, however, they also provided on campus training for general education teachers. Shelia, the fourth interventionist, was clear in her response that general education teachers are afforded opportunities to attend the same professional development sessions as dyslexia interventionists. However, she did not indicate that she also provided on training for general education teachers on campus.

Sheila shared that:

The same trainings that we have, teachers can go to. It's usually under the 504 bracket when we're doing professional developments, but any teacher can go to them. And I encourage teachers to go to them because you never know when you may get a dyslexic student, so you always want to be prepared just in case. So, the same PDs that are offered for us, teachers are always encouraged to go to. I know last year when we had the Dyslexia Module 1 PD, not many teachers showed up; it was mostly special-ed people. It was the dyslexia intervention teachers. But it wasn't a lot of in-class teachers, and I really think it would be great if teachers who are in the class would go because a lot of the things that they do for dyslexic students can service all your students. It can help all your students, not just your dyslexic students, so it would benefit classroom teachers too to go.

While, Shelia believed general education teachers had adequate opportunities available to them, one interventionist did not believe the same thing. The fifth interventionist, Mary, serviced students at the secondary. She thought there were not enough opportunities available. Before responding, she sought clarification from the researcher by asking, “that contribute to the dyslexic program?” to clarify before responding, shared that:

There's some staff development. I think there could be more. Of course, the creation of this position helps a lot. I think that's it. There's not a lot.

The responses from Shelia and Mary differed in their opinions of the opportunities available. While Shelia believed there were enough opportunities provided by the district to support general education teachers, Mary believed there were not enough opportunities made available to teachers that service dyslexic students.

*Local and regional professional development opportunities.* In addition to the opportunities that have been provided by the district, three of the five interventionists also shared that other trainings have been provided outside of the district. Training outside of the district included, online courses, conferences held by other districts in the surrounding area, and sessions offered by the state regional education office.

Three of the five dyslexia intervention teachers provide insight into the out of district training sessions that were shared with them as additional opportunities for professional growth. Emily, an elementary interventionist, shared that there were additional opportunities available, she also shared that a lack of resources made attendance difficult.

A lot of times, she'll [district coordinator] shoot out some different professional developments that we could go to, but of course, we have to pay for them out of pocket, so a lot of them are kind of expensive.

Shelia, one of the elementary interventionists shared several different ways that training is provided to teachers. The opportunities she shared were provided by the district as well as other out of agencies. She said:

District training? And then the coordinator always makes sure that we've done-- what do you call the ones that you do on the computer? The webinars. We've done webinars. Then the state regional department always has the dyslexia conference every year that she encourages us to go to. And then that another district had that RtI thing twice that she encouraged us to go to as well. So, there

are many things that we can do to get support in the district for anything that we need.

Tom, an interventionist at the secondary level, also shared the professional development opportunities he had taken both in and out of the district. He said:

And, through-- some are PDs. And, I have gotten some [professional development] through-- when I hear about them from the district through the County Department of Education. In my school, my campus, I'm the one that provides the information with regards to dyslexia and how it is and how it works.

The other two interventionists did not acknowledge training opportunities outside of the district that were made available to them. Kate and Mary only referred to the district professional development opportunities.

Given the range of responses provided by the dyslexia intervention teachers and the general education teachers regarding the training opportunities that exist, it was clear that the level of training and support varied based on the perspective of the individual that is asked. As with any individual, the willingness to seek out resources and support was contingent upon the individual's intent to learn more.

### **Research Question 6**

Research question six was used to identify the ways professional staff have supported students with dyslexia. The amount of support students received from teachers was contingent on the level of knowledge they have as well, as the amount of training they have received. After collecting data from teachers that pertained to those two areas, the researcher then used the information to identify the support students received. During

the data collection, three themes emerged. The themes were instructional skills and strategies, programming, and social emotional support. The data collected was in alignment with the findings of research question 4. Information collected from research question four found that there was no relationship between what teachers know about dyslexia, and their beliefs about inclusion.

**Instructional Skills and Strategies.** Through the data analysis, instructional skills and strategies merged as a major theme. For all teachers, being able to provide diagnosed students with the proper skills and strategies is an essential component for supporting the academic achievement of students. Although general education and dyslexia interventionists were asked similar questions, the range of responses varied based on their teaching experiences. Given the findings from the interviews, two of the themes, general knowledge and professional development directly impacted by the types of instructional skills and strategies teachers use with students based on their knowledge and the previous training they have received.

*General Education Teachers.* The researcher also asked general education teachers to examine the success of those strategies used with dyslexic students. The general teachers interviewed had backgrounds in different grade levels, so there were a variety of responses. Among the responses three sub themes emerged: Reading comprehension and writing, and clarification, accommodations, and time. Each of which related back to student success.

*Reading Comprehension and writing.* As the general education teachers were interviewed about their instructional skills and strategies, the sub theme reading

comprehension and writing emerged. Many of the responses provided specifically addressed certain skills. Of the general education teachers interviewed, three of the six taught at the elementary level. They focused their responses on instructional strategies that were centered around reading comprehension and writing. Although each teacher worked with different grade levels, they all responded with some of the skills and strategies that centered around reading comprehension. Two of the three elementary teachers also referred to using colored overlays with students while working on reading comprehension skills. Ava taught older elementary students. She responded by sharing some of the instructional strategies that focus on reading with colored overlays and writing strategies.

Also, we've worked with different color papers to see if a color filter will help. It hasn't really shown much of a difference with this child, but in the past, I had a child who read better on blue paper, so I would copy his things on blue paper. So, I give her the unlined journal. That's helped a lot in writing because I teach her writing, mostly. I do let her speak in the iPad and then go back and fix the speech, the text errors so she can turn in a typewritten one. We do - what is it called? - the share-- it's "Snap" something-- Snap & Read for tests.

Grace, a first-year teacher, had a dyslexic student in her class. She also taught upper elementary students. On her background information sheet indicated that she had not received had any formal training on servicing students with dyslexia, however she referred to the research-based strategy of reading with an overlay, she said "In math and reading, she also uses a little yellow paper over any work that she does so that it can help

her when she's reading on her own". While both teachers shared that using colored paper or overlays was a reading strategy that had been successful with their students, the other elementary teacher did not acknowledge their use while working on reading skills.

Sarah, the Kindergarten teacher, shared that she typically did not see diagnosed students at that level, because of developmental concerns; however, she felt as though she had enough background information from her years of experience and training, that would assist her recognizing the signs and characteristics in students:

Well, like I said, in Kindergarten, we don't generally diagnose students with dyslexia, but those students who struggle with comprehension, who struggle with phonics and being able to sound out words, and writing backwards, especially with the letter formation and the writing the words backwards and things, when I catch it, I try to correct it. So, if I catch it immediately, I correct it.

Each elementary teacher focused on reading comprehension as their targeted content area in which they supported students. Their responses provided insight into the teaching skills they have experienced with diagnosed students.

The other three general education teachers interviewed taught at the secondary level. Two of the three teachers mentioned instructional strategies related to reading comprehension or writing, while the third teacher did not address reading as a content or a skill. Their responses were more related to strategies for reading, rather than reading as a fundamental skill. Benjamin, a first-year secondary teacher taught a content that required students to read and take note about their reading, by saying: "Well, what do I do? Well, we take a lot of notes off slides. So, I do that, but I also read." He went on to

compare his dyslexic students struggles with reading to that of the ELL students he services:

My classroom, like everything else in the district is-- I've got a couple of girls in there from El Salvador that don't speak English. And I've got various levels of ELLs in there. And then I've got this individual with the dyslexia thing, and he's also an ELL, so. I try and give everybody time, as much time. I try and give them the information in a verbal fashion too, so.

Benjamin shared a variety of strategies that he uses with both his dyslexic student and the ELL students. Shelly, the secondary teacher diagnosed with dyslexia. She also taught a content that required students to read and comprehend text and said: "I use a variety of ways. Having the computer read to them while they read it, so they hear, and see, and write their notes about it." While her strategies were different from Benjamin's, they still focused on supporting students while reading and writing. The third secondary general education teacher, Darcy, did not address and strategies related to reading comprehension or writing. Rather, she reflected on the struggles her students have, or have had related to the content and shared how she supports their comprehension.

*Clarification, accommodations, and time.* Recognizing that dyslexic students need a lot of support from the teacher, five of the six general education teachers shared instructional practices that are related to the general success of the students in the classroom, rather than a content specific strategy. The skills and accommodations that are used with elementary students differ from those that are used with secondary students, or with students that were diagnosed with dyslexia later in their school years. Two of the



elementary teachers shared some of the strategies and accommodations they have implemented in the classroom to support their students. Ava, an elementary teacher, worked with older elementary students. While explaining the instructional she finds to work best with dyslexic students, and how she meets some of their emotional needs, that also emerged through data analysis, stating:

I've orally administrated tests to her as well because the computer program doesn't always work. And then just whatever, chunking, shortening the written instructions, repeating the instructions, reading things that she needs clarification on, and explaining to her that dyslexia is not a mental disability. It's technically a learning disability, yeah, but it doesn't mean that she is not fully capable of doing things. It just means she must find another way to do it. So, helping her understand that she's not limited cognitively just because she has trouble sometimes getting words to stay still on a page.

Another elementary general education teacher, Grace shared the accommodations she uses in the general education classroom to support diagnosed students:

Well, I know that I need to-- even when I do my whole group, I need to have a one-on-one with her, reread the problems, make sure that she understands and repeats back to me what we just talked about to see if she understood what the concept is. But, basically, I make sure that I always have a one-on-one with her just so that I can be sure that she understands.

Although the third elementary teacher shared some instructional skills and strategies, she did not specifically address strategies related to clarifying, implementing accommodations, or providing time.

The three secondary teachers interviewed all had students that were diagnosed in their primary years. As a result of early identification, the accommodations, clarification, and time needed for support were less for those students in comparison to students that were more recently identified. Most of the students that they had worked with understand their own personal needs and abilities, so the instructional practices were geared toward guiding the students to work independently and be successful in the general education classroom. For secondary students, in addition to struggling with the pace and content, having adequate time to complete the tasks assigned and be successful is a challenge.

Darcy, a middle school teacher shared:

What I have found successful, like with this child, is giving them the time to get there as opposed to pushing on them and making sure that you're not making every student aware that they have issues. And just having them participate as much as possible.

Benjamin, the secondary teacher that compared the needs of his dyslexic student to that of the ELL students he also had in his classroom. Just as he provided accommodations and modifications for those students, he also shared that dyslexic students also need the same types of support in the academic setting by saying, "I try and give everybody time, as much time. I just repeat it, and repeat it, and repeat it." Shelly, a secondary teacher, is

also dyslexic. She shared the practices she used with her students and shared how those same strategies helped her personally:

Like I said, I start the year by letting them know I'm a dyslexic. I'm a successful adult with an 18-page documented disability. If I can do this, you can. It doesn't matter what you're facing. Checking for understanding, multiple ways to present what they know. Maybe this student draws better and can explain it in a picture scenario that's merged with limited words. Sometimes modifying the assignment or the time. Allowing them to come back if they've "failed" something. "Come back. Come see me on tutorial days. Let's go back. Let's see why." Giving them copies of notes that I use or making sure everybody has the PowerPoint.

Each of the secondary teachers recognized that extra time was an accommodation in the general education classroom, that their students needed to be successful.

Five of the six general education teachers shared that providing their students with the necessary accommodations was key for the success of their students. One of the teachers did not address the academic accommodations, but rather shared how accommodating the social emotional needs of students was a strategy used in the general education classroom when working with academic content.

***Dyslexia Intervention Teachers.*** According to the structural document provided by the district to the researcher, the primary role of the dyslexia intervention teacher was to service those students that have been diagnosed. Through the responses of the interview questions, the perception of the role of the dyslexia intervention teacher varied and provided insight into the instructional practices that are used with students they serve.

As the dyslexia interventionists were sharing the perceptions of their role, three sub themes emerged: intervention, RtI, observation, and testing, and advocacy and motivation.

*Intervention.* Intervention services are provided to qualified students, that require additional academic assistance. Four of the five dyslexia interventionists acknowledged that the primary role of their position was to intervene with identified dyslexic students. Emily, an African–American woman, had been in her current position the shortest amount of time, as indicated on her background information sheet. Her perception was to intervene and provide services. She further explained by saying, “My perception of the role is to intervene with students early on to detect any signs or signals of dyslexia as well as to service the kids who are labeled dyslexia”.

Shelia and Kate were both African- American women who had been in the role for several years. While Shelia’s response echoed Emily’s, she elaborated and shared that she perceived her role to be:

I think as the reading specialist at my school, I must make sure that the kids who are dyslexic are being serviced. As the dyslexia specialist, then I’m here to kind of help them to, not read, but to give them strategies to help them to understand what's going on with their dyslexia. Things to help them so that they can read since it's-- more about reading and writing.

Kate also shared the perception she had of the role which she held:

I perceive my role as to be an advocate between the child, the teacher, and the district. I see my role as I'm going to do everything that I can for everyone to

understand how this child is learning, what this child needs in the classroom. And also, be an advocate for the parents. These are the services that's available to you outside the district; this is what we can do. But I see my role as a bridge for the child, the parent, and the district.

Mary and Tom, dyslexia interventionists at the secondary level, serviced students with dyslexia. While sharing their perceptions of intervention, they were not in agreement that the emotional needs of students were also being met. They were each asked to share their perceptions. Mary shared the perceptions they had of their roles, “So, my role is to help my students with their particular deficits and to give those tools and strategies to use so they can be successful”.

While, Mary, acknowledged that her role included providing students with tools and strategies, she did not elaborate on what those tools and strategies were. Tom was asked to answer the same question, saying, “To help my students not just to become better readers, better students academically.” While the focus for each teacher was different, they were in consensus that we should help each dyslexic student help themselves.

*RtI, observation, and testing.* In addition to providing intervention with identified dyslexic students, the dyslexia interventionists also bear the responsibility of leading the campus RtI committee, as well as testing additional students that exhibit signs of dyslexia. Two of the five interventionists also shared that they were responsible for RtI, student observation and testing. Emily and Shelia both addressed these critical areas in their role. Each of the women also worked at elementary campuses. In addition to

intervention, Emily shared that shea also observed and tested. When explaining her role, Emily shared, “I also have the role of testing the kids to determine if they qualify for dyslexia services and then, of course, meeting with my RtI team to decide if those kids are eligible for services”. Shelia also added that student identification was a key component of the role held, saying “I believe that my role is to-- first, I have to make sure that we are making sure that we identify the students on campus who are dyslexic. It's kind of hard to find.” According to information from the document collection, identification is one of the key components of the dyslexia intervention position, however, only two of the five recognized it as being a key element in their role.

*Advocacy and motivation.* Student advocacy and motivation were also seen as key vital components of the dyslexia interventionist position. Three of the dyslexia intervention teachers that serviced students were passionate in their responses that advocating for, and motivating students was part of their overall role. Advocating and motivating students came in addition to the other key roles the dyslexia intervention teachers felt were parts of the role served.

After sharing that she was responsible for intervening with students and testing, Shelia also shared that there was a motivational component to her role saying, “...and so that they know that they can succeed. Because a lot of kids with dyslexia think that, "I can't do this." But if you give them the right strategies, then they can do it”. While she provided a general overview of all the components the position entailed, she did not elaborate on any specific strategies used to support student success. Kate also perceived

her role as being an advocate for her students. She shared her perception of the role by stating:

I perceive my role as to be an advocate between the child, the teacher, and the district. I see my role as I'm going to do everything that I can for everyone to understand how this child is learning, what this child needs in the classroom. And also, be an advocate for the parents. These are the services that are available to you outside the district; this is what we can do. But I see my role as a bridge for the child, the parent, and the district.

Tom was the only secondary interventionist that had a dyslexic diagnosis. When addressing his perception of the dyslexia intervention role, he shared ways in which he motivated his students as they practiced the skills and strategies he taught them. He shared that he helped his students become better, but then he continued by sharing:

...but just to become better persons. To let them know not to give up because-- and I do use myself as an example many times, letting them know what I'm going to show you has worked for me and I still practice it. Maybe not all the strategies that we may practice here at school may work for you, but some of them will. The only thing that I do tell them in my role is, I want you to never give up. Once you give up because you think you cannot do it, you cannot read, or you cannot pass a specific class or test, then that's it. But just basically to be there for support and to show them that it can be done, regardless of how bad their dyslexia is.

Not only did he not base his perceptions of role on the job he does servicing students, but also on personal experience with the needs of a dyslexic.

As with the knowledge of dyslexia, and the varied training backgrounds, the instructional practices were also very different. With dyslexia ranging on a spectrum from mild to severe, the tools needed for a student to be successful also ranged.

**Programming.** The district examined in the study had a department that was specifically set up to address RtI and dyslexia. When established, the intent of the department was to set up a group of teachers from each campus that would be trained at the district level, and then would return to their home campuses to train, provide information, and support teachers in the general education classrooms. Both groups of teachers were interviewed about their knowledge and perceptions of the program, roles, and functions. During an analysis of the responses of both groups, several sub themes emerged. The sub themes were knowledge of campus support and personnel, monitoring student accommodations and progress, academic content support, and program structure.

***General Education Teachers.*** Dyslexic students were in inclusive general education classrooms. Although, the students were serviced in the mainstream classroom, they still received intervention and support by the designated dyslexia intervention teacher. General education teachers were responsible for their student's overall success; however, they also received assistance in supporting the needs of identified dyslexic students.

***Knowledge of campus support and personnel.*** According to the information from the document collection, the structure of the department allows for each campus to have a



designated dyslexia intervention teacher. Knowing who to go to for support is essential in ensuring that the students diagnosed with dyslexia are being serviced. Each general education teacher was asked if they knew who they could go to for support of their students that had been diagnosed.

All six of the general education acknowledged their campus had a program, however when asked if they knew who to go to, only five could definitively say who they would contact for assistance. In addition to knowing who to seek out for assistance, the general education teachers were unsure as to what assistance they would receive from the designated support staff.

Two of the six general education teachers acknowledged having a campus program, but were unsure about who intervened, or what services were provided. Sarah, a kindergarten teacher responded that her campus did have a program.

Sarah, a kindergarten teacher responded that her campus did have a program, however, when asked to describe it, she said:

No. I don't know very much about it, but I do know that our dyslexic students are serviced. I don't know who it is because we really don't deal with it a lot in kindergarten.

While sharing that she did not know much about campus services, due to the grade level she served, Sarah's response was echoed by another elementary general education teacher. Ava said that her campus also had a program. When asked to describe the program, Ava said:

As far as I know, we have a dyslexia teacher, who services the kids. She works with them in 30-minute groups, sometimes longer. I'm not sure about that. I know that she teaches them strategies to help them cope with it. And she's always checking in on our dyslexic students and making sure that they're getting all their accommodations.

While Sarah and Grace could share that there was a campus-based program, other general education teachers struggled to identify the specific program.

Grace, a first-year teacher, indicated that her campus did have a program for dyslexia, however there was some misunderstanding of the umbrella on which it felt.

When describing the program, she said:

Well, from what I've learned, this year, we have what we call the RTI, I believe, where if you see these symptoms in the classroom and they are affecting the students-- if it's affecting them academically, you can refer them to the RTI program, and they can help them, possibly, by having someone come into the classroom, reading to the student, helping them to code words or even with other content areas.

Each teacher that shared recognized there was a program, however could not fully elaborate on the services that were directly provided.

Benjamin, Darcy, and Shelly, the other three dyslexia intervention teachers, all worked with secondary students. They were also asked to share whether their respective campuses had a dyslexia program, and to describe the program. Benjamin, a first-year teacher said:

I think they do, but I haven't been involved with it much. I have one student in my seventh period where he had to go and deal with a lady. I can't remember what the program name or whatever is at school, but he's had to go and visit with her a couple of times and get tutoring and get regards to reading, so.

Although Benjamin knew his student received services, he was unable to share much detail about those services. This would be the same for the other two secondary teachers as well. Darcy, a teacher with more than five years of experience on her campus shared, "I believe it's the 504 programs. That's the umbrella they're under."

Shelly also worked at the secondary level. She had experienced working with diagnosed dyslexic students on her campus. When asked if her campus had a dyslexia program, she indicated that her campus did have program. When asked to describe the program, she said, "No. I cannot. I apologize. No. I do know that some of my students get pulled out to go and be worked on one on one."

Although, each of the general education teachers interviewed shared that their campuses had a program that was designated to specifically address the needs of dyslexic students, none of them could give a definite description of the program, or identify the individual, by name, responsible for implementing the program. Based on the responses, the researcher also asked the dyslexia intervention teachers about the programs they are responsible for implementing.

*Monitoring student accommodations and progress.* Each year teachers get new students that have a variety of needs. For those students to be serviced properly, teachers must have accurate information to support the students. In the previous sub theme, all the

general education teachers were able to acknowledge that their campus had a program designated to support dyslexic students. However, there was also an uncertainty among the teachers about who the person was, and the actual program itself. Two of the six general education teachers, did however, recognize that the person responsible was also the one who provided them with the accommodation information for their dyslexic students.

Although dyslexia does not fall under the Special Education umbrella, students identified do receive academic accommodations under the 504 umbrella. Ava and Darcy both said that they received and implemented the accommodations of their students. Ava said, “We also get accommodation sheets or dyslexic students. And we as teachers make sure that we implement whatever accommodations have been put forth.” Darcy also said, “We get a copy of their services, what I, as a teacher, am expected to help the child with, the student.” Just as with special education students, dyslexic students have accommodations that must be followed with fidelity by the general education teacher. Having an awareness of those accommodations is key.

In addition to monitoring to ensure that student accommodations are being implemented, teachers also must monitor the overall academic progress of their students. Each general education teacher was asked to share their perceptions on the person responsible for monitoring student progress, and the data that should be collected that would indicate progress is being made for each student. Grace, the first-year teacher said:

Well, I feel like, in part, I am responsible for it because I know that she is a-- my student is a dyslexic student, so I need to make sure that she is getting the support

that she needs, but I think that also the RtI department should also track the student's progress.

The researcher asked the teacher to elaborate on the data that is collected to ensure student progress is met. Grace continued her response to the question by saying:

I'm not sure. I'm guessing that we also must look at the data and see if she is growing in the content areas. And if she's not, we need to see if it's because she's not getting the support that she needs.

Ava, a teacher with more experience than Grace shared that the teacher is responsible for monitoring progress. She said:

It's the teacher, plus I know that the dyslexia interventionist is my 504 dyslexia person. In the past, I want to say – no, I think that was a different kind of 504. I was going to say the counselor, but she does a different 504.

The conversation continued with the researcher asking for the teacher to share the information that is collected to determine if progress is being made. She shared:

As a teacher, I check off and make sure that I've done it on her accommodation sheet that I'm providing her with that. So that's kind of like a thing that I do when I give her assignments. I make sure that I'm that I'm doing that. Like I said, the dyslexia intervention teacher comes in and checks on the child. She'll check in, see how she's doing, and see if she needs some extra encouragement or extra accommodation. I'm not sure what happens on the dyslexia interventionist's end of it, like what the dyslexia interventionist does to any further evaluation of her. I do know she works with her, and I'm sure that there are things that she does.

Sarah, the elementary teacher with the most experience shared that the dyslexia intervention teacher is the person responsible for monitoring the progress of dyslexic students. When asked about the information is collected to determine if progress has been made, she said:

Their grades, I guess, their I Station progress monitors. Maybe what they're doing in intervention (data). If they're in intervention groups, which they probably are. Progress notes report cards. Maybe some information from parents. And of course, teachers—well, their teacher as well.

All three of the elementary general education teachers knew of the person who as responsible, however, they were unclear as to the specifics of the role the person held. The three secondary general education teachers were asked the same questions as well. When Darcy was asked who is responsible for monitoring the progress of students, she said:

For myself, it would be me academically, just making sure their grades are where they're supposed to be, their assignments. Outside of me, I have no idea other than counselors. I think the counselor's the one that gave me the paper.

The researcher continued by also asking her to share the information that is used to determine whether or not the student's specialized needs are being met. She responded by saying, "I don't think I have anything to track him. Something set in stone, like this is how I'm supposed to check on him? I don't have anything."

Shelly, the secondary teacher diagnosed with dyslexia, shared that the dyslexia interventionist on her campus was responsible for monitoring the progress of students.

She also felt as though teachers were responsible for monitoring the progress as well. She said, “But teachers also. I mean, come on. We’re in the classroom with them.” When asked the information that is collected to ensure that students are making progress, she said:

Usually, we have an IEP that we follow. They must go through testing. There's official testing. Parents can also take them outside to test, etc. And usually, based on what their needs are, we have an IEP that we follow. Extra time, assistive technology, the things that'll read to them sometimes is needed. Some of them can use a spell machine or-- we use a lot of computers in my room, so the spelling is not as bad for them in here.

The researcher questioned Shelly’s response about the IEP. Further questioning was needed, because, typically IEP’s are used with Special Education students that have been identified with different learning disabilities. Upon further questioning, it was found that dyslexic students do not have specific IEP’s, however, they do fall under the 504 umbrella which allows for them to have academic accommodations. The researcher made sure to clarify the terminology used.

Benjamin, the first year, secondary teacher, was unsure about who was responsible for monitoring the progress of dyslexic students. When asked, he responded by saying:

That's a good one. I would say that there's got to be a-- I guess a special need or I don't know if it falls under their deal, or if there's a special, not special-- another organization within the school district that would track these students or not. I

would say that there should be another sub-organization within the school district that helps these students succeeds so.

Following the response provided, the researcher asked Benjamin to share more details about the information that should be collected. His response was “I do not. I don't know what kind of testing they give them. I got no clue.”

Based on the responses from the general education teachers, the researcher was able to determine the knowledge of dyslexia directly impacted the structures and programming that had been established. The researcher also noted, the not having general knowledge also hindered the general education teachers’ knowledge and understanding of key terminology used when discussing dyslexia as a learning disability.

***Dyslexia Intervention Teachers.*** The dyslexia intervention teachers were asked to describe the dyslexia program at their campus. As previously stated, the district allowed the structure of the campus programs to be structured according to the needs of the campus. This allowed the dyslexia interventionists to provide insight into the overall program of the district. Through the responses of each interventionist, they address the academic content support and individual campus program structures.

***Academic content support.*** When describing their role on campus, three of the five dyslexia interventionists referred to their role by providing academic content support. When asked to describe the dyslexia program at her campus, Shelia stated:

Basically, for the students who are dyslexic, I must see them. I try to see them five days a week for at least 30 minutes. We work on the strategies. We work on everything. We work on phonics, we work on their comprehension, and we work



on fluency. A lot of them, we must work on their writing, not just paragraph writing but handwriting. Because, I mean, I have three whose handwriting, it's kind of bad, so we must work on all those things to better the kiddos. But as far as having a dyslexia program, you must make sure that you're working on all your reading-- I can't think of what you call them, but your components of reading with the kids.

In addition to Shelia sharing the structure of the program on her campus, Mary and Tom both shared their program structures as well. Each had programs at the secondary levels. Both of them were also asked to share the structure of the programs, which they served. Mary indicated, in her response, that she serviced multiple secondary campuses. Tom worked at the secondary level; however, he was housed at one campus. He shared the he was the initial implementer of the program on his campus. Tom said, "From the beginning, how we-- well, it depends. Since I do teach fifth and sixth grade, many of the students that I work with do come already diagnosed with dyslexia."

During her response, Mary did not describe the structure of the program. She did share instructional strategies that she taught the students she serviced. She shared:

Okay. So, I pretty much use the same-- I do the same thing at both campuses. So, we, of course, work on vocabulary. I do a lot of work with prefix and suffix at the middle school level because they are introduced to a lot of academic-specific vocabulary. So, if they know prefixes and suffixes it could help them when they are trying to retain information. For example, they know that geo means earth or land. Then when they see the word geography or geographical, that's a large

word, but if they remember, "Wait, G-E-O means earth, so this has something to do with land," or-- then they're able to figure out, okay, now I can keep going in my reading instead of seeing this large word and getting stuck. We work on writing because writing is an issue with some of them. We work on refreshing their basic phonemic awareness, just basic sounds. And not all of them need that, some do, some don't. And we work on-- I do a lot of work with them with flashcards and teaching them how to study words, especially my seventh graders. So, it's a combination of things that I do with them.

Both Mary and Shelia went into the depth about the structure of their program, and the instructional practices they used, while Tom provided little information to support his role as it relates to the campus program.

*Program structure.* While three of the dyslexia interventionist addressed academic content support, two of the five dyslexia interventionists primarily focused on the program structures they had in place. While sharing the program structures, they were also able to relate their responses back to RTI, observation, and testing that was previously addressed in the instructional skills and strategies theme.

Emily worked with elementary aged students. She was also the interventionists with the least amount of experience in the role. When asked about the dyslexic program on her campus, she shared that:

Well, the dyslexia program at my campus is kind of weak. I would say that because-- I would say most of the teachers on our campus are not aware of dyslexia, or when they have a child that has reading difficulties, dyslexia are not

something that they consider could be wrong with the child. But with the knowledge that I've gained in the three years that I've been in my position, I'm able to kind of ask different questions to them to determine if dyslexia are a route that we could take or consider for a child.

While Emily shared her personal thoughts and feelings about the program in her response, she was able to articulate some of the responsibilities of her role. Kate, an African- American woman, indicated that she had been in her current role for several years. During the interview she also said that she started the program on her campus.

When she asked to describe her program, Kate shared:

At my campus we usually go through the RTI. It happens when the kids that would-- to identify a student with dyslexia, it needs to be a parent concern, a teacher concern, and a campus concern. I've even had custodians and the nurse say, "You might want to look at this child. I picked up this paper. I can't read anything, and this was in a fourth-grade classroom." So, what we do, we stack the student. I gather as much background as I can. They go through a series of pre-dyslexia screening. I must look at their previous school background, get some information from the parents; it's running in the family, is it in any of the siblings. It's a process. Even before I test, it's about a three-week process because I don't want to rush and give anyone a label that's not necessary. So, it's that, gathering data, interviewing the child, interviewing the parents, background, school history, family history, and then we'll test for dyslexia.

Kate went into detail about the program at her campus, as well as provided some minor details about how she identifies students. Just as Kate, Tom did address the academic content support, much of his response focused on his campus program structure.

Following is comment about support, he said:

But the one that are referred to me, what I do first, I do a quick informal assessment, which means if there's a student in question, I will ask the teacher to send them over to me and I have them write something quick. I'll read something to the student and see if they can comprehend. I'll ask them a few questions or have them write. And depends if the student is a second language learner because that must do a lot whether we are misinterpreting the fact that he or she has dyslexia and if that's a language issue. So that's another thing that we must look at. So, when they're sent to me and I do the prior formal-- I'm sorry, informal assessment, I consider all languages that are being displayed from the student. And if possible. I do informal assessments on-- for example, I speak Spanish also, so I do them in both. And I could get a sense of it's more of a language issue than a truly disability. And then I proceed to do, if I think there's enough evidence for me to do the formal assessments, then I go ahead and do that. And I contact the parents and do everything that has to be done.

Tom was able to give a great deal of insight into the structure and practices of the program on his campus.

According to the district department, each campus has the autonomy to structure their own programs, based on the needs of the campus. However, key components must

be incorporated. Those components are servicing identified students, testing for identification, and Tier III RtI implementation. When asked to describe the dyslexia program at your school, the responses were inconsistent, but aligned to the teachers' perception of the role, and their definition of dyslexia. This finding is consistent with the data that show there is no significant difference between teachers' dyslexia beliefs. The perceptions and beliefs of the dyslexia intervention teachers determine the structure of the program that they have set up for their campus, which may or may not be aligned to the overall goal and vision set forth by the district department.

*Monitoring student accommodations and progress.* After identifying the structure of the campus programs, each interventionist was asked to describe how they monitor the progress of students with dyslexia that they are responsible for servicing. The researcher also asked each interventionist to share how they know the students are getting all their specialized needs met. All five of the interventionists identified their methods for assessment, and data used to monitor the progress of the students they service.

The two secondary interventionists shared their methods of monitoring the progress of students was very similar in approach. When sharing his methods, Tom said:

We use I station, for example, is one. We use report card data. We use common assessment data and informal data. Just listening to them read, providing to them specific readings that I want them to do and ask some questions. But yes, basically that and keeping close contact with the teachers about whether there's growth or no growth with regards to their academics.

Mary provided insight into what she uses to monitor the progress of the students that are serviced by her. She stated:

Oh, their progress. So, I monitor their progress by grades via the activities that we do. I try to select the activities that increase with rigor so that I know they are mastering the tools and techniques that I'm giving them. I ensure that their instructors are following their 504 learning plans. I avail myself to their teachers. I always check in on my students via email. I stop by their classrooms to make sure that they're doing okay. I have a running sheet where I keep up with their grades, their progress report grades, and their report card grades, as well as attendance and referrals. So that was just something I created though to make sure they are progressing.

Both secondary interventionists shared information about monitoring the students' grades and staying close contact with general education teachers. They also shared that students are monitored through the activities that they do while servicing students.

The three elementary dyslexia interventionists also answered the same question. Their responses included data from assessments, grades, and research-based programs.

Kate, interventionist with the most amount of experience shared:

I monitor my students. Every three weeks, I meet with the teachers formally or informally. And I also have a progress report. I give their progress reports. I meet with their teachers, doing testing. I'm the one testing my students because I want to make sure they get all their accommodations. And I give my students a choice is now doing. And the little girl I talked about earlier, she doesn't enjoy the

computer. So, she's one with DCAs and CCAs, I'm sitting right there. But she must wait until I finish with these students. But every three-week, progress reports, talking to the teachers. I am connected to their grade books. I need to see when we have a test. How did you do her accommodations? What did you do for her? So, I'm always there. Tomorrow, I will not be at work, but I left instructions, "This one needs this on her test. She needs this." I even copied it and it, "This is what she needs. This is what they need." So, I'm pretty on it with-- And I have seven kids, so it's not very difficult. I have seven kids.

Emily had the least amount of experience in the role. When asked about progress monitoring, she stated:

Well, we use the Read Well program, so that is a way that we service the students. As far as monitoring if their needs are being met, that's kind of difficult because we don't really have a progress monitoring or assessment that we could use, other than spelling inventory and campus and district tests. But that does not necessarily measure if a child's individual needs are being met. So, I would have to say that there's really nothing solid in place to determine if the kids' needs are being met, which is something that we really need to reconsider. There's nothing, overall, universal because one campus may be using this tool. Campus B may be using another one. But I honestly believe that we must be something universal, something that's not made up, something that everybody can use to determine if needs are being met.

While she did provide some insight, Emily did not completely answer the question about how student accommodations and progress are monitored. Shelia, an elementary dyslexia interventionist, had fewer years than Kate, but more experience than Emily. When asked about monitoring accommodations and progress, she stated:

Well, I will give them fluency tests every few weeks. I do comprehension tests every few weeks as well, and I just kind of write them down in my little notebooks. And even here, we started a new fluency chart where they are going to do their fluency every few days. Like the older kids, I'm giving them phrases, so they're going to write down, and, hopefully, they're going to try to beat their score every day. So, I give them the progress monitoring. And every few weeks, just to see, if they're not doing well, then we must work on whatever it is they're struggling with. And there was something else you said. If they're struggling with something, then we must continue working on it, or I must change up what I'm doing because not everything works with each kid. It might work with one /but maybe not with the other.

She was able to provide more insight into the methods that she used to monitor student progress.

The responses to questions asked about programming indicated a difference in what is understood about support between general education and dyslexia intervention teachers. The inconsistencies in the responses also lead to differences in the knowledge of what information is used to monitor the progress of the dyslexic students. Two of the six teachers agreed with not knowing or having anything in place that would track student



progress. Four of the teachers responded by stating that data would be collected.

However, the data collected varied among the teachers.

**Social and Emotional Support.** There is a significant amount of research that relates to the social and emotional support that dyslexic students need in the general education setting. As the study was conducted the researcher asked both general education teachers and dyslexia interventionists to share what they thought some of the challenges were that students faced. As they responded, on the major themes to emerge from their answers was the social and emotional support of students. Three sub themes arose from the data. They were: academic success of students in the classroom, teacher misconceptions and support, and self-confidence.

*General Education Teachers.* In the general education setting, the teachers see first-hand how dyslexia affects the students. When asked about the challenges the students face, most of the teachers agreed when identifying the difficulties students face.

*Academic challenges in the classroom.* Further analysis of the data revealed subthemes. One to the subthemes that emerged from the general education teachers was the academic challenges of dyslexic students in the classroom. Five of the six of the general education teachers agreed that one of the challenges that students face in the classroom is centered around academics, no matter the grade level of students. Ava shared that she has had the opportunity to work with several students that have been diagnosed:

So, we put a lot of emphasis in the educational setting on success on the standardized tests. And kids with dyslexia are not always set up for success in a

situation where we standardize tests. Additionally, sometimes you struggle to get people to see that there might be new things to try, like color filters, like color glasses. Those are things that people, like, "Oh, I don't know about that. That's not on the accommodation sheet, so I don't know about that," just thinking outside the box sometimes because it doesn't look the same on every person.

Ava also recognized that students struggle as a result of those responsible for putting accommodations in place, not having the knowledge of what may help a student be successful. While Ava had a number of years in the classroom, Grace, a first-year teacher, also had a student diagnosed with dyslexia in her class. She felt that the level of confidence students had with the content contributed to the overall academic challenges students faced in the classroom:

Well, if they don't have the support that they need, they are going to struggle, and they might be discouraged to even try in any academic work. If they are supported, then I feel that they will feel like they can achieve the same success as other students.

Sarah had more than fifteen years working with elementary students. She had never had a diagnosed student in her class. Because of the grade she serves, she shared that her students aren't diagnosed until they are in higher grade levels. However, knowing her former students had been diagnosed, she shared the struggles observed prior to diagnosis:

Probably keeping up with the pace. Because the pace of education is moving. We must keep it moving. I can just imagine if they're struggling, and they need more instruction in a certain area but we're moving on, yeah, that can be hard, yeah.

Darcy had been in education for more than five years, working with secondary students. While identifying the challenges, she said “Making sure they're acquiring what they need to know, to teach that. I'm trying to teach.” Shelly gave a response that combined her teaching experiences with her personal experiences, when asked to share her thoughts on the academic success of students in the classroom:

And then you give them the assignment or the test, and no. And it's not that they don't want to do it. They're afraid. We try not to lose anyone, at least figure out what's going on. But overall, throughout being a parent and student and teaching for 10 years, that's what I've seen.

Each of the teachers were able to see the challenges in different academic content areas the struggles student were having. By working with the students on a consistent basis, teachers were also able to identify specific areas of concern. All of the teachers shared their concern for students being able to grasp the concepts that were being taught in the classroom.

*Teacher misconceptions and support.* Another sub theme that emerged from the data were the common misconceptions of dyslexia that teachers have, and how those misconceptions impact the support provided to students. The data previously reflected that general education teachers were associating dyslexia with myths and misconceptions. With four of the six general education teachers sharing their perceptions were related to the common misconceptions, there was an alignment to their definitions of dyslexia as a learning disability. When sharing her perceptions, Ava initially discussed the academic success of students in the classroom. She continued by sharing:

And so, it's hard, I think, for people who don't have a lot of experience with it to realize that there are different ways that it shows up and that it's usually dyslexic kids that tend to be twice-blessed kids. And so sometimes, they're super smart and gifted, but they're dyslexic. And so, people tend to not look at dyslexia. They just look at like, "Oh, this child's lazy," or "Oh, this child doesn't work." It's still hard. I think that's the biggest thing is that people expect it to look the same in every student like, "Oh, it's a b-d reversal." Yeah.

While Ava shared a great deal, the other three general education teachers only provided a little insight into how misconceptions have a role with the support students receive.

Grace, the first-year student that shared her perceptions about student academic success, completed her statement by saying, "I think that could be done more if these kids had the confidence in themselves as opposed to, "I know there's something wrong." Darcy was also in agreement stating, "But if they don't, then they are going to shut down and be discouraged to even try. They might just give."

Shelly, one of the secondary general education teachers shared:

One of the things that I notice is that a teacher making a student as lazy, disruptive, and in reality, they're lost because they are so smart. And if you have that verbal conversation with them, yeah, they'll blow you away.

All three teachers shared that students just give up and not try to move forward.

Identifying students as just giving up is one of the most common misconceptions. There is a relation between general knowledge and perceived student challenges.

*Self-confidence of students.* The confidence of any student in the classroom is critical to academic success. When asked about the perceived challenges, Benjamin was the only general education teacher that only addressed student self-confidence as the sole reason they face challenges in the classroom. He had diagnosed students in his classes.

He said:

Well, I think a lot of it is, once again a layman's point of view here, but I think a lot of it would be self-confidence, that, "Hey, this isn't an insurmountable task." Or you know what I mean? I think it's the confidence that, "Hey, I can do this. I might have this challenge to overcome, but it is beatable." But you just got to realize it's there and ask for help and attack it diligently. So, I think a lot of the problem is they give up, and then they're complacent, and then they don't want to learn. Or they've been defeated by this before, and, "To heck with it, why even try? What's it going to get me? Why am I learning this?" So, I think that would be one of them.

Even as a first-year teacher, he was able to recognize that self-confidence played a role in student success.

All six of the general education teachers interviewed were able to share the frustration their students endured while in the general education setting. Each of the teachers was able to recognize and identify specific struggles their students faced. All of the teachers' responses showed a vested interest in ensuring that their students did not suffer from a lack of emotional support while in their classrooms.

*Dyslexia Intervention Teachers.* The dyslexia interventionists that serviced the diagnosed students had a more intimate connection. They typically worked with students in a one-on-one setting. Each of the them were also asked about the perceived challenges that students face in the academic setting. They also shared how social emotional support contributes to the academic success of students in the classrooms.

*Academic challenges of students in the classroom.* As with the general education teachers, three of the five the dyslexia interventionists also agreed that the academic success of students in the classroom was a challenge. Kate, an elementary interventionist shared her perceptions of the challenges that students face in the academic setting:

I think the problem comes in with the teachers. So once the teacher finds out that this child has a "disability." That child is-- "oh, that's Miss...student. She'll get it when she comes." Or, "This and go then and wait for Miss... Go on a computer." So, they don't get as much academics as they can with their non-disabled peers. But I think a lot of it falls on the teacher. Walking the room, they sit in the corner. And I'm like, "How many times have they been in small group? You're supposed to pull them every day. Well, you pull them every day. But you have to pull them too." So, I think their biggest flaws lies with their instructional accommodations from the teachers. And sometimes I just think the teachers, it's not a matter of will, it's a matter of skill. They just don't know. "But that's your job." "Well, you know what you're doing." It's a matter of skill not will.

Mary, who worked with secondary students, shared:

The first challenge is if they're not detected early enough, then they go through their primary years, which we all know are key in developing reading skills. They go through those years without the support that they need. And as a result, they lack self-confidence, they develop a disdain for reading, which can affect their self-esteem as well. Secondary, that's all the time that we see them. And so, their classroom teacher is with them longer. So, I don't think teachers understand how they can support those students. And it's just simple things that they can do, putting up more pictures or developing pictures with vocabulary instead of just giving them vocabulary words. Even just give them a space on the page or whatever so that they can draw a picture that connects with them, so to help them remember what that word is. And that can be-- I mean, and that's a tool for any student. Some students are visual learners, so they have to make a connection between the words. So, I just don't think teachers understand, one, what it is, and, two, how they can support those students.

Both teachers recognized that the pace of the academics taught, and the support needed for students to keep up was not consistently present.

Shelia, another elementary interventionist also recognized that another challenge students face is the accelerated pacing of academic content was a factor . She worked with students at the elementary level. She had been in the position for three years. Based on her interactions, she shared that:

... a lot of times, things are moving so quickly in the classroom, a lot of times they're slower. They're working slower. And I think sometimes in class things are

just moving so fast, they can't keep up. I know for a fact that a couple of them struggle with copying things off the board. So, if their teacher is writing notes quickly, and they might have to erase it or something, and so they have to hurry up and write it, they struggle with copying on the board. But I really think a lot of times the classroom setting is moving too quickly for some of them, so they just shut down or don't write anything down. Or wait till they come to me.

In addition to sharing perceived challenges in the classroom, the interventionists also shared their challenge perceptions, as they related to common misconceptions.

*Teacher misconceptions and support.* Another challenge that was revealed through the data, was how misconceptions influence the support provided to students by the dyslexia interventionists. Two of the five interventionists intertwined their perceived challenge of academic success with common misconceptions and support. In addition to addressing the academic support students receive based on the impact of the misconceptions, one interventionist also addressed the support of the students' self-confidence. One of the dyslexia interventionist with those misconceptions was Mary. In sharing her views on the social emotional support of students, she said:

I also think that not enough teachers know what dyslexia is and understand how they can support those students in the classroom. Sometimes I think they feel as if that's my job to support those students, but I only see them once a week for 30 minutes.

Tom worked at the secondary level. He had been diagnosed with dyslexia himself by sharing:



Going back, teachers. Very much. I mean, you have the teachers that are extremely patient. They know they have to follow the accommodation accordingly. And not only have that, but just to know that they would not be able to do a 20-word spelling tested. Especially when you give them words that just-- I would not even be able to do that. Then you have the teachers that are very accommodating and understanding that will give them-- that will have my students actually choose 10 words and for them to practice those specific 10 words, if that's too much. Now, you've got tests-- if they're giving them a test of 10 words, then they'll reduce it, not making it easier but just things that they can actually handle. The kid that I spoke to you about right now, she's with a very understanding teacher that knows what dyslexia is. So, with her, I mean, her accommodations are outstanding. But then you have the other teachers that, "No, he's just lazy. He needs to do the work." And it doesn't matter how much I tell them you cannot give him this packet because that's not going to happen. He's not going to read those 20 pages in one night, especially when the print is too small. And so, again, teachers.

Although one of the prevalent misconceptions is that dyslexic students are as academically capable as their peers. Both teachers addressed the level of support students receive, and Tom continued by addressing the misconception that dyslexic students are just as academically capable as their peers.

Only one of the five interventionists addressed the self-confidence of students as a challenge in the classroom. Emily, an elementary interventionist, with the least amount of experience working with dyslexic students shared:

I would more so say the challenges that they have really want to fit in and be like their peers. And I'm referencing the student that you asked me about earlier. She knows she has issues. And when I go in and work with her and I service her, I can see the lack of confidence when she's with a group as opposed to when it's just me and her. She tries very hard. But seeing her end result for her is really discouraging because it's like, "Can you read this to me?" And then when she looks at it, the look on her face is like, "I can't read it to you either." So, I really believe it's more so, I would say, with the student, would be socially. Socially fitting in, if that makes sense.

She was able to recognize the struggles that emotionally effect students. Those struggles align with the misconception that dyslexic students are lazy.

Both general education teachers and dyslexia interventionists recognize the need to address the social emotional concerns of the students they service. Just as dyslexia has a wide range of areas to identify, the needs are just as great.

### **Conclusion**

In summary, this study was conducted to examine the perceptions of general education and special education teachers as it relates to dyslexia. The results of this study identified five major themes through the data analysis. The themes addressed in the

findings of this study were general knowledge, training, instructional practices, programming, and social emotional support.

## CHAPTER V

### SUMMARY, IMPLICATIONS, AND CONCLUSIONS

This chapter presents a summary of the findings for each question that guided this study. A discussion on the implications for theory, future research, and practice follows the summary of the findings.

#### **Summary of the Findings**

The purpose of this study was to identify the perceptions of dyslexia of general education and special education teachers. In addition to the identifying the perceptions, the beliefs of inclusion held by both general and special education teachers within a public-school setting were identified. Once the perceptions and beliefs have been identified, the implications as to how those perceptions and beliefs affect the identification of students will be addressed. There is an abundance of existing literature discussed recognizing dyslexia as a learning disability. A learning disability is a neurological condition that interferes with an individual's ability to store, process, or produce information (Learning Disabilities Association of America, 2015). Significant numbers of students with dyslexia go undiagnosed and their symptoms unaddressed, with tragic results, due largely to global lack of awareness and knowledge about this common learning difference (Dyslexia International, 2014). Additional research identifies barriers that teachers encounter. Dyslexia has always been associated with many myth and misconceptions that concern the characteristics associated with the disability (Hudson, High, & Al Otaiba, 2007; Gray, 2008; Washburn, Joshi, & Binks-Cantrell, 2011). Identification is also hindered by misguided beliefs and attitudes that can prevent teachers

from taking steps towards a dyslexia diagnosis. With the appropriate and timely interventions, such as those provided during the Response to Intervention process, students with reading disabilities can be taught strategies for using their brains more effectively (Learning Disabilities Association of America, 2017). This was a mixed-methods study that collected and analyzed data in two phases. The first phase was the quantitative data collection and analysis. The following research questions guided this study:

- R1: What percentage of students receive services for dyslexia?
- R2: Are general education teachers' perceptions about students with special needs in the inclusive classroom different than special education teachers?
- R3: Are general education teachers' perceptions about inclusion of students with disabilities in the general education inclusive classroom different than special education teachers?
- R4: What is the relationship of teachers' knowledge of dyslexia and their beliefs about inclusion of students with dyslexia?
- R5: In what ways, if any has professional staff supported students with dyslexia?
- R6: What training have teachers been given regarding dyslexia and regarding the inclusion of students with dyslexia?

A survey was sent out to all teachers at all K-12 campuses. Data collected from the survey was uploaded into SPSS. An Independent Samples T-test was conducted to answer research questions two and three. The quantitative data showed that there were no significant differences between general education and special education teachers'

knowledge of dyslexia and that there were significant differences between general education and special education teachers' perceptions of inclusion. The quantitative data for research question four was analyzed using a Pearson's correlation to determine if there was a significant relationship between what teachers know about dyslexia and their feelings about inclusion of students with dyslexia or other disabilities. It was determined that there was no significant relationship.

In the second phase of the study research questions four through six were addressed. The researcher employed qualitative measures in the form of face-to-face interviews with general education teachers and dyslexia intervention teachers. The second phase also identified the support teachers receive which allows them to service identified students. Also addressed in phase two were the professional development opportunities for teachers and dyslexia intervention teachers. Chapter 4 provided a detailed summary of the quantitative and qualitative data. In the next three sections of this chapter, a summary of the findings will be presented as they related to each of the six research questions.

### **Research Question 1**

The data in this research identified the percentage of students that are identified and receive services for dyslexia. To determine the total percentage, archival data was collected from the school district, and then compared to the total number of students served by the district in pre-kindergarten through twelfth grade. The total number of students in the district used in this study is approximately 46,000 registered students in grades pre-kindergarten through twelfth grade. Of those approximately 950 students have

been identified as dyslexic. The percentage of students that receive services for dyslexia is 2.1% of the total district population. This is significantly less than the statistical data that shows one in five students, or approximately 15% to 20%, of the population has a language-based learning disability (Moats and Dakin, 2008).

Based on the previous research, the findings would suggest that the number of students that have been identified and are receiving services is remarkably low because of the knowledge of dyslexia as a learning disability. This is directly related to research that says dyslexia is a learning disability with much controversy and many questions surrounding its definition, identification procedures, and educational implications (Zambo, 2004). These findings are also directly related to the interview responses in research question five, that identify the inconsistencies within the district with as they relate to knowledge of dyslexia as a learning disability, and the identification procedures. This is a problem because teachers are often overwhelmed by their other responsibilities and underprepared to recognize the symptoms of dyslexia (Whaley, 2014). Adding to this, it is now under the purview of general education teachers to refer students to RTI, and if teachers are not understanding and noticing the indicators of a disability, more students will miss out on early intervention.

## **Research Question 2**

Quantitative data collected through the survey analyzed 30 questions included in the survey. The questions asked about teachers' beliefs about dyslexia as a learning disability. All teachers, general education and special education, were included in the survey data, which was disaggregated based on the position held. Data from the survey

found that there was no significant difference between the knowledge about dyslexia between general education and special education teachers. This shows that dyslexia is misunderstood by all teachers. The confusion around dyslexia often begins with the contradictory terminology used to describe it, assess it, and understand it (Currie & Wadlington, 2000; Kerr, 1998; Wadlington & Wadlington, 2005). Analyzed data helped provide insight that teachers need to have more training to truly understand dyslexia as a learning disability, rather than rely on the misconceptions that are generally followed. There is research that has been scientifically evaluated and documented, to aid in the understanding of dyslexia (A, 2015).

Through the analysis of the data, additional training that is specific to dyslexia is needed for all teachers. The International Dyslexia Association (2010) has written professional standards for teachers working with individuals with dyslexia. The standards include not only the need for knowledge of specific reading-related concepts but also that teachers need to be able to recognize the distinguishing characteristics of dyslexia (Washburn, Binks-Cantrell, & Joshi, 2013). Further analysis was done to identify the standards for teachers that service dyslexic students in the state of Texas. According to the Texas Education Agency (2014), continuing education for an “educator who teaches students with dyslexia must include training regarding new research and practices in educating students with dyslexia”. Although, the state requires that teachers be trained, it does not govern how each district provides the training to teachers. Local policy will determine the number of professional development hours classroom teachers are trained



regarding the characteristics of dyslexia, its remediation, and accommodations in regular content classes (TEA, 2014).

Demographic data collected also identified a significant number of teachers that have five years or less of teaching experience. The information would indicate that the teachers had recently graduated from a university or participated in a teacher preparation program. A study conducted by Washburn, Binks-Cantrell, and Joshi (2013) reported that teachers, both preservice and in-service, lack a foundational understanding about basic language or linguistic concepts related to reading instruction for beginning and struggling readers. However, it is interesting, that while teachers lack fundamental knowledge, most states, including Texas require institutions of higher learning to include training into the detection of reading related disorders. As part of teacher certification for preservice teachers who began enrollment in an institution of higher education during the 2011-2013 academic year or later, each candidate must receive, as part of his/her bachelor's degree, curriculum instruction in detection and education of students with dyslexia (TEA, 2014).

### **Research Question 3**

Inclusion of students with special needs in regular education classrooms has become a major focus of current educational reform, and regular education teachers' acceptance is a critical component in how this service delivery will play out (Treder, Morse, & Ferron, 2000). School districts must ensure that students who participate in special education services are not denied access to programs on the basis of their disability (TEA, 2014). Students diagnosed with dyslexia are also required to be educated in the least restrictive environment.

Quantitative data collected through the survey analyzed 20 questions included in the survey. The questions asked about teachers' perceptions of inclusion of students with special needs. All teachers, both general education and special education, were included in the survey data, which was disaggregated based on the position held. Data from the survey found that there was significant difference between the perceptions teachers have regarding inclusion. This shows that special education teachers have a better understanding of inclusion laws, and the need for students with learning abilities to be included in the general education setting among their peers. The data collected aligns with research that says although the majority of teachers appear to approve of inclusion (Rose, 2001), when it comes to their own teaching practice, most do not like to be involved in inclusive education (Anderson et al.,2007).

A similar study was conducted by Malki and Einat (2017) that also examined the perceptions and attitudes related to inclusive education held by general education and special education teachers. That study found that the attitudes of both general education and special education teachers are also a factor with identifying the perceptions held by both groups. Qualitative data from this study that provide more insight into the teachers' perceptions of inclusion also showed that general education teachers were less comfortable in their abilities to service students with special needs in their classrooms, which would mean that general education teachers need more training on servicing students with special needs. While there may not be a difference in instruction, reading instruction must be in place to serve students identified with dyslexia (TEA, 2014). As Brady and Woolfson (2008) found, how comfortable a teacher feels around people with

disabilities in general is also likely to have some impact on his/her attitudes towards teaching children with learning support needs.

#### **Research Question 4**

Findings of studies regarding teachers' perceptions on the subject of inclusion have revealed a confusing picture (De Boer et al., 2011). The data collected from Research Question 4 showed that there is no significant relationship between what teachers know about dyslexia as a learning disability, and their perceptions about inclusion. What this data suggests is that having knowledge of dyslexia does not affect how a teacher feels about providing inclusive instruction to students with special learning needs. However, Gibbs and Elliott (2015) examined another perspective. Their survey of teachers' beliefs about working with struggling readers, they found that the way students were labeled influenced the feelings of teachers related to efficacy. This shows that teachers need better preparation in working with all students that may enter their classrooms. It also suggests that there are perceived needs for additional training that is recognized by the majority of those surveyed. Although federal law (Individuals with Disabilities Education Act of 2004) specifically addresses the need for highly qualified special education teachers, it does not ensure that all teachers working with individuals with dyslexia will be prepared to provide explicit reading instruction (Washburn, Binks-Cantrell, & Joshi, 2013). However, other research syntheses have acknowledged the need for teachers (general and special education) working with beginning and struggling readers (Banks et al., 2005; International Dyslexia Association, 2010; National Institute of Child Health and Human Development [NICHD], 2000; Snow et al., 1998; Snow,

Burns, & Griffin, 2005) to understand the characteristics of reading disabilities as well as the importance of early identification and intervention.

Qualitative data collected via teacher interviews, in response to research questions four through six provided a clear understanding into the teachers' knowledge and perceptions of their roles as they service dyslexic students. Through the interview responses provided, five themes emerged concerning the ways professional staff support students and the training they have been provided to regarding dyslexia and servicing students with dyslexia in an inclusive environment. The five themes that emerged in the qualitative phase were: general knowledge, training, instructional skills and strategies, programming, and social-emotional support. A summary of each theme is provided to understand the teachers' perceptions.

### **Research Question 5**

Research question five analyzed how professional staff supported students with dyslexia. To gain a better understanding of how students were supported, the researcher interviewed teachers regarding their knowledge of dyslexia, as well as the training that they had received that supported their instruction while working with dyslexic students. Implications of the study addressed five themes. The themes included general knowledge, training, programming, instructional skills and strategies, and social emotional support as it regards servicing students diagnosed with dyslexia.

## **General Knowledge**

For the purposes of this study, knowledge is defined as any background information that teachers have regarding dyslexia. Based on the findings, teachers have an average knowledge of the learning disability, and observable characteristics. While teachers have a basic knowledge of the learning disability, much of the knowledge is based on the myths and misconceptions of dyslexia, or personal experiences.

**Personal connection to dyslexia.** Having a general knowledge of dyslexia is essential when looking for characteristics that would indicate dyslexia as a source for students struggling academically. General knowledge is critical when identifying areas of need for students. Being able to identify and address targeted areas will allow teachers to provide specific intervention services for students to receive the support required for them to become academically successful. Even though, many facts about dyslexia are generally accepted; terminology can be perplexing (Currie & Wadlington, 2000; Fowler, Patton, & Yarbrough, 1998; Harris & Hodges, 1995; Kerr, 1998; Levine, 1998; Paradice, 2001; Regan & Woods, 2000; Richardson, 1996; Riddick, 1995; Woods, 1998). In addition to the confusion with how dyslexia is defined, previous research has also found that there are also incidences of dyslexia being debated due to the overlapping definition types of learning disabilities as well as the differing specific definitions used by diverse agencies (Kerr, 1998; McCormick, 1995; Currie & Wadlington, 2000).

Through the interviews conducted with six general education teachers, the findings showed that three of the teachers had a personal connection to dyslexia. In addition to having a personal connection to dyslexia, one of the general education

teachers was also diagnosed with dyslexia. Each of the three teachers with a personal connection recognized that dyslexia is a learning disability related to language-based disabilities. All three of the teachers' definitions aligned to recognized definitions found in research.

The three general education teachers without personal connections through family ties shared definitions that were based on personal interactions with diagnosed students, trainings they had previously taken, or from information through research. One teacher expressed she did not know have much background information about dyslexia, being a first-year teacher. Her definition aligns with the consensus found in research that says, the confusion around dyslexia often begins with the contradictory terminology used to describe it, assess it, and understand it (Kerr, 1998; Currie & Wadlington, 2000; Wadlington & Wadlington, 2005). The other two general education teachers with no personal connections to dyslexia, responses could be summarized by stating the way the brain processes information that is essential to reading and writing. Although the three teachers with personal connections had first had experiences in dealing with the learning disability, it appears to the researcher that having personal interactions did not have an effect on the level of knowledge the teachers had in regard to dyslexia, as opposed to the three remaining general education teachers who did not have a personal connection. The responses provided during the interview while defining appeared to take on more personal aspects, rather than addressing the terminology associated with textbook definitions that teachers should have received through professional development or college preparation courses.

Also interviewed were five dyslexia intervention teachers. Two of the five shared a personal connection to the learning disability. Tom, the one dyslexic intervention teacher, defined dyslexia, by relating it to personal experience. Mary, one of the teachers did not give a concrete definition, but rather shared what she does. The three remaining dyslexia intervention teachers shared definitions that aligned to the definition recognized by the International Dyslexia Association. The participants in this study also associate dyslexia with these misconceptions. Just as it was reported with the general education teachers, there was no notable difference in the definitions shared with the research between either group. Each definition shared addressed the textbook terminology, as well as highlighted the confusion among the groups when asked to describe the learning disability.

However, this is contradictory to findings of a study conducted by Worthy et al. (2016), that stated the data collected from the study found that the responses of dyslexia specialists differed in ways from those of classroom teachers, reading specialists, and reading coaches. Data collected from this study found the position held did not enhance the certainty about the definition and characteristics identified when defining dyslexia. The findings from this study also debunked the data from the same study that said, while most teachers and reading specialists were tentative about their knowledge of dyslexia, the dyslexia specialists spoke confidently and without hesitation about the characteristics, interventions, and identification of dyslexia (Worthy et al., 2016). The researcher found that the level of confidence was inconsistent among the general education teachers and

the dyslexia intervention teachers. This seems to be more related to the amount of exposure an individual has had with dyslexia, rather than the position held.

**Myths and Misconceptions.** There are many misconceptions about dyslexia even though it has been researched at length for many years now (Shaywitz & Shaywitz, 2004). Some of the misconceptions include that dyslexia causes one to see letters and numbers backwards, word reversals are common, dyslexia does not run in families, individuals have the same symptom with no variance between them, and even if a child is unable to pronounce the words correctly that comprehension of the text will be exhibited (Wadlington & Wadlington, 2005). Educators also hold many of these myths to be true, and many children will go through their school careers without receiving proper instruction (Thorwarth, 2014).

When asked to share their definitions of dyslexia, all six of the general education teachers included components of definitions found in literature, as well as the most common myths and misconceptions. Of those identified, the most commonly referred to were letter and number reversals, word reversals, and all symptoms being the same among all students diagnosed. The myth is that the only identifying characteristic of dyslexia is for students to write their letters backwards, specifically the letters b, d, p, and q (Porch & Gilroy, 2003), was repeatedly shared. Dyslexia being seen as a visual issue and that dyslexics see numbers and letters backward are still persistent myths within the education system and needs to be eradicated (Thorwarth, 2014).

The dyslexia interventionists are charged with intervening with identified dyslexic students at their respective campuses. Although, each of the interventionist expressed



having had some formal training related to dyslexia, their definitions also included references to the common myths and misconceptions, just as the general education teachers did. There was one dyslexia interventionist associated a common misconception with their own personal experience. This association aligns with the misconception of visual perceptions. According to Shaywitz (2003), one of the most enduring misconceptions is that dyslexic children see letters and words backwards and that reversals (writing letters and words backwards) are an invariable sign of dyslexia.

According to the information collected, the dyslexia interventionists were supposed to be held accountable for having knowledge about dyslexia, above and beyond the general education teachers. The role required them to be well-versed in defining, identifying characteristics, and providing interventions to identified students. However, the data collected revealed that the level of expertise in the learning disability was at or slightly above those they were supposed to be training. Despite having years of experience in the role, all five of the dyslexia interventionists still referred to the most common myths and misconceptions found in research. They also identified those same misconceptions as target areas for intervention.

Information found in research, particularly in Texas, the state where the research was conducted, found that those who intervene with dyslexic students should be well-versed in the characteristics of and intervention practices for students with dyslexia. According to the Dyslexia Handbook, each school must provide each student identified with dyslexia assessments at his/her campus to the services of teacher trained in dyslexia and related disorders (TEA, 2014). However, the handbook continues to say that teachers

who provide instruction for students with dyslexia must have training in the listed components of instruction (reading, writing, and spelling) and be trained in instructional strategies that use individual, intensive, and multisensory methods (TEA, 2014). The handbook does not specifically say that those who intervene with dyslexia must be specifically trained in instructional strategies designed specifically to target the needs of identified dyslexic students.

Some of the issues that may prohibit proper instruction received from teacher training programs are that state standards and curriculum for educating teachers is broad and sometimes not very specific (Thorwarth, 2014). Much is left up to the interpretation of the universities and other professionals (Cheeseman, Hougen, & Smartt, 2010).

The findings of this study relate back to and contradict the findings from a study by Worthy et al. (2016), also based in Texas, that found dyslexia intervention teachers who participated were certain about the definition and characteristics of dyslexia. Information from this study collected suggests that dyslexia intervention teachers are equally as knowledgeable about dyslexia as the general education teachers they are charged with training in effective identification and instructional practices. The data does support a gap in educational literature and research that are sources for important information for teachers and teacher educators about dyslexia research.

The findings from the definitions provided by some of the general education and dyslexia intervention teachers suggested there is an understanding that dyslexia affects the way the brain process information. It has always been associated with many myth and misconceptions that concern the characteristics associated with the disability (Gray,

2008; Hudson, High, & Al Otaiba, 2007; Washburn, Joshi, & Binks-Cantrell, 2011). The findings also indicate that despite the position held or the students served in any grade level, it seems that teachers do not have adequate background knowledge needed to identify or service students with dyslexia.

Having general knowledge of dyslexia is essential when looking for characteristics that would indicate dyslexia as a source for students struggling academically. General knowledge is critical when identifying areas of need for students. Being able to know what are to target will allow teachers to provide specific intervention services for students to receive the support required for them to become academically successful.

### **Training**

Research question six addressed the training all study participants had received with regards to dyslexia, and the inclusion of students identified with dyslexia in the general education classroom setting. General education teachers and dyslexia interventionists in the study had opposing perceptions about the training that they have received, and the opportunities that are made available to improve their professional competence. The responses from the general education teachers focused on the knowledge of the professional development, and the willingness to attend the sessions offered. While the dyslexia intervention teachers addressed instructional program training and the campus and district professional development opportunities that are made available to general education teachers.

**Knowledge of professional development.** Bos, Mather, Dickson, Podhajski, and Chard (2001) state that general education teachers may not be adequately prepared to teach students with dyslexia and that special education teachers also appear to have somewhat limited knowledge. General education teachers were asked to identify the professional development opportunities made available to them within the school district. The data collected from their responses made it clear that all six of the general education teachers participating in the study were unsure about the opportunities that are made available to them that would support their instruction and interactions with dyslexic students. Two of the general education teachers shared that they are required to take a pre-determined set of courses that do not include any information related to dyslexia. The other four general education teachers were also unsure if there had previously been any training directly related to dyslexia. As Thorwarth (2014) found in her study, dyslexia is not covered in many teacher training programs, so information must be sought elsewhere.

In a study conducted to identify teachers' understanding, perspectives, and experiences with dyslexia, the researchers found that there was a strong sense of responsibility among participants to provide supportive instruction geared toward their students' strengths and needs (Worthy, et al., 2016). However, the study also found that participants identified a lack of information and clarity about the district's policies and procedures as one of the many barriers to supporting their students identified with dyslexia (Worthy, et al., 2016). This information also relates to the findings of this study that suggests teachers are unsure of the opportunities available them, opportunities that would support their efforts in the classroom with identified dyslexic students.

In addition to not being aware of the opportunities available, general education teachers must also have knowledge of what training would provide them with skills and instructional strategies needed to meet the specific needs of dyslexic students. Previous research identified current teacher education practices as a factor that impedes effective instruction for students with dyslexia (IDA, 1997; Lyon, 1998; NICHD, 2000). While the state of Texas requires schools to provide “instruction for their literacy needs” (TEA, 2014), there is no specific training provided to teachers as to what those practices should include. As previously stated, the only requirement for instructional practices is that the components of reading, writing, and spelling be included. This would support research by Clark and Uhry (1995) that said part of the problem with dyslexia treatment is that reading education, special education, and remedial reading education are often treated as three autonomous domains without integration or collaboration. As a result, dyslexia training is often embedded in professional development that addresses reading and writing, without directly focusing on dyslexia.

**Willingness to seek out additional training.** While not having the knowledge of professional development sessions available to them was a sub-theme that emerged, it did not have an impact on whether the teachers would attend the session. Based on the responses from general education teachers, they did not express a desire to attend professional development opportunities associated with dyslexia. As Ferri and colleagues (2005) found, participants constructed their perspectives about dyslexia from a variety of sources and experiences, including district professional development, information from

popular media, self-directed research, teaching experience, colleagues, and professional development outside of the district.

Additionally, knowing what professional development opportunities are available, and having a desire to participate, teachers must also have an understanding that continuing to grow professionally may require them to readdress information previously learned while looking at it through a different lens. However, research has found that teachers believe they have little room to grow in the area of instructional practices related to reading (Thorwarth, 2014). Swerling, Brucker, & Alfano (2005) found that another caveat to teaching research-based instruction and providing professional development is that many teachers perceive they know more about reading instruction than they actually do; resulting in those teachers being less likely to participate in further instruction and development seminars (Thorwarth, 2014). This same theory of thought became apparent in the research findings, when several teachers shared that they would not seek out additional training, as they believed they knew enough about the learning disability through personal experience. Thorwarth (2014) also shared that this way of thinking could be troubling since educators need ongoing support no matter what level they perceive their own abilities if they were to stay informed of best practices.

**Departmental communication and training.** The dyslexia intervention teachers recognized the ongoing training they receive at the monthly district meetings. By having the opportunity to meet monthly, the dyslexia interventionists were afforded the opportunity for collaborations with other interventionists and the district coordinator. Professional development opportunities for the dyslexia interventionists came from

district coordinator. This aligns to the systems theory in which communication and interactions are designed (Hall & Hord, 2011; Owens & Valesky, 2007; Senge, 1990). The district coordinator trains the dyslexia interventionists, who in turn return to their campuses to train the general education teachers.

According to the TEA (2014) teachers who provide instruction for students with dyslexia must be trained in the professional development activities specific to dyslexia as specified by each district. Leaders provide professional development in order to increase student achievement by influencing professional practice (Guskey, 2000). In turn, they were able to share with the general education teachers, professional development sessions that were provided to support their instructional practices. According to research, teacher educators are responsible for preparing reading teachers (Washburn, Binks-Cantrell, & Joshi, 2013).

Findings from this study suggest that district practices are aligned to the research that acknowledges the levels of teacher preparation. The concern, however, is that the dyslexia interventionists were the only ones to receive direct training or communication regarding dyslexia. General education teachers received the information from the interventionists. The information received and shared was subject to the interpretation of the individual, and their level of knowledge about dyslexia. Information was also subject to the matter in which it was disseminated to the campuses.

**Instructional program training.** While the dyslexia intervention teachers acknowledged the training, they received from the district coordinator, they also shared some of the programs that were brought in to enhance the learning. The two programs

that dyslexia interventionists have received training were LETRS and Read Well. In addition to specific programs, all five of the dyslexia interventionist were in consensus about the trainings that are continually offered by the district.

Continued professional development and follow up training are beneficial for the interventionists, as it supports maintaining focus on the importance of including all the components that should be included in dyslexia intervention programs (TEA, 2014). The programs that were shared by dyslexia interventionists align to the state requirements for the curriculum used by the specialists for teaching students with dyslexia. According to the Dyslexia Handbook, a locally developed program must align to the descriptors as outlined. In addition, as with a purchased reading program, a locally developed dyslexia program must be evidence-based (TEA, 2014).

**Campus and district professional development opportunities for general education teachers.** The dyslexia interventionists were asked to share the opportunities that were available to general education teachers. Overall, dyslexia intervention teachers had a positive perception of the professional development and support made available to all teachers, while the general education teachers had a negative perception of the opportunities available to the them.

The findings related to this theme would support and align with other research findings that teachers are underprepared to help students with dyslexia. As a result of the findings from this study, the evidence suggests that there is a lack of training for both general education teachers and dyslexia intervention teachers. The findings, as they are related to previous research, are in direct correlation to the perspectives and beliefs of



those interviewed. Wadlington and Wadlington (2015) also shared from the findings of the administered Dyslexia Belief Index that educators can be better prepared to help individuals with dyslexia, and participants wanted to learn more about dyslexia. These findings are also aligned with Greenfield, Rinaldi, Proctor, and Cardarelli (2010), which stated that “teachers’ concerns are related to the implementation of interventions and appropriate instruction.

### **Research Question 6**

#### **Instructional Skills and Strategies**

Through the analysis of the data, one of the themes that emerged was the teachers’ lack of knowledge toward effective instructional strategies for students diagnosed with dyslexia. General education teachers shared strategies related to reading comprehension and writing, and student accommodations. Teachers also referenced the 504 accommodation plans they were given for the some of their identified dyslexic students. While the teachers had received training for general instructional practices, they did not have formal training to identify the differences between instructional strategies and accommodation implementation. As a result, one could conclude that identified students did not have their accommodations implemented accurately or with fidelity. According to the Dyslexia handbook, accommodations were provided to students with dyslexia to offset some of the effects of dyslexia, which may help students to achieve academic success, and should be individualized based on students’ needs (Shaywitz, 2003; TEA,2014). The dyslexia interventionist provide insight into the structure of intervention, the RTI procedures, and student advocacy and motivation.

**Reading comprehension and writing.** During the study, the researcher interviewed both elementary and secondary general education teachers. The elementary teachers shared that instructional practices were focused on student reading and writing. Interventions that have an emphasis on phonological and phonetic skills are most effective in reducing dyslexia (Elbro & Peterson, 2004; Odegard, Ring, Smith, Biggin, & Black, 2008; Santoro, Coyne, & Simmons, 2006; Simmons, et al., 2008; Vadasy, Sanders, & Peyton, 2006). Additional strategies that were shared through the teacher responses included using colored overlays and unlined journals to support students in an instructional setting.

As the elementary general education teachers focused on instructional reading strategies, the secondary teachers shared strategies that lead to student independence in the academic setting. Generally, the teachers shared that they provided the students with additional time to complete assigned tasks. By making the connections personal, the teacher was able to support the student in a different capacity than others had previously done. The teacher sharing her personal experience also was supported by previous research that found teachers may or may not have the capacity or desire to create such relationships because of their own attachment experiences (Ainsworth, 1989; Bretherton, 1992; Divoll, 2010; Slater Ainsworth & Bowlby, 1991; Watson & Ecken, 2003;). It is also unclear whether all teachers are willing to share information or feel comfortable making classroom relationships the center of their teaching philosophy (Divoll, 2010; Watson & Battistich, 2006).

Some teachers simply shared the resources they use with students, such as colored paper/overlays, according to the students' accommodation sheet, while the others shared motivational techniques they use with the students. Effective instructional strategies are key in providing the students with the services they require to be successful. Classroom teachers may have used appropriate teaching strategies in the classroom but may not have distinguished between an instructional strategy and an accommodation (Kempf, 2015).

### **Programming**

The district in this study has a department specifically dedicated to supporting the RtI process and dyslexia intervention. Effective programming is essential when ensuring the students are being served at the highest capacity possible (Garavan & McCarthy, 2008). When analyzing the data associated with the district program, and the roles of the teachers in the program, there was an abundance of evidence that showed there is no consistency across campus programs within the district.

The perceptions of their roles among the two groups interviewed ranged from one end of the spectrum to another. Some of the dyslexia intervention teachers felt as though their role was to test and share information with teachers, but not to intervene with students diagnosed with dyslexia. Among the dyslexia intervention teachers there were also inconsistencies with the structure of the program from campus to campus. However, according to past research, the role of a dyslexia interventionist includes, but is not limited to, coaching general education teachers, assisting in the identification of students, providing suggestions and resources to teachers, and intervening with identified students (Bloom, Castagna, Moir, & Warren, 2005; Wong and Wong, 2008).

Inconsistencies with perceptions and beliefs about roles and program structures are also reflected in the quantitative data collected for this study. Referring to research question 1, the numbers are statistically low. This an indicator that roles teachers' play in the identification process are also not well defined or established, which leads to program structures and expectations not being defined or implemented.

### **Social and Emotional Support**

In the literature review of this study, research found that children with learning differences often come to think of themselves as lazy or defective (Levine, 2003). Additionally, Johnston (1985) notes that adolescents who lack literacy skills are painfully aware of their inadequacies. Following an analysis of the data, all teachers interviewed tend to go above and beyond to ensure that students remain confident in their abilities. There are many factors that promote positivity when assisting students with their emotional needs, as well as their learning disability.

Findings from this study are consistent with past research focused on student-teacher relationships. Research suggests that learning is optimized when students feel safe and are surrounded by caring and loving individuals (Jensen, 2005). Additional research states that when students are disruptive in class, teachers make little academic contact with them and academic growth suffers (Brophy, 1983; Crombie, 2002; Gwernan-Jones & Burdan, 2009; Wadlington, Elliot, & Kirylo, 2008).

In this study, the general education teachers and dyslexia interventionists had similar levels of understanding about dyslexia. The general knowledge of both groups was consistent with the most common myths and misconceptions found in research.

Although the interventionists were identified as being the individuals with a greater understanding and expertise in the subject matter, the findings show that there was no significant difference between the two. Inconsistencies were also identified related to the professional development and level of training that teachers have received. This would explain the statistical data that showed the number of the students identified in the district is significantly below the identification standards found in research. As a result of the lack of knowledge, the data also showed that general education teachers and dyslexia interventionists were also unsure of the best practices and instructional methods needed for students to be successful in the general education setting. In addition, the data revealed inconsistencies with program structure and level of implementation across campuses. However, all study participants agreed and felt that the social and emotional needs of identified students was being met in the general education setting.

### **Implications for Theory, Research, and Practice**

The findings from this research have several implications for causal attribution theory, research, and practice. This section discusses the implications and suggestions by the researcher.

#### **Implications for Theory**

There are several theories of dyslexia that have been documented in the research. Just as there are different types of specific learning disabilities, there are likely to be different causes for the perceptions held by teachers (Heward, 2010). Teachers often use causal attributions when searching for reasons for these negative or unexpected outcomes in their students (Clark, 1997). It is important to identify factors that influence the

perceptions of general and special education teachers that work with students diagnosed with specific learning disabilities in inclusive classroom environments.

The theory contends that teachers' perceptions of their students' behavior can influence their future expectations and responses to students (Vialle & Woodcock, 2011). In the educational arena, Weiner's (1979, 1985, 1986) attribution theory of motivation has made a significant influence, particularly regarding individuals' perceptions and behaviors in academic-related events (Linnenbrink & Pintrich, 2002; Tollefson, 2000; Zhou, 2006).

From this study, two implications for causal attribution theory emerged. First, this study analyzed teacher perceptions of dyslexia. Weiner's (1972) attribution theory guided the research in this study with the leading concept that teachers' perceptions explain the approach that is taken when supporting students with dyslexic students. Interviews with general education teachers and dyslexia interventionists provided information about teachers' understanding of dyslexia as a learning disability, as well as, training received, which influenced the kind of support provided for students. Future research should conduct interviews with students and parents on their perceptions of dyslexia as a learning disability, and what influences those perceptions.

Second, the beliefs that teachers held regarding inclusion of students with a documented learning disability was examined. Weiner (2001) emphasized that emotional and behavioral cues conveyed by the observer may affect the actors' attribution and emotions. In this sense, teachers' attributional beliefs of students with learning disabilities and dyslexia may play an important role in relation to these students'

motivations, behavior, and outcomes in learning (Woodcock & Jiang, 2016). Teachers can often base these interpretations on their prior knowledge and experience (Woodcock & Jiang, 2016). While this study found that there was a significant difference in beliefs of inclusion held by general education and special education teachers, interviews found that teachers felt that inclusion was a good idea. Future research should conduct student interviews on their perceptions of inclusion to determine if they feel their needs are being met by teachers in the general education setting.

### **Implications for Future Research**

Through the findings from this study, implications for future research emerged. First, this study looked at the beliefs of dyslexia held by general education and special education teachers. Data received from this study show that there was no significant difference in the beliefs of dyslexia between the two groups of teachers. The research conducted in this study focused on one large, urban school district. Future research should be conducted using other school districts to determine if the perceptions of dyslexia among teachers, and to determine the factors that influence those perceptions.

Secondly, this study focused on the beliefs of inclusion held by general education and special education teachers. Therefore, future research should examine the perceptions of inclusion held by additional school personnel, primarily administrators, students diagnosed with dyslexia, and parents of students that have been diagnosed with dyslexia to determine if there is a difference in their perceptions of inclusion in a public school.

Lastly, general education teachers in this study raised questions regarding servicing students that are dyslexic, and ELL or bilingual. Learning a second language as

well as being diagnosed with dyslexia has a different impact on the reading process and intervention of dyslexic students. Much diversity exists among students often referred to as bilinguals. Students can vary greatly in their level of knowledge of their two languages (Bilingual Special Education Network of Texas, 2009). Further research should be conducted to gain greater insight into the teacher's perceptions of dyslexia as it pertains to ELL students. Examining the training that would be needed, and the support that should be provided for students that have both indicators to be academically successful.

### **Implications for Practice**

With regards to educational practice two implications emerged from the research. First, teachers are charged with identifying characteristics and referring possible students with dyslexia for testing. According to the Texas Dyslexia Handbook (2014), if a student is not progressing in the general, remedial, and/or compensatory reading programs in school and other causes have been eliminated, the student should be recommended for assessment. However, the findings indicated that general education teachers and dyslexia intervention teachers' understanding of dyslexia and the characteristics for identification are driven by myths and misconceptions, therefore, the student identification process should be reexamined. Their awareness and understanding of dyslexia must be strengthened. In addition to strengthening their level of understanding of dyslexia and lack of professional training districts should provide training that encourages teachers to focus on the myths and misconceptions which impede the teachers from having a clear understanding of the learning disability. Therefore, the myths and misconceptions associated must also be addressed through proper training. However, personnel at the



district level or dyslexia interventionists that provide the training for teachers, must first have a clear understanding of the learning disability themselves.

Second, professional development for teachers is needed to support students diagnosed with dyslexia. A review of the professional development guidelines and teacher training standards should be reevaluated to determine the effectiveness of the professional development that is offered for all teachers. Although teachers who teach students with dyslexia must receive continuing education regarding new research and practices, local policy determines the number of professional development hours classroom teachers are trained regarding the characteristics of dyslexia, its remediation, and accommodations in regular content classes (TEA, 2014). Development of classroom teachers in order to support the learning of students with dyslexia aligns with the human resources development theory (Owens & Valesky, 2007). By having teachers' knowledge and understanding enhanced through professional learning, the quality of the district and the services it provides to students also improves. Providing specific professional development sessions that are aligned to the needs of the classroom teachers helps to grow their knowledge base of the classroom teachers in the school district (Garavan & McCarthy, 2008). Effective professional development is necessary to support the academic as well as social-emotional success of dyslexic students.

### **Conclusion**

Literature asserts that knowledge of the learning disability is ambiguous and calls for clarification (Shaywitz, 2003; Vail, 2001). The goal of this study was to analyze the

beliefs of dyslexia and the perceptions of inclusion from general education and special education teachers.

Findings from this study indicate that the teachers do not have strong background knowledge of dyslexia. Therefore, additional work is necessary to support the teachers that work with students that have been identified with dyslexia. The findings also indicate that the beliefs of dyslexia do not influence the perceptions of inclusion, which is supported in the literature. A study conducted found that the success of policies of inclusion, acceptance, and accommodations of students the learning disabilities in mainstream settings is dependent on teachers' attitudes (Varcoe & Boyle, 2014).

Participants in the study revealed misconceptions of dyslexia and instructional practices for students. The study also revealed a need for consistency across the district used in the study for professional development opportunities, campus programming, and intervention techniques. Information collected from this study highlight the need for further research that supports dyslexia identification, teacher knowledge, and student achievement.

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APPENDIX A:  
CPHS APPROVAL FORM

# University of Houston Clear Lake

## EXPECTED DURATION

The total anticipated time commitment will be approximately 15 to 20 minutes to complete the survey. For selected participants, an additional 30 to 45 minutes to answer one on one interview questions will be required.

## RISKS OF PARTICIPATION

There are no anticipated risks associated with participation in this project are none.

## BENEFITS TO THE SUBJECT

There is no direct benefit received from your participation in this study, but your participation will help the investigator(s) better understand the factors as they relate to identifying students with Dyslexia.

## Research Involving Human Subjects Continuing Review of Protocol Involving Human Subjects §46.109(e)

<http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.html#46.109>

## PROCEDURES

The research procedures are as follows: The data collection will begin with the researcher obtaining permission to conduct the study from both the University of Houston – Clear Lake, as well as Bluebonnet ISD (a pseudonym), where the participants were employed. The researcher gained approval the university with the Committee for the Protections of Human Subjects (CPHS) application, and the Internal Review Board (IRB) via district personnel. Consent for the participants was given by each individual participant on a voluntary basis. Participants will not receive any compensation for their participation.

Data collection will be done in the form of a survey, as well as focus groups and individual interview questions.

**TITLE:** Identifying the Perceptions of Dyslexia and Inclusion Held by School Personnel and the Effects on Identification of Students

**PRINCIPAL INVESTIGATOR(S):** \_\_\_\_\_

**STUDENT RESEARCHER(S):** Mytra A. Cunningham  
\_\_\_\_\_

**FACULTY SPONSOR:** \_\_\_\_\_  
Dr. Renee Lastrapes

**CPHS EXPIRATION DATE:** \_\_\_\_\_  
20 September 2017

**PROJECT END DATE:** \_\_\_\_\_  
31 August 2018

**CPHS STATUS:** \_\_\_\_\_  
Approved

**1. Status Report**

A. Provide total number of subjects enrolled to date:

Currently there are 53 subjects enrolled in the study.

B. Provide demographics of subjects enrolled to date:

Gender	
Female	47
Male	6
Ethnicity	
African-American	17
Asian	5
Caucasian	14
Hispanic	17

C. Provide information about additional enrollment of subjects expected for upcoming period:

Through coordination with the district’s Director of Instruction and Director of Special Populations, additional subjects will be recruited to participate in the survey via email, and face to face recruitment at district meetings. Additionally, campus principals will support recruitment efforts by disseminating the survey to campus staff via email.

D. Provide information about subjects recruited

D1. the number from whom data were received:

Data was received from fifty-three participants during the initial collection.

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D2. the number who withdrew or were dropped and reasons:

There was a total of sixty-two subjects recruited to participate in the study. Data was not received from nine of those recruited. The reasons for not participating included unavailability at the time of the survey administration, and unwillingness to participate in the study.

D3. the number of complaints received from subjects about the study or their participation:

No complaints were received from subjects about the study of their participation.

E. Provide details of any unanticipated problems or adverse events involving risks to subjects encountered to date:

At this time, the researcher has not encountered any unanticipated problems or adverse events involving risks to subjects.

F. Provide current assessment of the research and its related risks and benefits; e.g., any findings in the research that affect the risk-benefit ratio or suggest a need to amend or modify research protocol; any problems with privacy or confidentiality; etc.:

The actual survey that was piloted should be rewritten to include a neutral answer choice. Based on the additional comments from participants, the consensus was to include an indicator to show neutrality.

Also recommended, would be to reevaluate question one to be assessed both qualitatively and quantitatively. In order to truly identify the perceptions teachers, have in regard to dyslexia, oral responses are needed. The quantitative provided information regarding general perceptions, but the research needs to go deep to find out what those specific perceptions are, and what the background knowledge that leads to those perceptions.

G. Provide summarization of modifications made to the original protocol:

Based on the information collected from the pilot of the instrument used, a neutral indicator was added to the survey instrument. For question one of the protocol, an option was given for subjects to elaborate more, by providing a written response in addition to the numerical designation.

- H. Provide amended informed consent form in two versions: modified version to be given to newly recruited participants and marked-up version identifying changes to original informed consent form.

There are no changes to the informed consent form. The original informed consent has been including with the CPHS renewal application.

**2. CPHS Application** *[See email with originally approved protocol attached.]*

If there are no changes in the design or protocol, please state below. If there are any modifications to the design or protocol, provide revised protocol with changes indicated by different font color.

There are no changes in the design or protocol.

**3. Informed Consent** *[See email with originally approved informed consent attached.]*

If there are no changes to the informed consent form, please state below. If the informed consent form needs to be revised, attach modified version for CPHS review and approval and marked-up version of original informed consent form. [See item (h) above].

There are no changes to the informed consent form.

**4. Instruments** *[See email with originally approved instruments attached.]*

Provide any new instruments or changes to originally approved instrument for CPHS review and approval. If there are no changes, please state below.

There are no new instruments or changes to the originally approved instrument for CPHS review and approval.



APPENDIX B:  
INFORMED CONSENT FORM

## **Informed Consent to Participate in Research**

You are being asked to participate in the research project described below. Your participation in this study is entirely voluntary and you may refuse to participate, or you may decide to stop your participation at any time. Should you refuse to participate in the study or should you withdraw your consent and stop participation in the study, your decision will involve no penalty or loss of benefits to which you may be otherwise entitled. You are being asked to read the information below carefully and ask questions about anything you don't understand before deciding whether or not to participate.

**Title: IDENTIFYING THE PERCEPTIONS OF DYSLEXIA AND THE AFFECTS ON STUDENT ACHIEVEMENT**

**Principal Investigator(s):**  
**Student Investigator(s): Mytra Cunningham**  
**Faculty Sponsor: Renee Lastrapes, Ph.D.**

### **PURPOSE OF THE STUDY**

The purpose of this research is to identify the most common misconceptions that school personnel have about dyslexia.

### **CONFIDENTIALITY OF RECORDS**

Every effort will be made to maintain the confidentiality of your study records. The data collected from the study will be used for educational and publication purposes, however, you will not be identified by name. For federal audit purposes, the participant's documentation for this research project will be maintained and safeguarded by the Principal Investigator for a minimum of three years after completion of the study. After that time, the participant's documentation may be destroyed.

### **FINANCIAL COMPENSATION**

There is no financial compensation to be offered for participation in the study.

### **INVESTIGATOR'S RIGHT TO WITHDRAW PARTICIPANT**

The investigator has the right to withdraw you from this study at any time.

### **CONTACT INFORMATION FOR QUESTIONS OR PROBLEMS**

The investigator has offered to answer all your questions. If you have additional questions during the course of this study about the research or any related problem, you may contact the Principal Investigator, Michelle Peters, Ph.D.

If you have additional questions during the course of this study about the research or any related problem, you may contact the Student Researcher, Mytra Cunningham.

**SIGNATURES:**

Your signature below acknowledges your voluntary participation in this research project. Such participation does not release the investigator(s), institution(s), sponsor(s) or granting agency(ies) from their professional and ethical responsibility to you. By signing the form, you are not waiving any of your legal rights.

The purpose of this study, procedures to be followed, and explanation of risks or benefits have been explained to you. You have been allowed to ask questions and your questions have been answered to your satisfaction. You have been told who to contact if you have additional questions. You have read this consent form and voluntarily agree to participate as a subject in this study. You are free to withdraw your consent at any time by contacting the Principal Investigator or Student Researcher/Faculty Sponsor. You will be given a copy of the consent form you have signed.

Subject's printed name: \_\_\_\_\_

Signature of Subject: \_\_\_\_\_

Date: \_\_\_\_\_

Using language that is understandable and appropriate, I have discussed this project and the items listed above with the subject.

Printed name and title: \_\_\_\_\_

Signature of Person Obtaining Consent: \_\_\_\_\_

Date: \_\_\_\_\_

**THE UNIVERSITY OF HOUSTON-CLEAR LAKE (UHCL)  
COMMITTEE FOR PROTECTION OF HUMAN SUBJECTS HAS  
REVIEWED AND APPROVED THIS PROJECT. ANY QUESTIONS  
REGARDING YOUR RIGHTS AS A RESEARCH SUBJECT MAY**

BE ADDRESSED TO THE UHCL COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS (281-283-3015). ALL RESEARCH PROJECTS THAT ARE CARRIED OUT BY INVESTIGATORS AT UHCL ARE GOVERNED BY REQUIREMENTS OF THE UNIVERSITY AND THE FEDERAL GOVERNMENT. (FEDERALWIDE ASSURANCE # FWA00004068)

APPENDIX C:  
SURVEY COVER LETTER

December 2017

Dear School Employee:

Greetings! You are being solicited to complete a survey regarding Dyslexia as a Learning Disability. The purpose of this survey is to examine the perceptions educators have regarding Dyslexia, and its identification as a Learning Disability. The data obtained from this study will not only allow UHCL's Curriculum and Instruction Department to track the preparedness of their teachers, but also to provide additional training and support to teachers who serve Dyslexic students within school districts.

This survey will be administered online, and it will remain completely anonymous. Please try to answer all the questions. Filling out the attached survey is entirely anonymous but answering each response will make the survey most useful. This survey will take approximately 10-15 minutes to complete and all your responses will be kept completely anonymous. No obvious undue risks will be endured, and you may stop your participation at any time. In addition, you will also not benefit directly from your participation in the study.

Your cooperation is greatly appreciated and your willingness to participate in this study is implied if you proceed with completing the survey. Your completion of this survey is not only greatly appreciated, but invaluable. If you have any further questions, please feel free to contact Dr. Renee Lastrapes. Thank you!

Sincerely,

Myra Cunningham

University of Houston – Clear Lake  
Doctoral Candidate